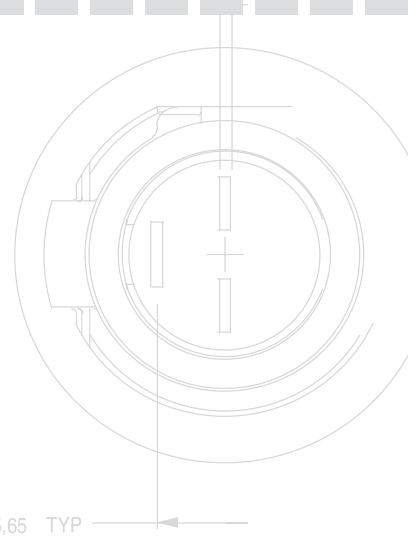


C&K[®]



PRODUCT

GUIDE

This product guide contains a selection of our most popular switches and components.

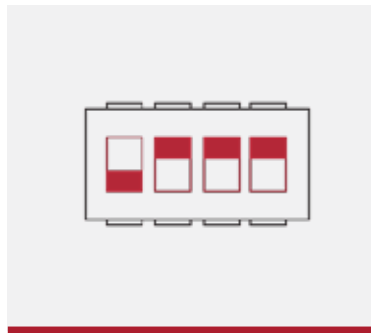
A Selection from our **55K Products**

For over 80 years, leading designers, manufacturers and distributors of electronics have turned to C&K when they require mission-critical reliability in an electromechanical switch, high-rel connector or custom assembly. The reason they keep coming back is because C&K's innovative design, cutting-edge production process, and strict quality assurance standards produce the world's best switches and components.



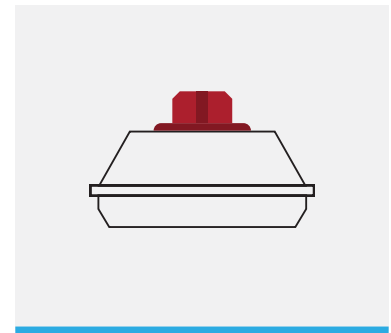
DETECT SWITCHES

Surface mount, through-hole,
Sealed
Pushbutton, snap-acting, lever actuation



DIP SWITCHES

1-16 position
Surface mount, through-hole
Washable
Top, side actuation



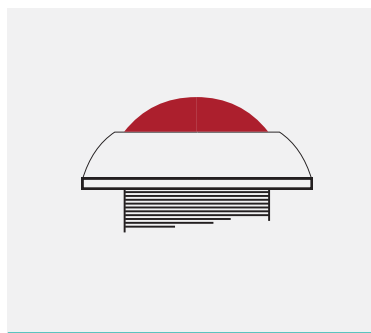
KEYSWITCHES

Surface mount, through-hole
Illuminated
Momentary, push-on/push-off



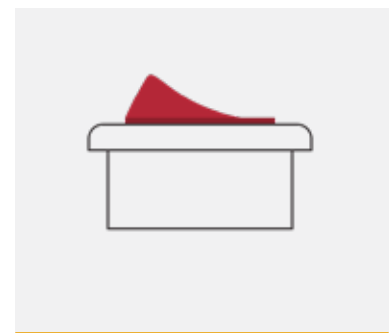
NAVIGATION SWITCHES

Multi-direction
Joystick, rocker



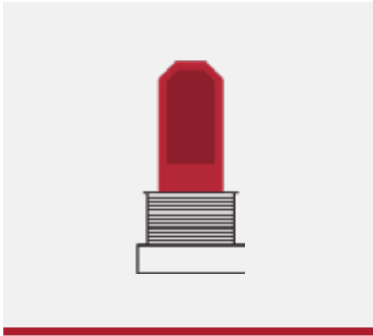
PUSHBUTTONS

Illuminated
Sealed
Miniature, subminiature, microminiature
Surface mount, through-hole, bushing mount



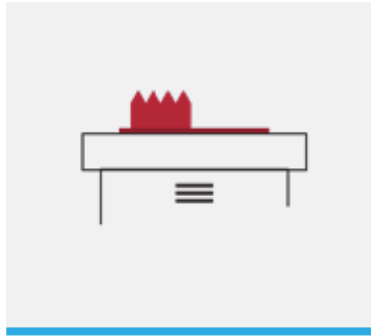
ROCKER SWITCHES

Snap-in, panel mount
Illuminated options
Several body sizes and shapes



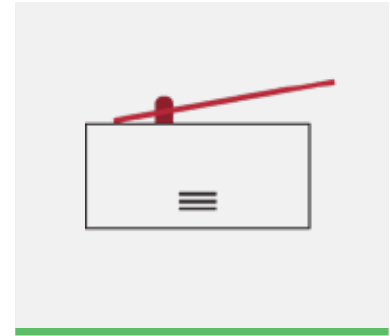
ROTARY SWITCHES

Multi-pole, multi-position
Sealed



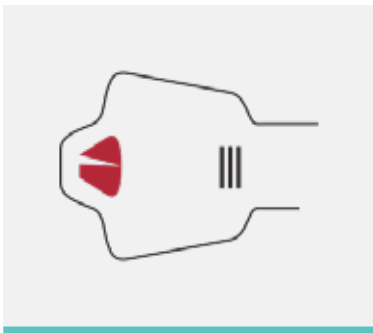
SLIDE SWITCHES

Miniature, ultraminiature
Process sealed switches
Surface mount, through-hole



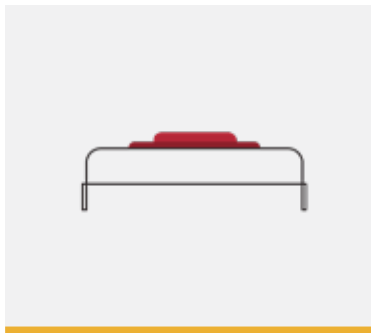
SNAP-ACTING SWITCHES

Miniature, subminiature
Sealed
Broad range of operating forces and lever styles
Power ratings up to 30 A



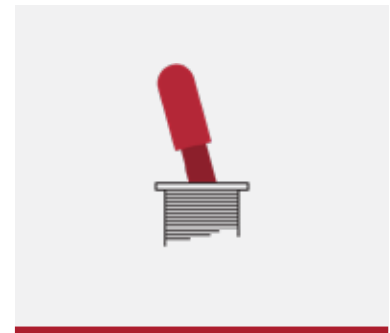
SWITCHLOCKS

Solder lug terminal
PC thru-hole
Wire lead
Quick connect
Anti static switch
200 to 2,000 different key codes



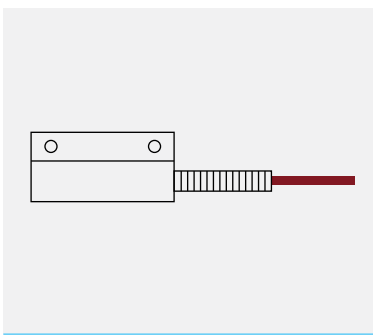
TACTILE SWITCHES

Surface mount, through-hole
Sealed
Top, side actuation
100,000 to 1,000,000 cycles



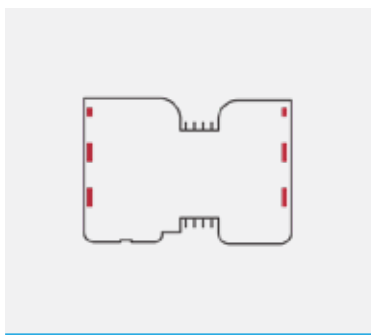
TOGGLE SWITCHES

Miniature, subminiature, ultraminiature
Sealed
Surface mount, through-hole, bushing mount



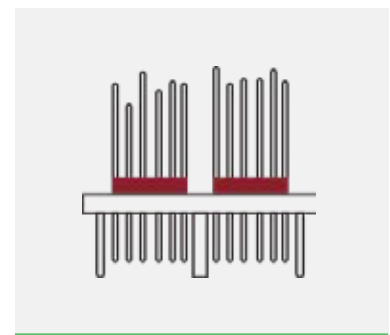
SENSORS

Sealed
Long life
Quick & easy installation



SMARTCARD CONNECTORS

ISO, SIM, SAM cards
Low profile
Anti-piracy



HIGH RELIABILITY CONNECTORS

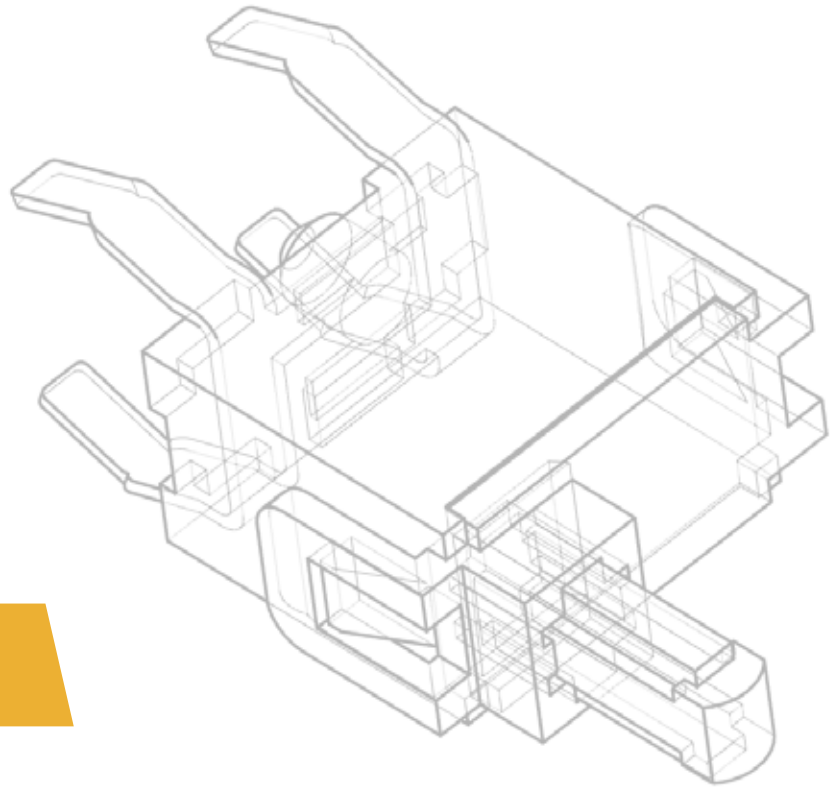
Microminiature & D-sub
Mil/Aero & medical
Board-board, board-cable, cable-cable

SWITCH

SOLUTION DESIGN INNOVATION

TABLE OF CONTENT

| | |
|----------------|-----------------------------|
| 5-13 | Detect |
| 14-20 | DIP |
| 21-25 | Keyswitch |
| 26-28 | Navigation |
| 29-37 | Pushbutton |
| 38-42 | Rocker |
| 43-46 | Rotary |
| 47-54 | Slide |
| 55-62 | Snap-Acting |
| 63-65 | Switchlock |
| 66-85 | Tactile |
| 86-92 | Toggle |
| 93-95 | Sensor Products |
| 96-97 | Smart Card Connectors |
| 98-99 | High Reliability Connectors |
| 100-102 | Part Number Index |



PRODUCT SELECTION GUIDE

Detect Switches

With different series of standard detect switches, C&K offers the largest selection in SMT, through-hole, panel and snap-in / chassis and screw-mount versions. C&K's detect switches are offered in a variety of sizes and shapes, with various actuator orientations including vertical or horizontal, top or side, or right-angle or left, and come with soft actuation force. These detect switches include low profile, compact, micro- and ultra-miniature designs, with some sealed versions available.



| SERIES | HDT | DS | HDS | HDP | SDS | DDS |
|-------------------------------|---------------|---------------------------|---------------|---------------|------------------------|-----------|
| Travel to Make (mm) | 0.3 | See datasheet | 0.17 | 0.24 | 0.35 | 0.45 |
| Overtravel | 0.75 | See datasheet | 0.5 | 1.66 | 1.65 | 1.95 |
| Total Travel | 1.05 | See datasheet | 1.07 | 1.9 | 2.0 | 2.4 |
| Actuator Length | 1.4 | See datasheet | 1.17 | 2.15 | 2.5 | 2.6 |
| Life Cycle | 100,000 | 20,000 / 50,000 / 100,000 | 100,000 | 100,000 | 50,000 | 50,000 |
| Contact Type | SPST N.O. | SPST / SPDT | SPST N.O. | SPST N.O. | SPST N.O. SPST N.C. | SPST N.O. |
| Max. Voltage | 5 V | 5 V / 16 V / 30 V | 5 V | 5 V | 12 V | 30 V |
| Max. Switching Current | 1 mA | 1 mA / 5 mA / 100 mA | 1 mA | 1 mA | 100 mA | 100 mA |
| Sealing | No | No | No | No | No | No |
| Mounting | Surface mount | Thru-hole, solder lug | Surface mount | Surface mount | Surface mount | Thru-hole |



| SERIES | FDSD | FDSE | KDS | KSU |
|-------------------------------|---------------|---------------|------------------------|---------------------------|
| Travel to Make (mm) | 1.6 (15°) | 1.44 | 1.25 max. | 0.5 |
| Overtravel | 1.45 | 1.07 | 8.9 | 1.0 |
| Total Travel | 3.05 (60°) | 3.14 (60°) | 10.16 | 1.5 |
| Actuator Length | 2.3 | 2.67 | 10.16 | 1.5 |
| Life Cycle | 50,000 | 50,000 | 10,000 | 100,000 |
| Contact Type | SPST N.O. | SPST N.C. | SPST N.O. SPST N.C. | SPST N.O. |
| Max. Voltage | 5 | 5 | 20 V | 32 V |
| Max. Switching Current | 10 mA | 1 mA | 0.4 VA | 50 mA |
| Sealing | No | No | No | Dust and water drop proof |
| Mounting | Surface mount | Surface mount | Snap-in panel | Surface mount |



| SERIES | ATS | KSR D | KSC D | KSJ D | KMT0 D |
|------------------------|----------------|---------------------|---------------------|---------------|---------------|
| Travel to Make (mm) | 0.7 (to break) | 0.3 | 0.6 | 0.5 | 0.15 |
| Overtravel | 0.4 | | 0.65 | 0.4 | |
| Total Travel | 1.1 | 0.3 | 1.5 | 1.05 | 0.25 |
| Actuator Length | 1.6 | 0.8 | 2.6 | 1.4 | 0.35 |
| Life Cycle | 5,000 | 100,000 | 500,000 / 2,000,000 | 200,000 | 300,000 |
| Contact Type | SPST N.C. | SPST N.O. | SPST N.O. | SPST N.O. | SPST N.O. |
| Max. Voltage | 32 V | 32 V | 32 V | 32 V | 32 V |
| Max. Switching Current | 50 mA | 10 mA | 10 mA / 50 mA | 10 mA / 50 mA | 25 mA |
| Sealing | IP54 | Dust and flux tight | IP67 | Flux tight | IP68 |
| Mounting | Surface mount | Surface mount | Surface mount | Thru-hole | Surface mount |



| SERIES | KMR D | K12S D | K12 D | RB |
|------------------------|---------------|--------------------------------------|------------------|------------------|
| Travel to Make (mm) | 0.225 | 0.85* | 0.55* | 10° / 90° |
| Overtravel | | 0.65 | 0.95 / 1,45 | |
| Total Travel | 0.4 | 1.5 | 1.5 / 2 | |
| Actuator Length | 1.1 | | | |
| Life Cycle | 100,000 | 300,000 | 1,000,000 | 20,000 / 100,000 |
| Contact Type | SPST N.O. | SPST N.O. / N.C. DPST N.O. / N.C. | SPST N.O. / N.C. | SPST / SPDT |
| Max. Voltage | 32 V | 30 V | 32 V | 5 V / 24 V |
| Max. Switching Current | 50 mA | 100 mA | 100 mA | 1 mA / 25 mA |
| Sealing | IP40 | IP40 / 6x | IP 40 | |
| Mounting | Surface mount | Surface mount | Thru-hole | Thru-hole |

* For information



HDT SERIES

Micro Miniature Surface Mount Detect Switches

Features / Benefits

Low profile package
 Design allows top or side actuation
 Low actuation force, 35 grams max.
 Pick and place compatible, available in tape & reel packaging
 Halogen free

Typical Applications

Consumer electronics
 Computers
 Medical devices
 ATCA and MicroTCA devices

| PART NUMBER | Contact Type | Contact Rating | Pre-Travel | Overtravel | Total Travel | Mechanical / Electrical Life |
|-------------|--------------|----------------|------------|------------|--------------|------------------------------|
| HDT0001 | SPST, NO | 1 mA 5 VDC | .30 mm | .75 mm | 1.05 mm | 100,000 cycles min. |



HDS SERIES

Micro Mini Side Actuated Surface Mount Detect Switches

Features / Benefits

Low profile package sits just 1.4 mm off PCB
 Design allows top or side actuation
 Right and left options available

Typical Applications

Consumer electronics
 Medical devices
 ATCA and MicroTCA devices

| PART NUMBER | Contact Type | Contact Rating | Contact Material | Total Travel | Over Travel | Operating Life |
|-------------|--------------|----------------|--------------------|--------------|-------------|----------------|
| HDS001R | SPST, NO | 1 mA 5 VDC | Silver over nickel | 1.87 mm | 1.5 mm | 100,000 cycles |



HDP SERIES

Micro Mini Side Actuated Surface Mount Detect Switches

Features / Benefits

Low profile
 Right and left options available
 Side actuation

Typical Applications

Consumer electronics
 Medical devices
 ATCA and MicroTCA devices

| PART NUMBER | Contact Type | Contact Rating | Contact Material | Total Travel | Over Travel | Operating Life |
|-------------|--------------|----------------|--------------------|--------------|-------------|----------------|
| HDP001R | SPST, NO | 1 mA 5 VDC | Silver over nickel | 3.2 mm | 2.96 mm | 100,000 cycles |



SDS SERIES

Micro Miniature Surface Mount Detect Switches

Features / Benefits

Low profile package sits just 2mm off PCB
 2mm overtravel ideal for detector applications
 Low actuation force (75 grams max.)
 RoHS compliant and compatible

Typical Applications

Medical devices
 Consumer electronic devices
 PCB lock cam detect
 Smart card detect
 ATCA and MicroTCA

| PART NUMBER | Contact Type | Contact Rating | Contact Material | Total Travel | Over Travel | Operating Life |
|-------------|--------------|-----------------|------------------|--------------|-------------|----------------|
| SDS0001 | SPST, NO | 100 mA @ 12 VDC | Silver | 2.0 mm | 1.65 mm | 50,000 cycles |



FDSD SERIES

Micro Mini Side Actuated Detect Switches

Features / Benefits

Extremely small package size
 Vertical side actuation
 Flat or bending terminations
 Long travel type
 RoHS compatible and compliant

Typical Applications

Consumer electronics
 Medical devices
 Safety control devices

| PART NUMBER | Actuator Height | Operating Force | Contact Material | Electrical Life | Travel |
|-------------|-----------------|-----------------|------------------|-----------------|---------|
| FDSD001R | 2.3 mm | 40 gf | Silver | 50,000 cycles | 3.05 mm |
| FDSD002R | 2.3 mm | 40 gf | Silver | 50,000 cycles | 3.05 mm |



FDSE SERIES

Micro Mini Angled Actuated Detect Switches

Features / Benefits

Extremely small package size
 Angled actuation
 Flat or bending terminations
 Long travel type
 RoHS compatible and compliant

Typical Applications

Consumer electronics
 Medical devices
 Safety control devices

| PART NUMBER | Actuator Height | Operating Force | Contact Material | Electrical Life | Travel |
|-------------|-----------------|-----------------|------------------|-----------------|---------|
| FDSE001R | | 3.5 gf | Silver | 50,000 cycles | 3.14 mm |
| FDSE002R | | 3.5 gf | Silver | 50,000 cycles | 3.14 mm |



KSU SERIES

Micro Miniature Surface Mount Detect Switches

Features / Benefits

- New multi contact construction
- Metal actuator
- Low actuating force
- Silver / Gold contacts
- Compatible with pick and place machines

Typical Applications

- Mobile phones and other handheld device
- Portable medical devices
- Audio devices
- Automotive
- Alarm devices
- Payment terminals

| PART NUMBER | Contact Type | Contact Material | Travel | Operating Force | Operating Life |
|-------------------|--------------|------------------|-------------------------|-----------------|----------------|
| KSU211WLFG | SPST, NO | Silver | 0.65 mm - 0.45/+0.25 mm | 0.7 ± 0.5 N | 100,000 cycles |
| KSU213WLFG | SPST, NO | Gold | 0.65 mm - 0.45/+0.25 mm | 0.7 ± 0.5 N | 100,000 cycles |



ATS SERIES

Anti-Tampering Switches

Features / Benefits

- Normally closed function
- Vertical detect
- Reliable long time compression
- IP54

Typical Applications

- Smart meters
- Alarm systems
- Anti-tamper devices

| PART NUMBER | Contact Type | Contact Material | Contact Rating | Operating Force | Operating Life | Termination |
|----------------------|--------------|------------------|----------------|-----------------|----------------|---------------|
| ATS2D1GNC LFS | SPST-NC | Silver | 50 mA @ 32 VDC | 2 N | 5,000 cycles | Surface mount |
| ATS2D3GNC LFS | SPST-NC | Gold | 50 mA @ 32 VDC | 2 N | 5,000 cycles | Surface mount |



KSC D SERIES
Sealed Detect Switches for SMT

Features / Benefits

- Soft actuator
- Permanent actuation possible
- J bend or gull wing terminations
- Tape & reel
- IP67

Typical Applications

- Automotive
- Cellular phones
- Industrial electronics
- Computer infrastructure and IT

| PART NUMBER | Contact Type | Contact Material | Travel | Over Travel | Operating Life |
|----------------------------------|--------------|------------------|------------|-------------|------------------|
| KSC4D2J50SH LFS | SPST, NO | Silver | 0.6 ± 0.25 | 0.65 mm | 2,000,000 cycles |
| KSC4D3J50SH LFG | SPST, NO | Gold | 0.6 ± 0.25 | 0.65 mm | 500,000 cycles |
| KSC4D3J50SH LFG ULC * | SPST, NO | Gold | 0.6 ± 0.25 | 0.65 mm | 500,000 cycles |

* ULC: Ultra low current 0.01 mA @ 1.8 V DC



KSJ D SERIES
Spherical Actuator Detect Switches

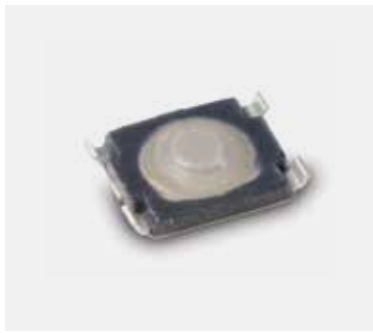
Features / Benefits

- Straight or vertical detect
- Spherical actuator allows actuation +/- 30°
- High travel / silent switch
- Adapted for cam actuation

Typical Applications

- Automotive
- Industrial electronics
- Computer infrastructure and IT

| PART NUMBER | Contact Type | Contact Material | Travel | Over Travel | Operating Life |
|--------------------------|--------------|------------------|------------|-------------|-------------------------|
| KSJ0VD1860SH LFTR | SPST, NO | Silver | 0.5 ± 0.25 | 0.4 mm | 200,000 / 30,000 cycles |
| KSJ0MD3860SH LFTR | SPST, NO | Gold | 0.5 ± 0.25 | 0.4 mm | 200,000 / 30,000 cycles |



KMT0 D SERIES
Momentary Detect Switches

Features / Benefits

Smallest footprint
Smallest thickness with integrated actuator
IP68

Typical Applications

Hearing aids
Medical devices (glucose meter)
IoT
Bluetooth headset
Consumer electronics

| PART NUMBER | Contact Type | Contact Material | Travel | Electrical Life |
|----------------|--------------|------------------|------------|-----------------|
| KMT0D1 NGJ LHS | SPST, NO | Silver | 0.15 ± 0.1 | 300,000 cycles |
| KMT0D3 NGJ LHG | SPST, NO | Gold | 0.15 ± 0.1 | 300,000 cycles |



KMR D SERIES
Momentary Detect Switches

Features / Benefits

Ground pin
Height 2.5 mm
Compact size 4.6 x 2.8

Typical Applications

IoT
Bluetooth headset
Consumer electronics

| PART NUMBER | Contact Type | Contact Material | Travel | Electrical Life |
|-------------|--------------|------------------|---------------|-----------------|
| KMR401G LFS | SPST, NO | Silver | 0.225 ± 0.175 | 100,000 cycles |



K12S D SERIES
Detect Switches

Features / Benefits

Harsh environment applications
Illuminated
SPST / DPST configurations
Designed for low-level switching
NC versions available
Permanent actuation possible

Typical Applications

Motorbike / Automotive
Industrial electronics
Medical equipment

| PART NUMBER | Contact Type | Contact Material | Electrical Height | Over Travel | Electrical Life |
|------------------------|--------------|------------------|-------------------|-------------|-----------------|
| K12SA S 1.5 3N O LFTX | SPST, NO | Gold | 8.2 ± 0.2 | 0.4 | 300,000 cycles |
| K12SA S 1.5 3N C LFTX | SPST, NC | Gold | 8.2 ± 0.2 | 0.4 | 300,000 cycles |
| K12SB D 1.5 3N OO LFTX | DPST, NO | Gold | 8.2 ± 0.2 | 0.4 | 300,000 cycles |
| K12SB D 1.5 3N CC LFTX | DPST, NC | Gold | 8.2 ± 0.2 | 0.4 | 300,000 cycles |



K12 D SERIES
Detect Switches

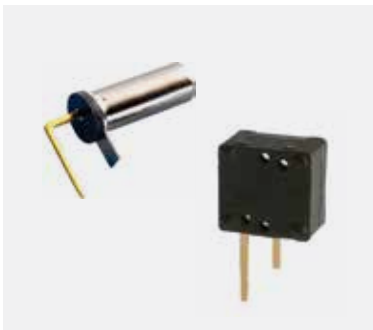
Features / Benefits

Overtravel up to 1.6 mm
Permanent actuation possible
Designed for low-level switching

Typical Applications

Industrial electronics
Medical equipment
Off-road transportation

| PART NUMBER | Contact Type | Contact Material | Electrical Height | Over Travel | Electrical Life |
|---------------------------|--------------|------------------|-------------------|-------------|------------------|
| K12P BK 1.5 1.5 OD | SPST, NO | Gold | 10.45 ± 0.2 | 1.1 | 1,000,000 cycles |
| K12P BK 2 1.5 OD | SPST, NO | Gold | 10.45 ± 0.2 | 1.6 | 1,000,000 cycles |



RB SERIES
Rolling Ball Sensor Switches

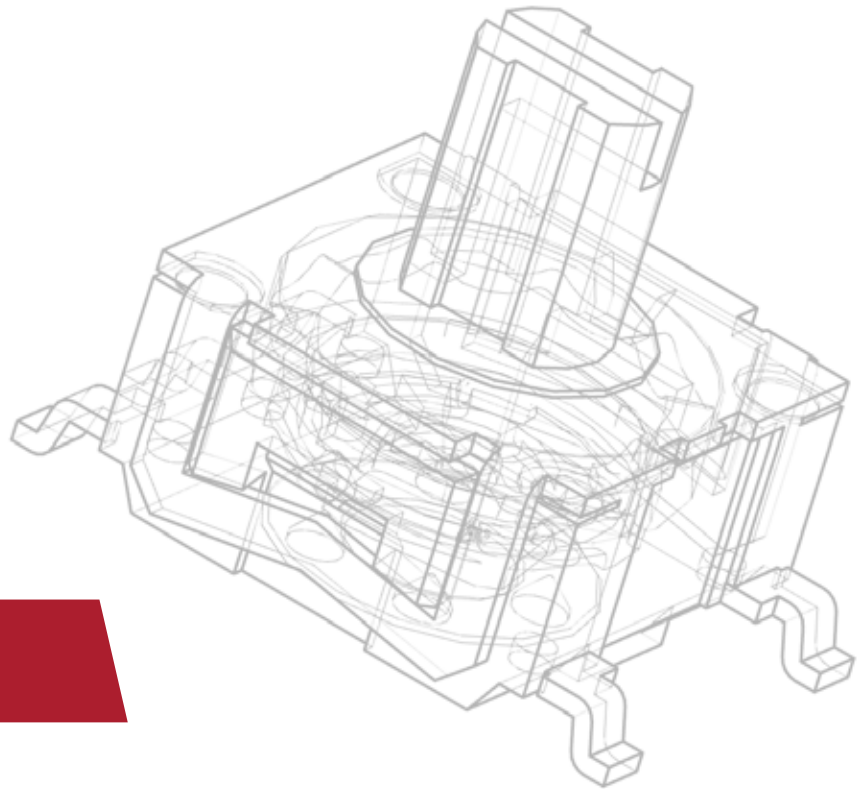
Features / Benefits

Compact shielded design
10 degree angle of detection
Conductive ball is movable inside tube to generate signal and control

Typical Applications

Movement detection
White goods
Consumer electronics

| PART NUMBER | Contact Type | Contact Rating | Sensor Angle | Operating Life | Termination |
|------------------|--------------|----------------------------------|-----------------|----------------|--------------|
| RB-231X2 | SPST | 1 mA 5 V DC resistive load max | 0° to 10° scope | 100,000 cycles | PC thru-hole |
| RB-441-45 | SPDT | 25 mA 24 V DC resistive load max | 45° ± 15° | 100,000 cycles | PC thru-hole |

**PRODUCT SELECTION GUIDE**

DIP Switches

C&K's series of surface mount half-pitch DIP switches, low profile and standard profile DIP switches, rotary and coded DIP switches, coded rotary DIP switches, SIP switches and jumper switches feature a variety of extended actuator and flush actuator styles. C&K DIP switches are available in surface mount, through-hole, right angle and vertical mounting options.



| SERIES | TDP | TDA | SDA | SD | BD |
|-----------------------------------|-----------------------|-------------------------|------------------------------------------|------------------------------------------|------------------------------|
| Switch Type | Half-pitch .050" side | Half-pitch .050" | Low profile | Low profile | Standard profile |
| No. of Positions | 2, 4, 8 | 2-10 (even only) | 2-12 (except 11) | 2-12 (except 11) | 1-12 (except 11) |
| Contact Style | SPST | SPST | SPST | SPST | SPST |
| Profile Off PCB | .161 (4.1) | .090 (2.3) | .189 (4.80) thru-hole .175 (4.45) SMT | .168 (4.27) thru-hole .160 (4.06) SMT | .297 (7.55) |
| Process Sealed | Washable with tape | Washable with tape seal | Washable (tape not required) | Washable with tape | Washable (tape not required) |
| Extended Actuator | • | | • | • | • |
| Flush Actuator | • | • | • | • | |
| Thru-hole | | | • | • | • |
| Vertical | | • | • | • | • |
| Right Angle | • | | | | • |
| Surface Mount | • | • | • | • | |
| Tape & Reel (SMT only) | | • | • | • | |
| Maximum Current | 100 mA | 100 mA | 100 mA | 100 mA | 100 mA |



| SERIES | BPA | TDD | SPA | RTE |
|-----------------------------------|-----------------------------------------|--------------------|-----------------------------------|------------------------------------------|
| Switch Type | Side actuated | Jumper switch | Single in-line package | Rotary & coded |
| No. of Positions | 1-10 & 12 | 2 | 2, 4, 6, 8, 10 | 4, 10, 16 |
| Contact Style | SPST | SPDT | SPST / SP3T / SP4T / coded | Coded |
| Profile Off PCB | .287 (7.3) thru-hole .274 (6.96) SMT | .090 (2.3) | .244 (6.2) vertical .169 (4.3) | .169 (4.25) thru-hole .168 (4.27) SMT |
| Process Sealed | Washable (tape not required) | Washable with tape | Washable (tape not required) | |
| Extended Actuator | • | | • | • |
| Flush Actuator | | • | • | • |
| Thru-hole | • | | • | • |
| Vertical | | • | • | • |
| Right Angle | • | | • | • |
| Surface Mount | • | • | • | • |
| Tape & Reel (SMT only) | • | • | • | • |
| Maximum Current | 100 mA | 100 mA | 0.4 VA | 100 mA |
| Retention Feature | | | • | • |



SERIES

Switch Type

No. of Positions

Contact Style

Profile Off PCB

Process Sealed

Extended Actuator

Flush Actuator

Thru-hole

Vertical

Right Angle

Surface Mount

Tape & Reel (SMT only)

Maximum Current

Retention Feature

CD

8 mm coded rotary

8, 10, 16

Coded

.168 (4.27) thru-hole
.340 (8.6) Rt. angle

Washable (tape not required)

•

•

•

•

•

•

•

0.4 VA

• C option

CRD

10 mm coded rotary

10 & 16

Coded

.256 (6.5) vertical
.414 (10.5) Rt. angle

Washable (tape not required)

•

•

•

•

•

•

•

0.4 VA

RTF

DIP

4, 10, 16

Coded

Varies

•

•

•

•

•

•

•

100 mA

CRE

10 mm coded rotary

4, 6, 8, 10, 16

Coded

0.331" (8.4 mm) Flush /
0.370" (9.4 mm) Protrusion /
0.618" (15.7 mm) Extended

Washable (tape not required)

•

•

•

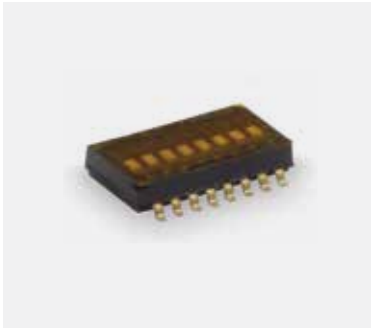
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150 mA



TDA SERIES
Ultra-miniature Surface Mount Half-pitch DIP Switches

Features / Benefits

Bifurcated contact for increased electrical reliability
 Process sealed for surface mount soldering and washable processing

Contact Rating:

24 V DC, 25 mA (switching)
 50 V DC, 100 mA (steady state)

Typical Applications

Hand-held electronic devices
 Portable computer and electronic devices
 Instrumentation and controls

| PART NUMBER | Number of Positions | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|-------------|---------------------|----------------|------------------------------|------------------|-----------------|
| TDA04H0SB1R | SPST, 4 pos. | Flush actuator | SMT, gull wing | Gold | 1,000 cycles |
| TDA08H0SB1R | SPST, 8 pos. | Flush actuator | SMT, gull wing | Gold | 1,000 cycles |
| TDA10H0SB1R | SPST, 10 pos. | Flush actuator | SMT, gull wing | Gold | 1,000 cycles |



SDA SERIES
Low Profile DIP Switches

Features / Benefits

Low profile design saves space
 Thru-hole and surface mount models
 High pressure contact does not require tape seal for washing

Contact Rating:

25 mA @ 24 V DC or 100 mA @ 5 V DC

Typical Applications

Address switch for industrial controls
 Logic switching for computers and peripherals
 Function controlling for numerous applications

| PART NUMBER | Number of Positions | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|-------------|---------------------|--------------------------------|------------------------------|------------------|-----------------|
| SDA08H0B | SPST, 8 pos. | Flush actuator – with top tape | PC thru-hole | Gold plating | 1,000 cycles |
| SDA03H0SBR | SPST, 3 pos. | Flush actuator – with top tape | SMT, gull wing | Gold plating | 1,000 cycles |
| SDA04H0SBR | SPST, 4 pos. | Flush actuator – with top tape | SMT, gull wing | Gold plating | 1,000 cycles |



BPA SERIES
Side Actuated DIP Switches

Features / Benefits

Side actuated contacts
Available in thru-hole or SMT models
High pressure contact system does not require tape seal for washing

Contact Rating:

100 mA max. @ 5 V DC or 25 mA max. @ 24 V DC

Typical Applications

Address switch for industrial controls
Logic switching for computers and peripherals
Function controlling for numerous applications

| PART NUMBER | Number of Positions | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|-------------|---------------------|-----------------------|------------------------------|------------------------|-----------------|
| BPA04B | SPST, 4 pos. | Side actuator / Piano | PC thru-hole | Gold over nickel plate | 1,000 cycles |
| BPA01B | SPST, 1 pos. | Side actuator / Piano | PC thru-hole | Gold over nickel plate | 1,000 cycles |
| BPA05SB | SPST, 5 pos. | Side actuator / Piano | SMT, gull wing | Gold over nickel plate | 1,000 cycles |



RTE SERIES
Low Profile Rotary DIP Switches

Features / Benefits

Miniature size with robust stainless steel cover
Rotary SPDT, SP3T, SP4T functions
Rotary binary-decimal and hexadecimal coding

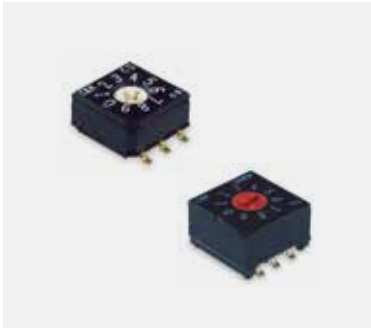
Contact Rating:

Gold: 100 mA max. 10 μ A min. 30 V DC max. 20 mVDC min.
Silver: 100 mA max. 1 mA min. 50 V DC max. 2 VDC min.

Typical Applications

Timers, automation components
Computer and peripherals
Alarms, smoke detectors, access control
Instrumentation
Address switching applications

| PART NUMBER | Switch Function | ESD Protection / Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|-------------|--------------------------|--------------------------------------|------------------------------|------------------|-----------------|
| RTE1002G14 | 10 position, BCD | Without ESD, shaft for button | SMT, gull wing | Gold | 20,000 cycles |
| RTE1600V44 | 16 position, hexadecimal | Without ESD, flush, screwdriver slot | Right angle | Gold | 20,000 cycles |
| RTE0400N04 | 4 position, single pole | Without ESD, flush, screwdriver slot | PC thru-hole | Gold | 20,000 cycles |



CD / CRD SERIES
8 mm / 10 mm DIP Coded Rotary Switches

Features / Benefits

Process sealed – withstands soldering and cleaning
 Thru-hole and surface mount models
 Crisp, positive detent ensures actuation

Contact Rating:

0.4 VA max. @ 20 V AC or V DC max.

Typical Applications

Address switching applications
 Data storage devices
 Computer and peripherals
 Instrumentation

| PART NUMBER | Switch Function | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|-------------|-------------------------------------|-------------------------|------------------------------|------------------|-----------------|
| CD10RM0SBR | 10 position, BCD | Flush, screwdriver slot | SMT, gull wing | Gold | 20,000 cycles |
| CD16RM0SBR | 16 position, hexadecimal | Flush, screwdriver slot | SMT, gull wing | Gold | 20,000 cycles |
| CRD10RM0CB | 10 position, BCD | Flush, screwdriver slot | PC thru-hole | Gold | 20,000 cycles |
| CRD16CM0SBR | 16 position, hexadecimal complement | Flush, screwdriver slot | SMT, gull wing | Gold | 20,000 cycles |



RTF SERIES
7.2 x 7.2 mm Low Profile Rotary DIP Switches

Features / Benefits

Most compact rotary DIP switch
 Thru-hole, crimped, J-bend, angled & surface mount models
 New designs with different actuators
 IP67

Typical Applications

Instrumentation
 Security devices
 Computer & peripherals
 Industrial & control automation

| PART NUMBER | Switch Function | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|-------------|--------------------------|-------------------------|------------------------------|------------------|-----------------|
| RTF16R0S | 16 position, hexadecimal | Flush, screwdriver slot | SMT | Gold plated | 10,000 cycles |
| RTF16R0C | 16 position, hexadecimal | Flush, screwdriver slot | Thru-hole | Gold plated | 10,000 cycles |



CRE SERIES
10 mm DIP Coded Rotary DIP Switches

Features / Benefits

New designs with different actuators
 Process sealed - withstands soldering & cleaning
 Thru-hole & surface mount models
 IP65

Typical Applications

Address switching applications
 Data storage devices
 Instrumentation

| PART NUMBER | Switch Function | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|--------------------|--------------------------|----------------------------|-------------------------------------|-------------------------|------------------------|
| CRE16RRDM0S | 16 position, hexadecimal | Flush, screwdriver slot | SMT | Gold plated | 10,000 cycles |
| CRE16RRDL0C | 16 position, hexadecimal | Extended, screwdriver slot | Thru-hole | Gold plated | 10,000 cycles |

**PRODUCT SELECTION GUIDE**

Keyswitches

C&K keyswitches are designed to support high-performance, environmentally demanding applications. They are available in a large number of combined versions:

- SMT or THT solder process compatible
- IP40 or IP67 sealing level
- LED illumination option
- SPST, SPDT, DPST or DPDT electrical functions
- Normally Open or Normally Closed contacts
- Double step actuation
- Momentary or latching “push-on/push-off” versions
- Tactile or non-tactile feedback



SERIES

**Size (mm)
L x W x H**

Poles / Throws

Maximum Load

Operating Force

Travel (standard)

Life Cycle

IP Rating

Illumination

Termination

K12S

12 x 11.6 x 9.1

SPST / DPST /
2 x SPST momentary

30 V / 100 mA

3 N / 3.5 N / 5 N / 6 N / 9 N /
4/8 N / 6/12 N

1.5 mm

1,000,000

IP40 / IP67

•

SMT

K12

12 x 12 x 11

SPST /
2 x SPST momentary

30 V / 100 mA

1.5 N / 2.5 N / 3.5 N / 5 N /
3.5/7 N / 6/12 N

1 mm / 1.5 mm / 2 mm

1,000,000

IP40

•

Thru-hole

K12C

12 x 12 x 11

SPST

30 V / 100 mA

2.5 N / 5 N / 9 N

1 mm / 1.3 mm

100,000

IP67

•

Thru-hole

D6

12 x 11.4 x 14.5

SPST momentary

32 V / 100 mA*

1.3 N / 2.75 N

1 mm / 1.10 mm

250,000

•

Thru-hole



SERIES

**Size (mm)
L x W x H**

Poles / Throws

Maximum Load

Operating Force

Travel (standard)

Life Cycle

IP Rating

Illumination

Termination

KS

12.4 x 12.4 x 9.9

SPST / SPDT

50 V / 25 mA

1.5 N

0.75 mm

100,000

IP40 / IP67

•

Thru-hole

DIGITAST

17.1 x 12.3 x 14.3

SPDT momentary or push-on /
push off

24 V / 10 mA

1.5 N

3 mm

5,000,000

•

Thru-hole

ED/EDM

12.7 x 11.3 x 1.2

SPST momentary

100 V / 100 mA

2.4 N to 6.5 N

0.3 mm

1,000,000

IP67

•

Thru-hole / SMT



K12S SERIES
High Performance SMT Key Switches

Features / Benefits

IP67
Compatible with SMT lead free soldering process / tape & reel packaging
Illuminated
Excellent tactile feel
High reliability / long life
DPST, double step and detect versions available
Normally closed version available

Typical Applications

Automotive, motorbikes
Off-road transportation
Industrial electronics
Medical
Network

| PART NUMBER | Sub-Series | Type | LED Color | Travel | Operating Force | Contact Arrangement |
|----------------------------------|------------------|------|-----------|--------|-----------------|---------------------|
| K12SB S 1.5 9N O LFTX | IP67 with peg | SPST | None | 1.5 mm | 9 N | NO |
| K12SB S 1.5 3.5N C LFTX | IP67 with peg | SPST | None | 1.5 mm | 3.5 N | NC |
| K12SC L 1.5 WHO 9N O LFTX | IP40 without peg | SPST | White | 1.5 mm | 9 N | NO |
| K12SC D 1.5 4/8N OO LFTX | IP40 without peg | DPST | None | 1.5 mm | 4 / 8 N | 2 NO |
| K12SB D 1.5 12N OO LFTX | IP67 with peg | DPST | None | 1.5 mm | 12 N | 2 NO |



K12 SERIES
High Performance Key Switches

Features / Benefits

Excellent tactile feel
Wide choice of LED colors, travel and actuator forces
Sealed version available
Designed for low-level switching
Double stroke versions available

Typical Applications

Automotive
Off-road transportation
Industrial electronics
Computers & network equipment

| PART NUMBER | Function | Button Type / Color | Travel | Operating Force |
|------------------------------|-------------------|---------------------|--------|-----------------|
| K12GO BK 1.5 6/12N | Two-step switch | Black cap | 1.5 mm | 6 / 12 N |
| K12P BK 1 5N | With snap-in pegs | Black cap | 1 mm | 5 N |
| K12A BK 1 5N | No snap-in pegs | Black cap | 1 mm | 5 N |
| K12PL WH 1.5 5N LV302 | With central LED | White LED | 1.5 mm | 5 N |
| K12PL GN 1.5 5N LV306 | With central LED | Green LED | 1.5 mm | 5 N |



K12C SERIES
High Performance Key Switches

Features / Benefits

- Excellent tactile effect
- Harsh environment applications
- IP67
- Designed for low-level switching

Typical Applications

- Off-road transportation
- Industrial electronics
- Medical equipment
- Automotive

PART NUMBER

K12C 1 5N

K12C 1.3 9N 0.5

Function

Sealed contact with rubber cap (IP67)

Sealed contact with rubber cap (IP67)

Button Type / Color

Black rubber cap

Black rubber cap

Travel

1 mm

1.3 mm

Operating Force

5 N

9 N



D6 SERIES
SPST Momentary Key Switches

Features / Benefits

- Positive tactile feedback
- High temperature
- Wide variety of colors and styles

Typical Applications

- Video
- Electronic games
- Appliances

PART NUMBER

D6R90 F1 LFS

D6C90 F1 LFS

D6R10 F1 LFS

D6L90 F1 LFS

D6RLRD F1 LFS

D6RLWH F1 LFS

Function

SPST, NO

SPST, NO

SPST, NO

SPST, NO

SPST, NO

SPST, NO

Button Type / Color

Round / Black

Square / Black

Round / Gray

Plunger / Black

Round / Transparent

Round / Transparent

Travel

0.6 mm

0.6 mm

0.6 mm

0.6 mm

0.6 mm

0.6 mm

Operating Force

1.3 N

1.3 N

1.3 N

1.3 N

1.3 N

1.3 N

Illumination

Red

White



KS SERIES
Single Pole Key Switches

Features / Benefits

Positive tactile feel
Variety of cap colors
SPST and SPDT configurations
RoHS compliant

Typical Applications

Telecommunications
Industrial
Instrumentation

| PART NUMBER | Function | Button Type / Color | Contact Material | Seal |
|------------------------|---------------|---------------------|------------------|----------|
| KS11 R2 2 C Q D | SPST Off-Mom. | Black cap | Silver | No epoxy |
| KS12 R2 3 C B E | SPDT On-Mom. | Red cap | Gold | Epoxy |
| KS12 R2 1 C B D | SPDT On-Mom. | White cap | Gold | No epoxy |



DIGITAST SERIES
SPDT Key Switches

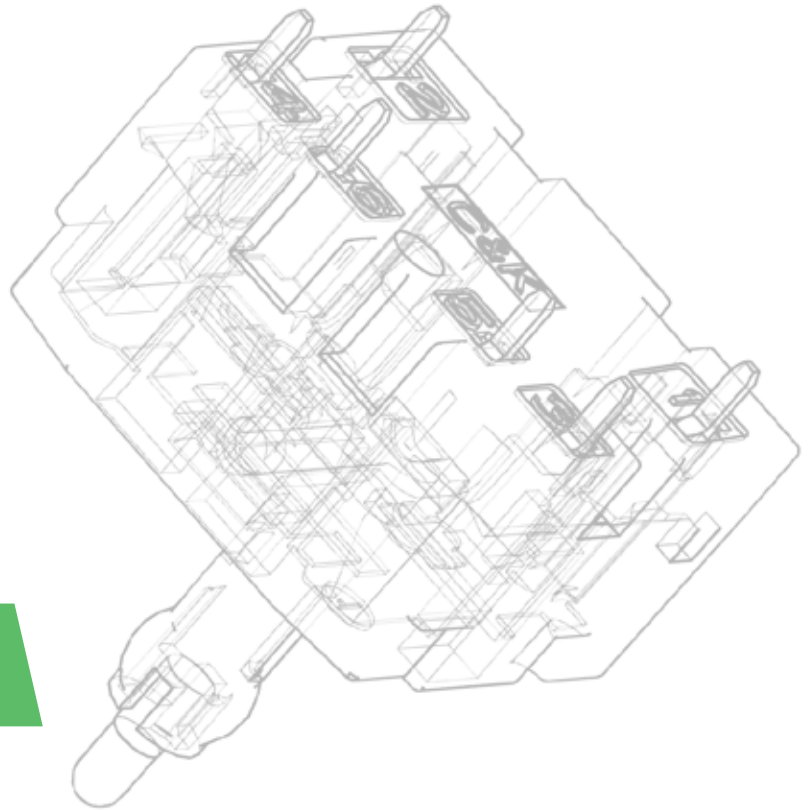
Features / Benefits

Designed for low level switching
High reliability / long life
Several button options

Typical Applications

Medical
Instrumentation
Industrial electronics

| PART NUMBER | Function | Button | Button Color | Contact Material | Termination |
|---------------------|-----------------|---------------|--------------|------------------|--------------|
| SER BK AU OA | SPDT, momentary | Narrow button | Black | Gold | PC thru-hole |
| SET BK AU OA | SPDT, momentary | Wide button | Black | Gold | PC thru-hole |
| SERU AU OA | SPDT, momentary | | | Gold | PC thru-hole |
| SRK GY | | Narrow button | Gray | | |
| STK WH | | Wide button | White | | |



PRODUCT SELECTION GUIDE

Navigation Switches

C&K's navigation switches are miniature, compact and multi-directional products. The CS series features a 4-way adjustable direction switch designed for mirror control. The THB series dual action 360° joystick is ideal for gaming, drone, and other controllers.



SERIES

Number of Directions

CS

4

SAM

2 or 4

THB

Dual axis with center select switch

**Size on PCB (mm)
L x W x H**

40 x 40 x 38

20.7 x 18.0
26.2 x 26.2

21.0 x 17.0

Total Height (mm)

58

27.85 or 31.85 or 27.6

19.45

**Actuation
Force (N)**

4.9 N

5.3 / 6 N

714 ± 204 gf

Contact Type

Silver

Silver

SPST N.O.

Max. Voltage (V)

10

14

5 V DC, 50 V AC

**Max. Switching
Power (VA)**

.02

15

0.05 A @ 12 VDC

Life Cycles per Direction

10,000

30,000

2,000,000

Sealing

Not sealed

Not sealed

Not sealed



CS SERIES
4-Way Adjustable Direction Switches

Features / Benefits

Designed for mirror control
Wire harness and connector easy to customize
Easy installation
4-way adjustable directions

Typical Applications

Automotive
Industrial

| PART NUMBER | Circuit | Mounting Type | Actuation Force | Current Rating | Life Cycle |
|-------------|---------|-----------------------------|-------------------------------------------|----------------|---------------|
| CS41001E | SP4T | Panel mount, front, snap-in | 200 ±100 gf / 400 ± 200 gf / 500 ± 200 gf | 0.2 A @ 12 VDC | 10,000 cycles |



SAM SERIES
Multiway Switches

Features / Benefits

Multi-directional switches 2-way & 4-way
Actuation force 5.3 N or 6 N
Footprint 20.7 x 18.0 mm (2-way) & 26.2 x 26.2 mm (4-way)

Typical Applications

Automotive
Industrial

| PART NUMBER | Circuit | Actuation Force | Life Cycle* | Travel (mm) |
|----------------|---------|-----------------|---------------|-------------|
| SAM-H2-LR10SPA | SPDT | 6.0 ± 2.0 | 30,000 cycles | 1.00 ± 0.4 |
| SAM-H2-LR14SPA | SPDT | 5.3 ± 2.0 | 30,000 cycles | 1.25 ± 0.4 |
| SAM-H2-MR14SPA | SPDT | 5.3 ± 2.0 | 30,000 cycles | 1.25 ± 0.4 |
| SAM-H4-MR11SPA | SPDT | 6.0 ± 2.0 | 30,000 cycles | 1.00 ± 0.4 |

* Life cycle per direction



THB SERIES
Thumbstick

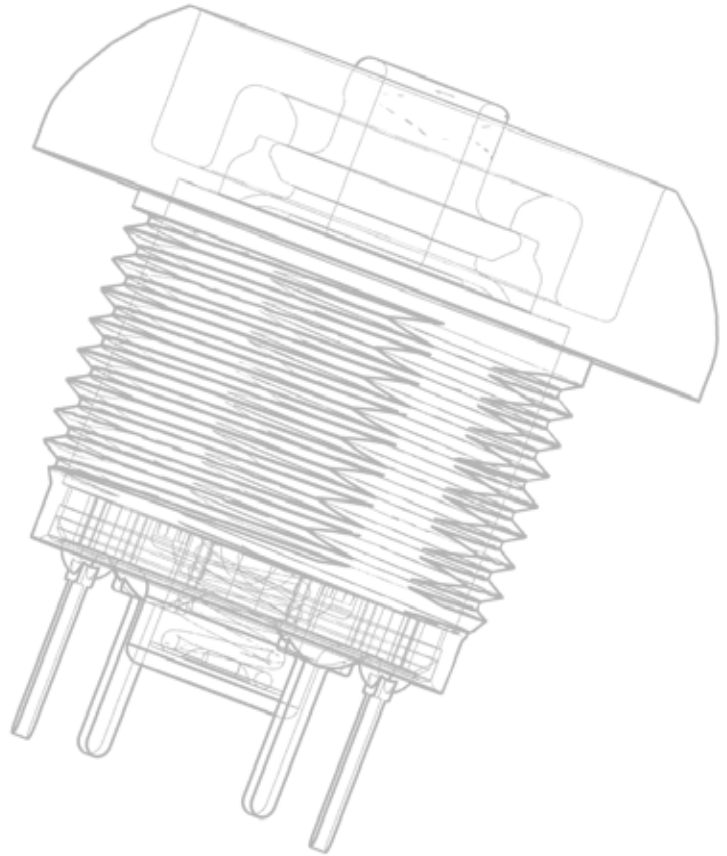
Features / Benefits

Higher actuation force
Reduced "Dead Zone" slack & wide angular sweep
Small form factor

Typical Applications

Industrial
High-end consumer

| PART NUMBER | Circuit | Mounting Type | Actuation Force | Current Rating | Life Cycle |
|-------------|--------------------------------|---------------|-----------------|-----------------|-----------------------------|
| THB001P | Dual Potentiometer + SPST N.O. | Thru-hole | 714 ± 204 gf | 0.05 A @ 12 VDC | 2,000,000 cycles for toggle |



PRODUCT SELECTION GUIDE

Pushbutton Switches

C&K's extensive range of miniature, sub-miniature and ultra-miniature pushbuttons for printed circuit board with through-hole or surface mounted and panel application with either threaded or snap-in option. Products are offering with momentary and latch function for SPST, SPDT, DPST or DPDT circuitry in sealed and low-profile configurations. C&K pushbuttons are available in the widest selection of actuator styles, shapes and colours, with or without illumination.



| SERIES | ELUM | EP | TP | E020 | 8020 | E010 | 8060 | 8500 |
|-----------------------|-----------------|--------------------|--------------------|-------------|---------------------------|-----------|---------------|---------------|
| Switch Type | PCB Illuminated | Sub-miniature | Sub-miniature | Miniature | Miniature | Miniature | Sub-miniature | Sub-miniature |
| Poles / Throws | SPDT | SPST / SPDT / DPST | SPST / SPDT / DPST | SPDT / DPST | SPDT / DPDT / 3PDT / 4PDT | SPDT | SPDT / DPDT | SPST |
| Max. Current | 3.5 VA | 1 Amp | 1 Amp | 1 Amp | 1 Amp | 4 Amps | 6 Amps | 3 Amps |
| Process Sealed | | • | | • | | • | | |
| Illuminated | • | | | | • | | • | • |
| Mounting Options | | | | | | | | |
| Thru-hole | • | • | • | • | • | • | • | • |
| Surface Mount | • | • | | | | | | |
| Panel Mount | | | • | | • | • | • | • |



| SERIES | KM | 8600 | 8700 | GP | PN | PHB | F | NE-18 |
|-----------------------|---------------|-------------------------|---------------|-------------------------|--------------------|-------------|-----------------------------------|----------------------|
| Switch Type | Sub-miniature | Micro / Ultra-miniature | Sub-miniature | Micro / Ultra-miniature | Sub-miniature | Miniature | Miniature | Miniature |
| Poles / Throws | SPST / SPDT | SPST | SPST | SPST / SPDT | SPDT / DPDT / 4PDT | DPDT / 4PDT | DPDT / 4PDT / 6PDT / 8PDT / 10PDT | DPST / DPDT / Varied |
| Max. Current | 1 Amp | 500 mA | 1 Amp | 0.4 VA | 200 mA | 100 mA | 500 mA | 6 A |
| Process Sealed | | | | • | | | | |
| Mounting Options | | | | | | | | |
| Thru-hole | • | • | • | • | • | • | • | • |
| Surface Mount | | | | • | | | | |
| Panel Mount | • | • | • | | | | • | • |



| SERIES | FP | PVA | PS | PBA | AP | APB | NP | PNP |
|-----------------------|-------------------------|---------------|----------------------------|-----------------|---------------------|---------------------|---------------------|------------------------------|
| Switch Type | Micro / Ultra-miniature | Sub-miniature | Miniature | PCB Illuminated | Sealed / Industrial | Sealed / Industrial | Sealed / Industrial | Sealed / Industrial |
| Poles / Throws | SPST | DPST / DPDT | SPDT / DPDT | DPST | SPST | SPST | SPDT | SPST N.O. / SPST N.C. / SPDT |
| Max. Current | 0.4 VA | 100 mA | 0.1 A / 1 A 0.3 A / 2 A | 250 mA | 400 mA | 400 mA | 5 Amp | 10 mA / 3 A / 5 A |
| Process Sealed | • | IP40 | | | IP67 | IP67 | IP68 | IP68 |
| Mounting Options | | | | | | | | |
| Thru-hole | • | • | • | • | • | • | • | • |
| Surface Mount | | | • | | | | | |
| Panel Mount | | | | • | • | • | • | • |



| SERIES | ATP | PLP16 | KLS |
|-----------------------|--------------------|-------------------------------|----------------------------------|
| Switch Type | Panel Illuminated | Panel Illuminated | PCB Illuminated |
| Poles / Throws | SPST / SPDT / DPDT | Pilot light, SPST, DPDT | SPST, DPDT |
| Max. Current | 3 A / 2 A | 3 A / 250 Vac 1 A / 30 Vdc | 0.5 A / 25 Vdc 0.1 A / 28 Vdc |
| Process Sealed | IP67 | | • |
| Mounting Options | | | |
| Thru-hole | • | | • |
| Surface Mount | | | |
| Panel Mount | | • | |



EP SERIES
Sealed Tiny Pushbutton Switches

Features / Benefits

Sealed against solder & cleaning processes
 Snap-fitting actuator accepts standard caps
 Contact rating 0.4 VA max @ 20 V AC or DC max.

Typical Applications

Telecommunications and networking equipment
 Computers and peripherals
 Instrumentation and controls

| PART NUMBER | Function | Mounting Style / Termination | Plunger | Contact Material | Operating Life |
|-------------|---------------|------------------------------------|------------|------------------|----------------|
| EP11SD1ABE | SPST Off-Mom. | Right angle, PC thru-hole | .215" high | Gold | 60,000 cycles |
| EP11SD1AVBE | SPST Off-Mom. | Vertical right angle, PC thru-hole | .215" high | Gold | 60,000 cycles |
| EP11SD1CBE | SPST Off-Mom. | PC thru-hole | .215" high | Gold | 60,000 cycles |
| EP11SD1SAPE | SPST Off-Mom. | Right angle, surface mount | .215" high | Gold, matte-tin | 60,000 cycles |
| EP12SD1ABE | SPDT On-Mom. | Right angle, PC thru-hole | .215" high | Gold | 30,000 cycles |



TP SERIES
Sealed Tiny Pushbutton Switches

Features / Benefits

Subminiature size—capable of switching 1 AMP
 Epoxy terminal seal compatible with bottom wash cleaning

Contact Rating:

Gold: 0.4 VA max. @ 20 V AC or DC max.
 Silver: 1 AMP @ 120 V AC or 28 V DC

Typical Applications

Telecommunications and networking equipment
 Computers and peripherals
 Instrumentation and controls

| PART NUMBER | Function | Actuator or Bushing | Mounting Style / Termination | Contact Material | Operating Life |
|-------------|---------------|--------------------------------------------------------------|------------------------------|------------------|----------------|
| TP11SH8ABE | SPST Off-Mom. | .155" high plunger, unthreaded; .220" high bushing, round | Right angle, PC thru-hole | Gold | 60,000 cycles |
| TP11SH9ABE | SPST Off-Mom. | .155" high plunger, unthreaded; .220" high bushing, flat | Right angle, PC thru-hole | Gold | 60,000 cycles |
| TP11SH9CBE | SPST Off-Mom. | .155" high plunger, unthreaded; .220" high bushing, flat | PC thru-hole | Gold | 60,000 cycles |
| TP11SHZQE | SPST Off-Mom. | .155" high plunger, threaded; .220" high bushing, flat | Solder lug | Silver | 60,000 cycles |
| TP12SH9ABE | SPST Off-Mom. | .155" high plunger, unthreaded; .220" high bushing, flat | Right angle, PC thru-hole | Gold | 30,000 cycles |



8020 SERIES Snap-acting Momentary Pushbutton Switches

Features / Benefits

Positive tactile feel
Epoxy terminal seal compatible with bottom wash cleaning
Operating life 60,000 cycles

Typical Applications

Telecommunications and networking equipment
Computers peripherals
Instrumentation and controls

Contact Rating

Gold: 0.4 VA max. @ 20 V AC or DC max.
Gold over silver: 1 AMP @ 120 V AC or 28 V DC

| PART NUMBER | Function | Actuator or Bushing | Bushing | Mounting Style / Termination | Contact Material | Cap / Frame Color |
|--------------|--------------|---------------------|------------------|------------------------------|------------------|-------------------|
| 8121SHZGE | SPDT On-Mom. | Plunger | .250" high, flat | Solder lug | Gold over silver | None |
| 8125SHZBE | SPDT On-Mom. | Plunger | .250" high, flat | Solder lug | Gold | None |
| 8221SHZGE | DPDT On-Mom. | Plunger | .250" high, flat | Solder lug | Gold over silver | None |
| 8121J81ZGE22 | SPDT On-Mom. | Snap-in with frame | None | Solder lug | Gold over silver | Black / Black |
| 8125SHCBE | SPDT On-Mom. | Plunger | .250" high, flat | PC thru-hole | Gold | None |



FP SERIES Sealed Ultra Miniature Pushbutton Switches

Features / Benefits

Sealed against soldering and cleaning processes

Contact Rating:

0.4 VA (28 V DC or V AC) max.
Operating life 50,000 cycles

Typical Applications

Networking equipment
Modems
Reset functions
Instrumentation

| PART NUMBER | Function | Actuator Length | Mounting Style | Contact Material | Cap |
|----------------|---------------|-----------------|----------------|------------------------|-------------------------|
| FP11SPC1B1TP00 | SPST Off-Mom. | 3.3 mm | Vertical | Gold over nickel plate | No cap |
| FP11SPA1B1TP02 | SPST Off-Mom. | 3.3 mm | Right angle | Gold over nickel plate | Black cap (bulk bagged) |
| FP11SPC1B1TP02 | SPST Off-Mom. | 3.3 mm | Vertical | Gold over nickel plate | Black cap (bulk bagged) |
| FP11SPA1B1TP03 | SPST Off-Mom. | 3.3 mm | Right angle | Gold over nickel plate | Red cap (bulk bagged) |
| FP11SPC1B1TP03 | SPST Off-Mom. | 3.3 mm | Vertical | Gold over nickel plate | Red cap (bulk bagged) |



PVA SERIES
Short Stroke Key Switches

Features / Benefits

Compact design
Short stroke to latch
Wide variety of actuator heights and styles
Adapted for medium power applications

Typical Applications

Automotive (air conditioning, lighting)
Industrial
Control panel

| PART NUMBER | Function | Mechanical Function | Total Height | Travel | Operating Force |
|-------------------------|----------|---------------------|--------------|--------|-----------------|
| PVA1EEH1 3.5N V2 | DPST | Push-push | 17.5 mm | 2.4 mm | 3.5 N |
| PVA10AH1 1.2N V2 | DPST | Momentary | 17.5 mm | 2.4 mm | 1.2 N |
| PVA2EEH3 1.2N V2 | DPDT | Push-push | 20.5 mm | 2.4 mm | 1.2 N |
| PVA20AH5 1.7N V2 | DPDT | Momentary | 13 mm | 2.4 mm | 1.7 N |



PS SERIES
Push Switches

Features / Benefits

Compact miniature size
Momentary or latching
Shorting or non-shorting

Typical Applications

Automotive interior lighting
Computer peripherals
Appliances
Consumer electronics

| PART NUMBER | Function | Footprint | Height | Operating Force | Operating Life | Total Travel |
|------------------------|-----------------|--------------|---------|-----------------|----------------|--------------|
| PS-12G01 | SPDT, latching | 16.8 x 14 mm | 26.4 mm | 400 gf | 20,000 cycles | 5 mm |
| PS-12G03 | SPDT, latching | 16.8 x 14 mm | 27.2 mm | 650 gf | 20,000 cycles | 4.5 mm |
| PS-2214-L NS PA | DPDT, latching | 5.8 x 5.8 mm | 7.5 mm | 150 gf | 10,000 cycles | 2.3 mm |
| PS-2214-F NS PA | DPDT, momentary | 5.8 x 5.8 mm | 7.5 mm | 150 gf | 10,000 cycles | 2.3 mm |



AP SERIES
Sealed Industrial Pushbutton Switches

Features / Benefits

IP67 sealed
 Operating life 500,000 to 1,000,000 cycles
 Illumination / Non-illumination, Multiple colored caps
 SPST, normally open

Contact Rating:

200 mA @ 24 V DC resistive (500,000 cycles)
 100 mA @ 50 V DC resistive (500,000 cycles)
 400 mA @ 32 V AC resistive (500,000 cycles)
 125 mA @ 125 V AC resistive (1,000,000 cycles)

Typical Applications

Harsh environments
 Off-road
 Industrial
 Medical
 Transportation
 Joystick control modules
 Gaming
 Military

| PART NUMBER | Operating Force | Total Travel | Actuator Style | Actuator Color | Bushing Style | Termination | Contact Material |
|-------------|-----------------|--------------|----------------|----------------|------------------|-----------------------|------------------|
| AP2D200TWBE | 2 N | 2.1 ± 0.2 mm | Dome / Convex | Black | Threaded plastic | 12" wire leads 22 AWG | Gold |
| AP4D200TZBE | 4 N | 2.1 ± 0.2 mm | Dome / Convex | Black | Threaded plastic | Solder lug | Gold |
| AP2D300SZBE | 2 N | 2.1 ± 0.2 mm | Dome / Convex | Red | Snap-in plastic | Solder lug | Gold |
| AP4E300TZBE | 4 N | 2.1 ± 0.2 mm | Extended Dome | Red | Threaded plastic | Solder lug | Gold |



APB SERIES
Backlit Pushbutton Switches

Features / Benefits

IP67 sealed
 1,000,000 life cycle
 Illumination
 Threaded or snap-in mounting
 RoHS compliant

Typical Applications

Harsh environments
 Off-road
 Transportation
 Joystick control modules
 Gaming
 Military

| PART NUMBER | Operating Force | Total Travel | Cap Symbol * | Actuator Color | Bushing Style | Termination | Contact Material |
|-----------------|-----------------|--------------|--------------|----------------|------------------|-------------|------------------|
| APB4E01TZBE-001 | 4 N | 2.1 ± 0.2 mm | Plus | Black | Threaded plastic | Solder lug | Gold |
| APB4E01TZBE-002 | 4 N | 2.1 ± 0.2 mm | Lock | Black | Threaded plastic | Solder lug | Gold |

* See C&K full line catalog or website for complete options for symbols



NP SERIES
Sealed Industrial Pushbutton Switches

Features / Benefits

IP68 sealed
Multiple housing styles

Contact Rating:
10 mA / 5 VDC resistive (1,000,000 cycles)
1 A / 32 VDC resistive (100,000 cycles)
5 A / 32 VDC resistive (25,000 cycles)
3 A / 32 VDC inductive (25,000 cycles)

Typical Applications

Harsh environments
Off-road
Industrial
Transportation
Military

| PART NUMBER | Operating Force | Total Travel | Actuator Style | Actuator Color | Housing Style | Termination | Contact Material |
|-------------|-----------------|---------------|----------------|----------------|--------------------|-----------------------------|------------------|
| NP8S2D203QE | 8 N | 1.6 ± 0.15 mm | Standard | Black | Dome bezel | Solder lug | Silver |
| NP8S2R203QE | 8 N | 1.6 ± 0.15 mm | Standard | Black | Rear mount | Solder lug | Silver |
| NP8S2T203QE | 8 N | 1.6 ± 0.15 mm | Standard | Black | Std threaded mount | Solder lug | Silver |
| NP8S3D203QE | 8 N | 1.6 ± 0.15 mm | Standard | Red | Dome bezel | Solder lug | Silver |
| NP8S2D2W4QE | 8 N | 1.6 ± 0.15 mm | Standard | Black | Dome bezel | 4 x 12" 22 AWG UL 1569 wire | Silver |



PNP SERIES
Sealed Industrial Pushbutton Switches

Features / Benefits

IP68 sealed to endure harsh environments
Multiple housing styles
Longer solder leads for ease of wire installation
Up to 5 A resistive load

Contact Rating:
Silver (Q): 5 A / 32 VDC resistive (25,000 cycles)
3 A / 32 VDC resistive (25,000 cycles)
Gold (G): 10 mA / 5 VDC resistive (1,000,000 cycles)

Typical Applications

Control grips
Off-road panels
Heavy equipment
Industrial instruments
Lifts
Conveyor controls

| PART NUMBER | Operating Force | Total Travel | Actuator Style | Actuator Color | Housing Style | Circuit | Termination | Contact Material |
|---------------|-----------------|--------------|----------------|----------------|---------------|---------|-----------------------------|------------------|
| PNP8S2T2C03GE | 8 N | 2 mm max. | Standard | Black | Standard | SPDT | Solder lug | Gold |
| PNP8S2T2C03QE | 8 N | 2 mm max. | Standard | Black | Standard | SPDT | Solder lug | Silver |
| PNP8S2D2YW2QE | 8 N | 2 mm max. | Standard | Black | Dome | SPST NC | 2 x 12" 22 AWG UL 1569 wire | Silver |
| PNP8S2T2CW3QE | 8 N | 2 mm max. | Standard | Black | Standard | SPDT | 3 x 12" 22 AWG UL 1569 wire | Silver |



ATP SERIES Anti-Vandal Pushbuttons

Features / Benefits

Momentary or lock version
 IP67 sealed
 Various colors of LED illuminate indicator
 Choices of CAP with symbol of Ring, Spot or Power logo

Typical Applications

Control panels for car park & traffic light
 Lifts / Escalator
 Alarm, safety and security systems
 Intercom "push-to-talk" devices
 Food & drink vending machines

| PART NUMBER | Size | Function | Actuator Style | Actuator Indicator | Bushing Type | Termination | Contact Material |
|------------------------|-------|-----------------|-----------------|--------------------|---------------------------|----------------|------------------|
| ATP16-DL1-000-B4SA-04G | 16 mm | SPST, momentary | Dome | Ring | Al alloy (anodized) | Solder lug | Gold flash |
| ATP16-DL5-606-B3SA-04G | 16 mm | SPST, momentary | Dome | Ring & power | Al alloy (black anodized) | Solder lug | Gold flash |
| ATP16-SL1-612-M4SA-04G | 16 mm | SPST, momentary | Standard / Flat | Ring | Stainless DD | Solder lug | Gold flash |
| ATP19-SL3-624-B0DA-03Q | 19 mm | DPDT, momentary | Standard / Flat | Ring (moving) | Stainless round | STD Solder lug | Silver |
| ATP19-SL4-612-M0DE-03Q | 19 mm | DPDT, lock | Standard / Flat | Power | Stainless DD | STD Solder lug | Silver |
| ATP19-SL1-324-B0SE-03Q | 19 mm | SPDT, lock | Standard / Flat | Ring (fix) | Stainless round | STD Solder lug | Silver |
| ATP22-SL3-724-B0SE-03Q | 22 mm | SPDT, lock | Standard / Flat | Ring (moving) | Stainless round | STD Solder lug | Silver |
| ATP22-SL3-312-B0SA-03Q | 22 mm | SPDT, momentary | Standard / Flat | Ring (moving) | Stainless round | STD Solder lug | Silver |



PLP16 SERIES Panel Mount LED Sealed Pushbutton Switches

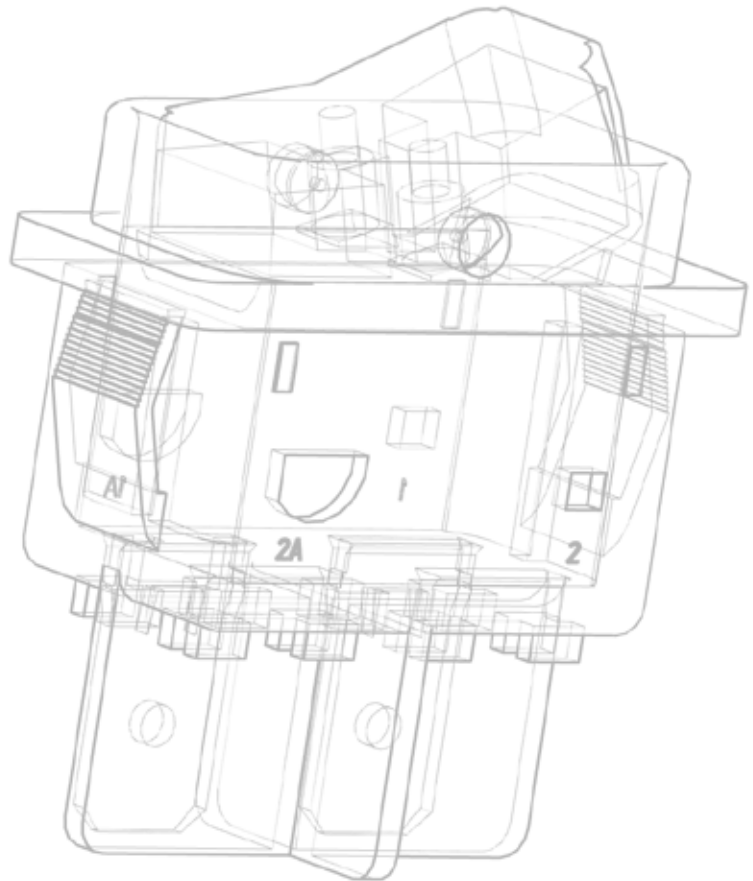
Features / Benefits

Illuminated & non-illuminated type
 Momentary or lock version
 IP65 or IP40 sealed
 Choices of colors on LED illumination
 Various actuator sizes & styles

Typical Applications

Industrial control panel
 Off-road transportation
 Machine & equipment
 Production control indicator

| PART NUMBER | Function | Actuator Style | Actuator Color | LED Voltage | IP Rating |
|---------------|------------|----------------|----------------|-------------|-----------|
| PLP1600RD6SA6 | Mom. SPDT | Round | Green | | IP65 |
| PLP1624RD3DE6 | Lock. DPDT | Round | Red | 24 | IP65 |
| PLP1624SQ3DE6 | Lock. DPDT | Square | Red | 24 | IP65 |
| PLP1624SQ6SE4 | Lock. SPDT | Square | Green | 24 | IP40 |
| PLP1624TA3SA6 | Mom. SPDT | Rectangular | Red | 24 | IP65 |
| PLP16C1RD3SE6 | Lock. SPDT | Round | Solid Red | | IP65 |
| PLP16C1SQ3SA4 | Mom. SPDT | Square | Solid Red | | IP40 |
| PLP16C2TA6SA6 | Mom. SPDT | Rectangular | Trans. Green | | IP65 |



PRODUCT SELECTION GUIDE

Rocker Switches

A rocker switch is an electrical on / off switch that rocks from one side to the other when pressed, leaving one side raised and the other depressed. This rocking mechanism will either connect or disconnect an electrical circuit. C&K's selection of rocker switches includes subminiature, miniature and power, providing an extensive range for printed circuit board through-hole, surface mount and panel mount applications. Models are available in illuminated (LED and neon) and sealed / waterproof versions, with SPST, SPDT, DPST, DPDT, 3PDT and 4DPT functionality. PCB mount options include vertical, right angle and surface mount, while panel mount options include front mount, rear mount and snap-in versions.



| SERIES | 7000 | E | ET | T | 9000 | DA |
|-------------------|---------------------------|--------------------|--------------------|--------------------|-----------------------------|--------------------|
| Switch Type | Miniature | Miniature | Subminiature | Subminiature | Power rocker & lever handle | Miniature power |
| Poles / Throws | SPDT / DPDT / 3PDT / 4PDT | SPDT / DPDT / 3PDT | SPST / SPDT / DPDT | SPST / SPDT / DPDT | DPDT | SPST / SPDT |
| Max. Current | 5 Amps | 7.5 Amps | 3 Amps | 3 Amps | 10 Amps | 16 Amps 10 Amps |
| Washable | | • | • | | | |
| Illuminated | | | | | | • |
| PCB Mount Options | | | | | | |
| Front Mount | • | • | | • | • | Snap-in |
| Rear Mount | • | • | • | • | • | |
| PCB Mount Options | | | | | | |
| Vertical | • | • | • | • | • | • |
| Right Angle | • | • | • | • | • | • |
| Surface Mount | | | • | | | |



| SERIES | D | DM | DM | DF | CR | SW |
|-------------------|---------------------------|-------------------------|-------------------------------|--------------------|------------------|---------------------------------|
| Switch Type | Miniature power | Miniature, 2 pole power | Miniature, illuminated, power | Power | Round | Miniature, power |
| Poles / Throws | SPST / SPDT / DPST / DPDT | DPST / DPDT | SPST / DPST | SPST / SPDT / DPST | SPST / SPDT | SPST / SPDT / DPST |
| Max. Current | 4 Amps 10 Amps | 3 Amps / 10 Amps | 3 Amps / 10 Amps | 16 Amps | 10 Amps / 6 Amps | 3 A / 6 A / 6.5 A / 10 A / 16 A |
| Washable | | | | | | |
| Illuminated | | | • | | • | • |
| PCB Mount Options | | | | | | |
| Front Mount | Snap-in | Snap-in | Snap-in | Snap-in | Snap-in | Snap-in |
| Rear Mount | | | | • | | |
| PCB Mount Options | | | | | | |
| Vertical | • | | | | | |
| Right Angle | • | | | • | | |
| Surface Mount | | | | | | |



7000 SERIES
Miniature Rocker & Lever Handle Switches

Features / Benefits

Multi-pole and multi-position
 Wide variety of actuator and termination options
 Epoxy terminal-seal compatible with bottom wash cleaning

Typical Applications

Telecommunications
 Instrumentation
 Medical equipment

Contact Rating:

Gold 0.4 VA MAX. @ 20 V AC or DC MAX.
 Silver 5 AMPS @ 120 V AC or 28 V DC, 2 AMPS @ 250 V AC

| PART NUMBER | Function | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|--------------|-----------------|-------------------|------------------------------------|------------------|-----------------|
| 7101J1AV2QE2 | SPDT On-None-On | .531" long rocker | Vertical right angle, PC thru-hole | Silver | 100,000 cycles |
| 7101J1AQE2 | SPDT On-None-On | .531" long rocker | Right angle, PC thru-hole | Silver | 100,000 cycles |
| 7101J1ABE2 | SPDT On-None-On | .531" long rocker | Right angle, PC thru-hole | Gold | 100,000 cycles |



E SERIES
Sealed Miniature Rocker and Lever Handle Switches

Features / Benefits

Sealed against solder and cleaning process contaminants
 ESD Resistance—all actuator options
 Rocker, case & bushing UL 94V-0

Typical Applications

Telecommunications
 Instrumentation
 Computers & peripherals

Contact Rating:

Gold 0.4 VA max. @ 20 V AC or DC max.
 Silver 7.5 AMPS@125 V AC or 28 V DC, 3 AMPS @ 250 V AC

| PART NUMBER | Function | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|--------------|-----------------|-------------------|--------------------------------|------------------|-----------------|
| E101J1AQE2 | SPDT On-None-On | .531" long rocker | Right angle, PC thru-hole | Silver | 40,000 cycles |
| E201J1V31QE2 | DPDT On-None-On | .531" long rocker | .460" high, V-bracket, snap-in | Silver | 40,000 cycles |
| E101J3V31QE2 | SPDT On-None-On | .906" long rocker | .460" high, V-bracket, snap-in | Silver | 40,000 cycles |



D SERIES
Miniature Snap-in Power Rocker Switches

Features / Benefits

Momentary and maintained models
 PC and quick connect terminals
 Recessed bracket available — prevents accidental actuation

Contact Rating:

Refer to full line catalog online
 Contact Material Silver

Typical Applications

Small appliances
 Computers and peripherals
 Medical instrumentation

| PART NUMBER | Function | Mounting Style / Color | Mounting Style / Termination | Markings | Electrical Life |
|----------------|-------------------|------------------------|------------------------------|----------|-----------------|
| D502J12S2AHQA | SPST, On-None-Off | Snap-in, black | Right angle, PC thru-hole | O I | 10,000 cycles |
| D101J12S215PQA | SPDT, On-None-On | Snap-in, black | PC thru-hole | O - | 10,000 cycles |
| D501J12S2AHQA | SPDT, On-None-On | Snap-in, black | Right angle, PC thru-hole | O I | 10,000 cycles |



DF SERIES
Power Rocker Switches

Features / Benefits

Power switching up to 16 AMPS
 Sub-panel and front-panel mounting
 Multi-position and multi-pole function
 Available in UL94V-0 grade materials

Contact Rating:

16 AMPS @ 125, 250 V AC, 1/4 HP @ 125 V AC
 1/2 HP @ 250 V AC, 6 AMPS @ 48 V DC (UL)

Typical Applications

Overhead fan on range / hood
 Small and large appliances

| PART NUMBER | Function | Housing Style / Color | Mounting Style / Termination | Contact Material | Electrical Life | Markings |
|----------------|--------------|-----------------------|------------------------------|------------------|-----------------|----------|
| DF62J12S2AHQA | DPST, Off-On | Sub-panel, black | Right angle, PC thru-hole | Silver (UL) | 10,000 cycles | O I |
| DF62J12S2APQA | DPST, Off-On | Sub-panel, black | Right angle, PC thru-hole | Silver (UL) | 10,000 cycles | O- |
| DF62J12S215PQA | DPST, Off-On | Sub-panel, black | Quick connect | Silver (UL) | 10,000 cycles | O- |



SW SERIES
Power Rocker Switches

Features / Benefits

Oval shape
Several color options (black, white, almond, biscuit)
Front panel mounting

Contact Rating:
6.5 AMP @ 125 V AC

Typical Applications

Computers
Power supplies
Appliances
Fitness equipment
Off-road vehicles

PART NUMBER

SW-13A65N-A01 BK

SW-13A65N-A01

Function

SPDT, On-Off-On

SPDT, On-Off-On

Actuator

Concave (curved)

Concave (curved)

Color

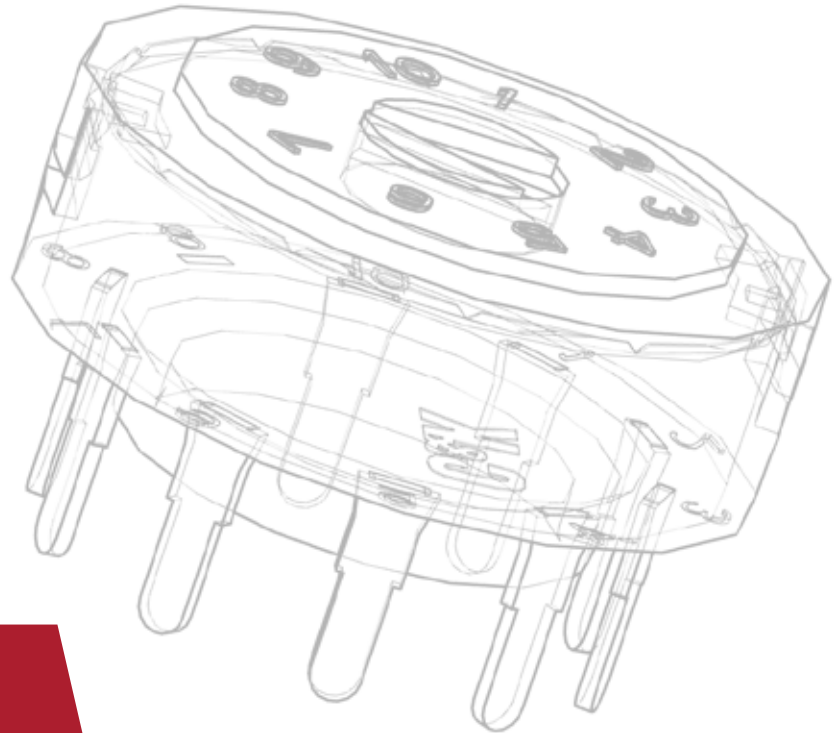
Black

White

Termination

Quick connect

Quick connect

**PRODUCT SELECTION GUIDE**

Rotary Switches

Rotary switches from C&K are available in a variety of indexing options for applications ranging from 10 mA to 12 Amps. With multi-pole, multi-position, half-inch, rota-slide, power rota-slide and sub-miniature switch type designs, C&K rotary switches feature shorting and non-shorting contacts for maximum design flexibility.



| SERIES | A | RTA | M | R | F | H | RW | RM | ENC |
|-------------------------------------------|-----------------------------|-----------------------------|---------------|------------|------------|------------------|--------------------------|----------------------|-----------------|
| Switch Type | Multi-pole / Multi-position | Multi-pole / Multi-position | Half-inch | Rota-slide | Rota-slide | Power Rota-slide | Sub-miniature rotary SMT | Sub-miniature rotary | Optical encoder |
| Miniature | | | | | • | | • | • | |
| Low Profile | | | | | • | | • | | |
| Screwdriver Slot | • | • | • | • | • | | | • | |
| Power | | | | | | • | | | |
| Maximum Current | 2.5 Amps | 5 A 1 A | 6 Amps | 5 Amps | 4 Amps | 12 Amps | 0.1 A 10 mA | 0.5 Amps | 30 mA |
| Poles | 1-4 | 1-4 (except 3) | 1 & 2 | 1 & 2 | 1 & 2 | 1 & 2 | 1 | 1 | 1 |
| Indexing | 30° / 45° / 90° | 22.5° / 30° / 36° | 30° / 36° | 36° | 45° & 90° | 45° | 36° & 45° | 45° | 22.5° |
| Splashproof | • | | • | | | | | | |
| Sealed | | | • F option | | | | | | |
| Non-shortening / Shorting Contacts | • | | | | | | | | |
| Panel Mount Options | | | | | | | | | |
| Top Mount | | | | | | | | | • |
| Rear Mount | • | • | • | • | • | • | | | |
| PCB Mount Options | | | | | | | | | |
| Vertical | • | • | • | • | • | | • | | |
| Terminations | | | | | | | | | |
| Solder Lug | • | • | • | • | • | • | | | |
| Wire Lead | | | | • | • | • | | | |
| Quick Connect | | | | | | • | | | |
| PC Connector | • | • | • | • | • | | • | • | |
| Connector | | | | | | | | | • |



A SERIES
1-4 Pole Rotary Switches

Features / Benefits

Multi-pole and multi-position
Positive detent
Shorting & non-shorting contacts
Panel and PCB mounting
Electrical life 15,000 make-and-break cycles at full load up to 300,000 detent operations

Typical Applications

Automotive
Major and small appliances
Industrial equipment

| PART NUMBER | Function | Contact Rating | Mounting Style / Termination | Contact Material | Seal |
|-------------|------------------------------------|--------------------------------------------------------------------------------|------------------------------|------------------|----------------------------------|
| A10305RNCB | SP, 30° Index, 3 pos. non-shorting | 0.4 VA MAX. @ 20 V AC or DC MAX | PC thru-hole | Gold | None |
| A11405RNZQ | SP, 90° Index, 2 pos. non-shorting | SWITCH-2.5 AMPS @ 125 V AC; 350 mA @ 125V DC (UL/CSA). CARRY-5 AMPS CONTINUOUS | Solder lug | Silver | None |
| A20605RNCQK | DP, 30° Index, 6 pos. non-shorting | SWITCH-2.5 AMPS @ 125 V AC; 350 mA @ 125V DC (UL/CSA). CARRY-5 AMPS CONTINUOUS | PC thru-hole | Silver | Epoxy & splashproof bushing seal |



R SERIES
ROTA-SLIDE® Rotary Switches

Features / Benefits

Multi-pole and multi-position
Positive detent
Panel and PCB mounting
Enclosed
Electrical life 10,000 make-and-break cycles at full load

Typical Applications

Ceiling fans
Industrial equipment
Portable tools

Contact Rating:

5 AMPS @ 125 V AC, 2.5 AMPS @ 250 V AC
0.5 AMP @ 125 V DC (UL)
1/8 HP @ 125 and 250 VAC (UL)

| PART NUMBER | Function | Actuator | Mounting Style | Mounting Style / Termination |
|-------------|-----------------------|----------------------------------|-------------------------|------------------------------|
| R20507RR02Q | DP, 36° Index, 5 pos. | .500" high with .156" flat | 3/8-32 threaded bushing | PC thru-hole |
| R20407RR03Q | DP, 36° Index, 4 pos. | .500" high with .156" flat | 3/8-32 threaded bushing | Solder lug with hole |
| R10815RS02Q | SP, 36° Index, 8 pos. | Screwdriver slot without bushing | PC without bushing | PC thru-hole |



ENC SERIES
Subminiature Rotary Switches

Features / Benefits

- Clear detent / haptic feel
- Two channel, 2-bit code output
- Quadrature (incremental type)
- Integrated pushbutton

Typical Applications

- Automotive interior control
- Industrial equipment
- Test & instrumentation
- Medical equipment

PART NUMBER

ENCOS16DS5C

Function

1 pole 16 position

Contact Rating

Rotary: 30 mA @ 5 V DC
 Pushbutton: 10 mA @
 5 V DC

Actuation Force

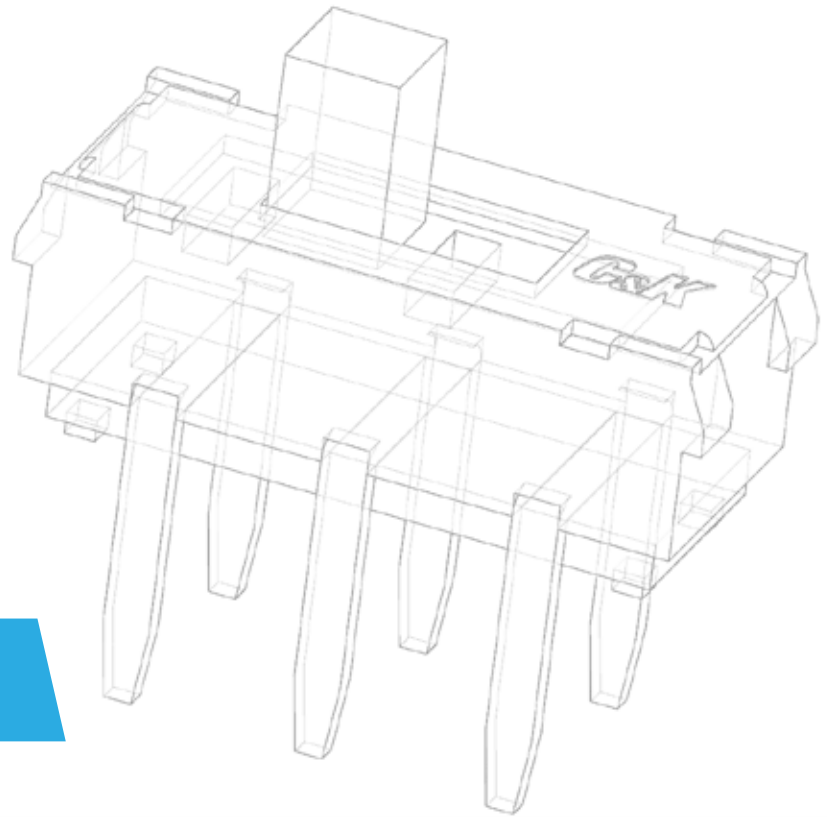
600 ± 20% gf

Operating Life

300,000 cycles

Termination

SMT



PRODUCT SELECTION GUIDE

Slide Switches

Featuring large size slide switches for power applications and small or medium size for low current or signal level applications. Our slide switches are compatible with the most standard soldering processes. Wave soldering and Reflow processes for switch placement at PCB level and also manual soldering and spot welding for typical value add solutions with wire leads or wire harnesses. Available in SPST, SPDT, SP3T, DPST, DPDT, 3PDT, 4PDT and 4P3T functions. Most of our designs include positive detent, sealing properties and selection in between Make-Before Break or Break-Before Break contacts.



| SERIES | JS | SS | 1000 | OS | L | AYZ | PCM | SK |
|-----------------------------------------|-------------------|-----------------------------|------------------------|-----------------|-----------------------------|------------------|----------------|------------------|
| Switch Type | Small | Small | Medium | Small | Large | Small | Small | Small |
| Travel (mm)* | 2 mm | Min: 2 Max: 5 | Min: 2.16 Max: 2.41 | 2 | Min: 3.30 Max: 4.06 | 1.5 | 1.5 | Min: 2 Max: 4 |
| Rating (max.) | 0.3 A 6 VDC | 0.3 A 6 VDC or 30 VDC | 6 A 20 VAC or VDC | 0.1 A 12 VDC | 4 A 125 VAC or 28 VDC | 100 mA 12 VDC | 0.3 A 6 VDC | 0.3 A 30 VDC |
| Poles | 1 or 2 | 1, 2 or 4 | 1 or 2 | 1 or 2 | 1 or 2 | 1 or 2 | 1 | 1, 2 or 4 |
| No. of Position (Throws) | 1, 2 or 3 | 1, 2, 3 or 4 | 1 or 2 | 1, 2 or 3 | 1, 2, 3 or 4 | 1, 2 or 3 | 1, 2 or 3 | 1, 2, 3 or 4 |
| Min. Mount Height - Top Actuator | 3.5 mm | | 6.35 mm | 4 mm | 9.09 mm | 1.5 mm | | |
| Min. Mount Height - Right Angle | 0.7 mm | 3.5 mm | 6.6 mm | 3.9 mm | 7.92 mm | 1.5 mm | 1.4 mm | 3 mm |
| Momentary (MOM) or Maintained | MOM or Maintained | Maintained | MOM or Maintained | Maintained | MOM or Maintained | Maintained | Maintained | Maintained |
| Tape & Reel | • | | | | | | • | |
| Terminations | | | | | | | | |
| Wire Wrap | | | • | | • | | | |
| Quick Connect | | | • | | | | | |
| Wire Lead | | | | | • | | | |
| Solder Lug | | | • | • | • | | | |
| PC | • | • | • | • | • | • | • | • |
| Terminations | | | | | | | | |
| Thru-hole | • | • | • | • | • | | | • |
| Vertical | • | • | • | • | • | | | |
| Right Angle | • | | • | • | | | | • |
| Surface Mount | • | | | | | • | • | |
| Terminations | | | | | | | | |
| Snap-in | | | | | | | | |
| Mounting Ears | | | • | • | • | | | |
| Right Angle | | | • | | | | | |



| SERIES | V | JSM | JSX | ES | TS | GS | LP | S |
|-----------------------------------------|------------------------------|-------------------|----------------|-------------------------|----------------------|-------------------------|------------------------------|-------------------------------------|
| Switch Type | Large | Small | Small | Small | Small | Small | Large | Large |
| Travel (mm)* | 6.60 | 2.7 | 1.3 | 2.29 | 3.05 | 1.02 | 3.68 | 4.57 |
| Rating (max.) | 10 A 125 VAC or 30 VDC | 0.3 A 4 VDC | 10 mA 5 VDC | 0.02 A 20 VAC or VDC | 3 A 20 VAC or VDC | 0.02 A 20 VAC or VDC | 11 A 125 VAC or 28 VDC | 6 A or 15 A 125 VAC or 20 VDC |
| Poles | 1 or 2 | 1 | 1 | 1 or 2 | 1 | 1 | 1 or 2 | 1 or 2 |
| No. of Position (Throws) | 1 or 2 | 1, 2, 3 or 4 | 2 | 1 or 2 | 1 or 2 | 1 or 2 | 1 or 2 | 1 or 2 |
| Min. Mount Height - Top Actuator | 15.75 mm | 2 mm | | 6.38 mm | 5.08 mm | 5.38 mm | 8.13 mm | 7.11 mm |
| Min. Mount Height - Right Angle | 15.75 mm | 2 mm | 1.2 mm | 10.03 mm | 9.81 mm | 5.38 mm | | |
| Momentary (MOM) or Maintained | Maintained | MOM or Maintained | MOM | Maintained | Maintained | Maintained | Maintained | MOM or Maintained |
| Tape & Reel | | • | • | • | | • | | |
| Terminations | | | | | | | | |
| Wire Wrap | | | | | • | | | |
| Quick Connect | • | | | | | | | • |
| Wire Lead | | | | | | | • | • |
| Solder Lug | | | | | | | • | • |
| PC | • | | | • | • | • | | • |
| Terminations | | | | | | | | |
| Thru-hole | • | | | • | • | • | • | • |
| Vertical | • | | | • | • | • | • | • |
| Right Angle | • | | | • | • | • | | • |
| Surface Mount | | • | • | • | | • | | |
| Terminations | | | | | | | | |
| Snap-in | • | | | | | | • | • |
| Mounting Ears | • | | | | | | | • |
| Right Angle | • | | | • | • | • | | • |



JS SERIES
Sub-Miniature Slide Switches

Features / Benefits

Positive detent
Low profile
IR reflow to 260° solder profile

Contact Rating:
0.3A @ 6 V DC

Typical Applications

Telecommunication products
Computer peripherals
Thermostat select switch
Instrumentation
Medical

| PART NUMBER | Function | Mounting Style / Termination | Contact Material | Electrical Life |
|---------------|----------|------------------------------|-----------------------------|-----------------|
| JS102011JAQN | SPDT | Right angle - surface mount | Copper alloy, silver plated | 5,000 cycles |
| JS207011SCQNR | DP3T | Surface mount | Copper alloy, silver plated | 5,000 cycles |
| JS102011SAQN | SPDT | Right angle - surface mount | Copper alloy, silver plated | 5,000 cycles |



SS SERIES
Miniature Slide Switches

Features / Benefits

Various circuit design, SPDT, 4P3T, vertical, right angle
Compact miniature slide switch
Shorting or non-shorting
Custom design available

Typical Applications

Consumer electronics
Computer peripherals
Telecommunication
Audio & visual equipment
Medical

| PART NUMBER | Function | Contact Rating | Actuator | Travel | Termination | Electrical Life |
|------------------------|--------------------|-----------------|----------|--------|--------------|-----------------|
| SS-12D07-VG 4 NS GA PA | SPDT, non-shorting | 0.3 A @ 30 V DC | 4 mm | 2 mm | PC thru-hole | 10,000 cycles |
| SS-12D1505-G 2 | SPDT, non-shorting | 0.3 A @ 6 V DC | 2 mm | 2 mm | PC thru-hole | 10,000 cycles |
| SS-14D08-VG 5 PA | 1P4T | 0.3 A @ 30 V DC | 5 mm | 2 mm | PC thru-hole | 10,000 cycles |
| SS-22D0205-G 2 | DPDT, non-shorting | 0.3 A @ 6 V DC | 2 mm | 2 mm | PC thru-hole | 10,000 cycles |
| SS-22D07-G 2 NS PA | DPDT, non-shorting | 0.3 A @ 30 V DC | 4 mm | 2 mm | PC thru-hole | 10,000 cycles |



1000 SERIES Miniature Slide Switches

Features / Benefits

Variety of actuators and terminations
 Panel mount tabs available
 Epoxy terminal seal—compatible with bottom-wash cleaning

Contact Rating:

Gold 0.4 VA max. @ 20 V AC or DC max.
 Silver 6 AMPS @ 120 V AC or 28 V DC, 3 AMPS @ 250 V AC

Typical Applications

Test & measurement equipment
 Telecommunications
 Computer & peripherals

| PART NUMBER | Function | Mounting Style | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|----------------|-----------------|-----------------------|------------|------------------------------------|------------------|-----------------|
| 1101M2S3CQE2 | SPDT On-None-On | PC mount without tabs | .200" high | PC thru-hole | Silver | 40,000 cycles |
| 1101M2S3AV2QE2 | SPDT On-None-On | PC mount without tabs | .200" high | Vertical right angle, PC thru-hole | Silver | 40,000 cycles |
| 1101M2S3AQE2 | SPDT On-None-On | PC mount without tabs | .200" high | Right angle, PC thru-hole | Silver | 40,000 cycles |
| 1201M2S1CQE2 | DP On-None-On | Panel mount with tabs | .200" high | PC thru-hole | Silver | 40,000 cycles |



OS SERIES Miniature Slide Switches

Features / Benefits

Variety of actuators & terminations
 PC and panel mounting
 Gold or silver plating available
 Shorting or non-shorting contacts

Contact Rating:

0.1 A @ 12 V DC

Typical Applications

Test & measurement equipment
 Computer peripherals & network products
 Consumer products

| PART NUMBER | Function | Mounting Style | Actuator | Travel | Contact Material | Electrical Life |
|----------------|------------------------------|----------------|----------|--------|-----------------------------|-----------------|
| OS103011MS8QP1 | SP3T, On-On-On, non-shorting | Vertical | H: 4 mm | 2 mm | Copper alloy, silver plated | 10,000 cycles |
| OS102011MS2QN1 | SPDT, On-On, non-shorting | Vertical | H: 4 mm | 2 mm | Copper alloy, silver plated | 10,000 cycles |
| OS202011MS2QS1 | DPDT, On-On, shorting | Vertical | H: 4 mm | 2 mm | Copper alloy, silver plated | 10,000 cycles |
| OS202011MA0QN1 | DPDT, On-On, non-shorting | Right angle | L: 4 mm | 2 mm | Copper alloy, silver plated | 10,000 cycles |



L SERIES
Miniature Slide Switches

Features / Benefits

- Positive detent
- Enclosed housing
- Maintained and momentary functions
- PC and panel mounting

Contact Rating:

- 4 AMPS @ 125 V AC or 28 V DC
- 2 AMPS @ 250 V AC
- 0.5 AMP @ 125 V DC (UL)

Typical Applications

- Communications equipment
- Lighting devices

| PART NUMBER | Function | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|---------------|----------|---------------------|------------------------------|------------------|-----------------|
| L203111MS02Q | DP3T | 0.100" high | PC thru-hole | Silver | 10,000 cycles |
| L103111MS02Q | SP3T | 0.100" high | PC thru-hole | Silver | 10,000 cycles |
| L20202MA04Q | DPDT | 0.335" high | Right angle, PC thru-hole | Silver | 10,000 cycles |
| L212132MV02QE | DPDT-MOM | Plunger without cap | PC thru-hole | Silver | 10,000 cycles |



AYZ SERIES
Miniature Slide Switches

Features / Benefits

- Low profile
- Single & double pole models
- Double & triple throw models

Contact Rating:

- 100 mA @ 12 V DC

Typical Applications

- Computer peripherals & network products
- Telecommunication products
- Test & measurement equipment
- Medical

| PART NUMBER | Function | Actuator | Termination | Contact Material | Electrical Life |
|--------------|----------------|-----------|-------------|-----------------------------|-----------------|
| AYZ0202AGRLC | DPDT, On-On | H: 1.0 mm | SMT | Copper alloy, silver plated | 10,000 cycles |
| AYZ0102AGRLC | SPDT, On-On | L: 1.0 mm | SMT | Copper alloy, silver plated | 10,000 cycles |
| AYZ0203AGRLC | DP3T, On-On-On | H: 1.0 mm | SMT | Copper alloy, silver plated | 10,000 cycles |



PCM SERIES
Sub-Miniature Slide Switches

Features / Benefits

Ultraminiature surface mount
Low profile
SPDT & SP3T models
RoHS compliant

Typical Applications

Computer peripherals & network product
Telecommunication products
Test & measurement equipment
Medical

| PART NUMBER | Function | Mounting Style / Termination | Contact Material | Electrical Life |
|-------------|----------|------------------------------|-----------------------------|-----------------|
| PCM12SMTR | SPDT | SMT, right angle | Copper alloy, silver plated | 10,000 cycles |
| PCM13SMTR | SP3T | SMT, right angle | Copper alloy, silver plated | 10,000 cycles |



SK SERIES
Miniature Slide Switches

Features / Benefits

Various circuit design, SPDT, 4P3T, vertical, right angle
Compact miniature slide switch
Shorting or non-shorting
Custom design available

Typical Applications

Consumer electronics
Computer peripherals
Telecommunication
Audio & visual equipment
Medical

| PART NUMBER | Function | Contact Rating | Actuator | Travel | Termination | Electrical Life |
|---------------------|--------------------|-----------------|----------|--------|--------------|-----------------|
| SK-12D04-VG 3 NS | SPDT, non-shorting | 0.3 A @ 30 V DC | 3 mm | 2 mm | PC thru-hole | 10,000 cycles |
| SK-12D07-G 5 NS PA | SPDT, non-shorting | 0.3 A @ 30 V DC | 5 mm | 2 mm | PC thru-hole | 10,000 cycles |
| SK-12D07-VG 4 NS PA | SPDT, non-shorting | 0.3 A @ 30 V DC | 4 mm | 2 mm | PC thru-hole | 10,000 cycles |
| SK-13D21-G 2 RT | 1P3T, non-shorting | 0.3 A @ 4 V DC | 2 mm | 2 mm | SMT | 10,000 cycles |
| SK-14D01-G6 | 1P4T | 0.3 A @ 30 V DC | 6 mm | 2 mm | PC thru-hole | 10,000 cycles |



V SERIES

Power & Line Voltage Select Slide Switches

Features / Benefits

Actuator with screwdriver slot

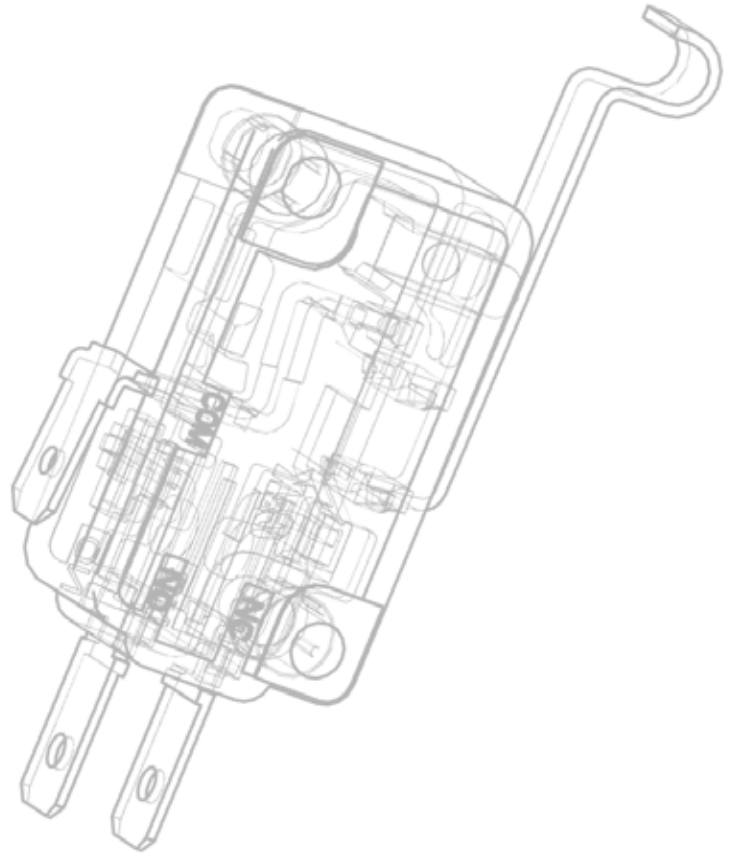
Contact Rating:

- 10 GPA @ 125 V AC 50/60 Hz T85
- 5 GPA @ 250 V AC 50/60 Hz T85
- 2 (0.5) A @ 250 V AC 50/60 Hz T85
- 4RA @ 30 VDC T85

Typical Applications

Appliances

| PART NUMBER | Function | Mounting Style | Mounting Style / Termination | Contact Material | Electrical Life |
|-------------|----------|---------------------------|------------------------------|------------------|-----------------|
| V80212MS02Q | DPDT | PC thru-hole | PC thru-hole | Silver | 10,000 cycles |
| V80212MA08Q | DPDT | Right angle, PC thru-hole | Right angle PC thru-hole | Silver | 10,000 cycles |
| V80212S205Q | DPDT | Snap-in panel | Quick connect | Silver | 10,000 cycles |



PRODUCT SELECTION GUIDE

Snap-acting Switches

C&K's broad range of snap switches includes subminiature, miniature, and metal case models. These limit switches have a variety of actuator configurations (pin plunger, lever, and roller lever), electrical ratings from low levels up to 30 Amps, and a broad range of operating forces. Terminal styles include PCB through-hole, quick connect, wire leads, screw, solder, formed PC through-hole, flat and step base. Sealed models are available as is SPST, SPDT, DPST and DPDT functionality. Mounting options include vertical or right angle, PCB and snap-in mounting.



| SERIES | MM | MS | ZM | ZMA | ZMS | ZMSM | ZMW | ZPA |
|-----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|
| Switch Type | Mini Size | Mini Size | Mini Size | Mini Size | Mini Size | Mini Size | Mini Size | Mini Size |
| Poles / Throws | SPDT | SPDT | SPDT | SPDT | SPDT | SPDT | SPST, SPDT | SPDT |
| Maximum Current | 7 Amps | 3 Amps | 3 Amps | 3 Amps | 3 Amps | 3 Amps | 0.1 Amps | 0.1 Amps |
| Terminations | | | | | | | | |
| Solder | | | | • | • | • | • | • |
| Quick Connect | | | | | | | • | |
| Wire Leads | | | | | • | • | • | |
| Screw | | | | | | | | |
| PCB Thru-hole | • | • | • | • | • | • | • | |
| Flat & Step Base | | | | | | | | |
| Bushing | | | | | | | | |
| Sealed | | | | | • | • | • | |



| SERIES | MDS | SSW | LC | LCA | LCS | TF | TFS | TF3 |
|-----------------------------|------------|-----------|------------|------------|------------|------------|----------|----------|
| Switch Type | Mini Size | Mini Size | Small Size | Small Size | Small Size | Mid Size | Mid Size | Mid Size |
| Poles / Throws | SPDT | DPDT | SPST, SPDT | SPDT | SPST | SPST, SPDT | SPDT | SPST |
| Maximum Current | 300 m Amps | 20 Amps | 10.1 Amps | 10 Amps | 6 Amps | 21 Amps | 10 Amps | 25 Amps |
| Terminations | | | | | | | | |
| Solder | • | | • | • | • | • | • | • |
| Quick Connect | | | • | • | • | • | • | • |
| Wire Leads | | | • | | • | | • | |
| Screw | | | | | | | | |
| PCB Thru-hole | • | | | | | | | |
| Flat & Step Base | | | | | | | | |
| Surface Mount | | • | | | | | | |
| PC | | | • | • | • | | | |
| Formed PC | | | • | • | • | | | |
| Extended Operations | | | • | • | | • | • | |
| Sealed | | | | | • | | • | |



| SERIES | TM | HB | A | TL | DS |
|-----------------------------|------------|------------------|------------------|------------------|------------------|
| Switch Type | Mid Size | Large Heavy Duty | Large Heavy Duty | Large Heavy Duty | Large Heavy Duty |
| Poles / Throws | SPST, SPDT | SPST, SPDT | SPST, SPDT, DP | SPDT | SPST, SPDT |
| Maximum Current | 15 Amps | 20 Amps | 30.1 Amps | 15 Amps | 0.1, 10, 16 A |
| Terminations | | | | | |
| Solder | • | • | | | |
| Quick Connect | • | • | • | • | • |
| Wire Leads | | | | | |
| Screw | • | • | | • | |
| PCB Thru-hole | | | | | |
| Flat & Step Base | | • | | | |
| Surface Mount | | | | | |
| PC Formed PC | | | | | |
| Bushing | | 15/32-32 | 3/8-23 | | |



MS SERIES
Snap-acting Switches

Features / Benefits

Detect interlock and movement
Different lever options
Various operating forces

Typical Applications

Industrial
Consumer electronics
Appliances

| PART NUMBER | Function | Operating Force | Electrical Rating | Actuator | Termination |
|---------------|--------------|-----------------|-------------------|------------------|--------------|
| MS-118305-G | SP momentary | 25 gf | 0.1 A, 30 V DC | Lever ST 12.5 mm | PC thru-hole |
| MS-118405-H | SP momentary | 25 gf | 0.1 A, 30 V DC | Lever SR R1.3 | Solder lug |
| MS-105A01 (H) | SP momentary | 230 gf | 5 A 125 V AC | Pin plunger | Solder lug |



ZMA SERIES
Mini Size Snap-acting Switches

Features / Benefits

Reliable snap-acting mechanism
Long electrical and mechanical life
Compact size—Ideal when space is limited
Electrical life 300,000 cycles @ 0.1A / 10,000 cycles @ 3A

Typical Applications

PCB detection switch
Communication devices
Testing equipment
Security / Alarm systems

| PART NUMBER | Function | Electrical Rating | Operating Force | Actuator | Mounting Style / Termination |
|----------------|-----------------|-----------------------------|-----------------|--------------------------|------------------------------|
| ZMA03A150S07EC | SPDT, momentary | 3 A @ 125 V AC 24 V DC | 150 grams | Simulated roller 0.75 mm | Solder |
| ZMA00A150L04PC | SPDT, momentary | 0.1 A @ 125 V AC 60 V DC | 150 grams | Lever 4.55 mm | PC thru-hole |
| ZMA03A150A03PC | SPDT, momentary | 3 A @ 125 V AC 24 V DC | 150 grams | Roller 1.87 mm | PC thru-hole |



ZMW SERIES
Mini Size Snap-acting Switches

Features / Benefits

Long and adequate stroke setting for high reliability and insulation
 Silent for noiseless application
 Compact size – ideal when space is limited
 IP67

Typical Applications

Automotive
 Industrial
 Home appliances

| PART NUMBER | Function | Electrical Rating | Operating Force | Actuator | Mounting Style / Termination |
|---------------|----------|-------------------|-----------------|-------------|------------------------------|
| ZMW00AP00PCAA | SPDT | 0.1 A 30 VDC | 150 grams | Pin plunger | PC thru-hole |
| ZMW00AT10SCAA | SPDT | 0.1 A 30 VDC | 150 grams | Lever | |



ZPA SERIES
Surface Mount Snap-acting Switches

Features / Benefits

Reliable snap-acting mechanism
 Long electrical and mechanical life
 Subminiature packaging size
 Surface mount terminations
 RoHS compatible & compliant

Typical Applications

PCB detection switch
 Communication devices
 Testing equipment
 Security / Alarm systems
 Consumer electronics

| PART NUMBER | Function | Operating Force | Electrical Rating | Actuator | Termination |
|---------------|----------|-----------------|-------------------|-------------|---------------|
| ZPA00A150P00T | SPST | 150 grams | 0.1 A | Pin plunger | Surface mount |



SSW SERIES
Mini Size 2 Pole Snap-acting Switches

Features / Benefits

SMT
 IP67
 Redundant contacts
 Change over time <15 ms
 Top and side actuation

Typical Applications

Automotive, ASIL related applications
 (electronic parking brake, by-wire functions)
 Safety applications

| PART NUMBER | Function | Operating Force | Electrical Rating | Actuator | Termination |
|-------------|----------|-----------------|-------------------|----------|---------------|
| SSW 115S | DPDT | 2 N | 20 mA, 18 V DC | Standard | Surface mount |



LC SERIES
Small Size Precision Snap-acting Switches

Features / Benefits

Compact design
 Long life and high electrical capacity
 Quick connect, wire lead or PC mounting
 Wide variety of actuator styles

Typical Applications

Motorized equipment
 Sump pump
 Thermostatic controls

| PART NUMBER | Function | Operating Force | Electrical Rating | Actuator | Termination |
|--------------|----------|-------------------|----------------------------|-------------------------------|---------------------------|
| LCGHF5A10RCE | SPDT | 6 oz. / 170 grams | 1 A, 125, V AC, 30 V DC | .28" lever roller, high force | Right formed PC thru-hole |
| LCGGL9P00EC | SPDT | 5 oz. / 142 grams | 5 A, 1/3 HP, 125, 250 V AC | Pin plunger | Solder lug |



LCS SERIES
Small Size Sealed Snap-acting Switches

Features / Benefits

Compact design
 Quick connect, solder terminals, PC terminals, wire leads
 Wide variety of actuator styles
 IP67
 Electrical life 10,000 cycles

Typical Applications

Motorized equipment
 Sump pump
 Thermostatic controls
 Computers
 Air conditioners

| PART NUMBER | Function | Operating Force | Actuator | Mounting Style/ Termination | Contact Rating |
|--------------|----------|-----------------|----------------------|-----------------------------|-----------------------|
| LCS051P00SDC | SPDT | 150 grams | Pin plunger | Solder | 5 AMP, 125/250 V AC |
| LCS011T05QDC | SPDT | 150 grams | Short lever, 17.4 mm | 0.110 quick connect | 0.1 AMP, 125/250 V AC |
| LCS051P00PDC | SPDT | 150 grams | Pin plunger | PC thru-hole | 5 AMP, 125/250 V AC |



TF SERIES
Mid Size Snap-acting Switches

Features / Benefits

Broad range of operating forces
 From low level* to 21 AMPS @ 277 V AC
 Wide variety of actuator styles

Typical Applications

Motor controls
 Thermostatics
 Portable tools

| PART NUMBER | Function | Operating Force | Electrical Rating | Actuator | Termination |
|----------------------|----------------|----------------------|-----------------------------------------------------------------------------------|------------------------|---------------------|
| TFCJL3SP004AC | SPDT momentary | 5.29 oz. / 150 grams | 20 A, 250 V AC; 1 HP, 125 V AC; 2 HP 250 V AC | Pin plunger | .250" quick connect |
| TFCDK6ST2640C | SPDT momentary | .88 oz. / 25 grams | 11 A, 277 V AC; 1/3 HP, 125, 250 V AC; 0.5 A, 125 V DC; 0.25 A, 250 V DC | 2.57" lever, low force | .187" quick connect |



TF3 SERIES
Mid Size Snap-acting Switches

Features / Benefits

Broad range of operating forces
 Rating up to 25 AMPS
 Wide variety of actuator styles
 Extreme operating temperature up to 125°C

Typical Applications

Heavy duty power tools
 Motor controls
 HVAC

| PART NUMBER | Function | Operating Force | Electrical Rating | Actuator | Termination |
|----------------------|----------|-----------------|-------------------|-------------|---------------|
| TF325CFP0040Y | SPST | 190 grams | 25A | Pin plunger | Quick connect |



A SERIES
General Purpose Snap-acting Switches

Features / Benefits

Low cost—high performance
Long electrical life
Sealed actuator option available

Typical Applications

Enclosure equipment
Garage door openers
Vending machines

| PART NUMBER | Function | Operating Force | Electrical Rating | Actuator | Termination |
|-------------|----------|--------------------|---------------------------------------------------------------|-------------------------|---------------------|
| ASKHC2T04AC | SPDT | 20 oz. / 567 grams | 15 A, 125, 250 V AC 3/4 HP, 125 V AC 1 1/2 HP, 250 V AC | Lever | .250" quick connect |
| ADPDC2T04AC | DPDT | 30 oz. / 850 grams | 15 A, 125, 250 V AC 3/4 HP, 125 V AC 1 1/2 HP, 250 V AC | Lever | .250" quick connect |
| ASKHC2J04AC | SPDT | 20 oz. / 567 grams | 15 A, 125, 250 V AC 3/4 HP, 125 V AC 1 1/2 HP, 250 V AC | High overtravel plunger | .250" quick connect |



DS SERIES
Interlock Pushbutton Switches

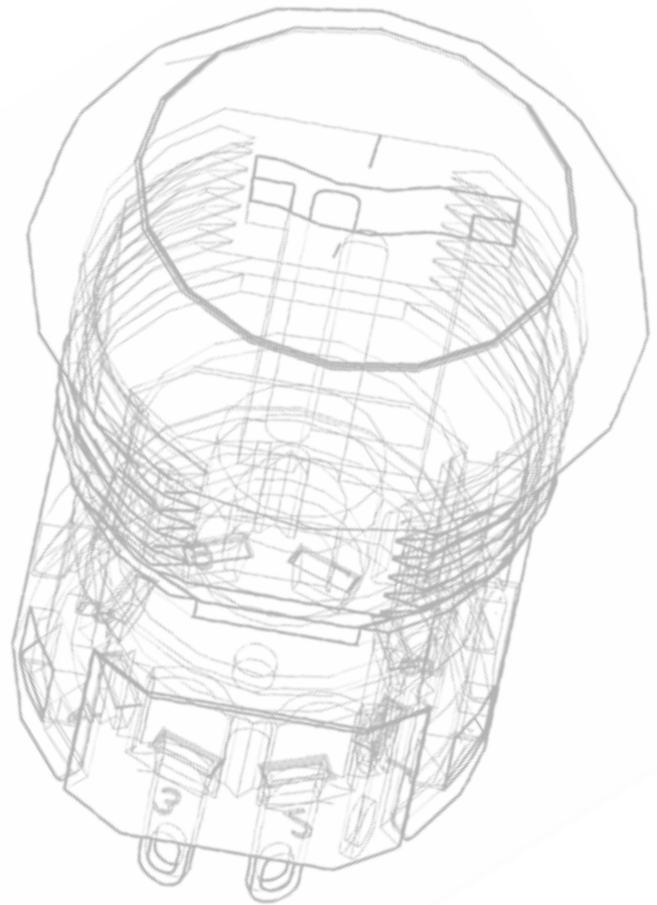
Features / Benefits

Snap-in mounting
Reliable snap action mechanism
Latch or momentary
Halogen free material

Typical Applications

Interlock switch
Detection switch
Circuit interrupt

| PART NUMBER | Function | Contact Rating | Actuator | Terminals |
|-------------|----------|--------------------------------------------------------------------------------------------------------------------------------|------------------------------|--------------|
| DS1D6AQ1 | SPDT | 10 (4) A @125/250 V AC 50/60 Hz 50,000 cycles, 10 A G.P. @ 125 / 250 V AC 1/3HP @ 125/250 V AC 50/60 Hz 10,000 cycles | Momentary, short button | 4.8 x 0.5 mm |
| DS2D6BQ1 | DPDT | 10 (4) A @125/250 V AC 50/60 Hz 50,000 cycles, 10 A G.P. @ 125 / 250 V AC 1/3HP @ 125/250 V AC 50/60 Hz 10,000 cycles | Momentary, long button | 4.8 x 0.5 mm |
| DS2D6CQ1 | DPDT | 10 (4) A @125/250 V AC 50/60 Hz 50,000 cycles, 10 A G.P. @ 125 / 250 V AC 1/3HP @ 125/250 V AC 50/60 Hz 10,000 cycles | Momentary, pulled out button | 4.8 x 0.5 mm |



PRODUCT SELECTION GUIDE

Switchlocks

Available in plastic or metal housings, C&K's switchlocks feature 4 to 6 tumblers supporting a variety of security needs. Miniature, anti-static and momentary versions combine with bushing or snap-in mounting for a broad product selection.



| SERIES | Y | YF | YM | PM |
|---------------------|-----------------|-----------|-----------|-----------|
| Switch Type | 4, 5, 6 Tumbler | 4 Tumbler | 4 Tumbler | 5 Tumbler |
| Lock | Metal | Metal | Metal | Plastic |
| Latch Pawl | • | | | |
| Miniature | | • | | • |
| Anti-static | • | | | |
| Momentary | • | | | |
| Poles | 1 & 2 | 1 & 2 | 1 | 1 |
| Indexing | 45° & 90° | 45° & 90° | 90° | 90° |
| Max. Current | 4 Amps | 4 Amps | 4 Amps | 4 Amps |
| Panel Mount Options | | | | |
| Snap-in | | | | • |
| Bushing | • | • | • | |
| PC Thru-hole | • | | | |



| SERIES | A | H | PL |
|---------------------|----------------|---------------|-----------|
| Switch Type | 4 & 5 Tumbler | 4 & 6 Tumbler | 5 Tumbler |
| Lock | Metal | Metal | Plastic |
| Cam | | | • |
| Miniature | | | • |
| Anti-static | • | | |
| Momentary | | | |
| Poles | 1 - 4 | 1 & 2 | |
| Indexing | 30°, 45° & 90° | 45° & 90° | 90° |
| Max. Current | 2.5 Amps | 12 Amps | |
| Panel Mount Options | | | |
| Snap-in | | | • |
| Bushing | • | • | |
| Thru-hole | • | | |



Y SERIES 4, 5 & 6 Tumbler Switchlocks

Features / Benefits

Anti-static switch—exceeds 20 KV DC static resistance
 Momentary models available
 Wire leads and harnesses available

Contact Rating:

4 AMPS @ 125 V AC or 28 V DC, 2 AMPS @ 250 V AC (UL/CSA)
 Electrical Life 10,000 make-and-break cycles at full load

Typical Applications

Point-of-sale terminals
 Cash registers
 Computers

| PART NUMBER | Function | Keying | Lock Type | Termination |
|---------------|-----------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------|----------------------|
| Y201132C203NQ | DP, 90°, keypull pos. 1 | Two nickel plated brass keys (4 & 5 tumbler) or two die cast zinc alloy keys with chrome plating (6 tumbler) | 4 Tumbler lock with detent | Solder lug with hole |
| Y1011U2C203NQ | SP, 90°, keypull pos. 1 & 2 | Two nickel plated brass keys (4 & 5 tumbler) or two die cast zinc alloy keys with chrome plating (6 tumbler) | 4 Tumbler lock with detent | Solder lug with hole |
| Y101132C203NQ | SP, 90°, keypull pos. 1 | Two nickel plated brass keys (4 & 5 tumbler) or two die cast zinc alloy keys with chrome plating (6 tumbler) | 4 Tumbler lock with detent | Solder lug with hole |



H SERIES 4 & 6 Tumbler Power Switchlocks

Features / Benefits

Positive detent
 Multi-pole and multi-position
 Snap-together assembly
 Power switching

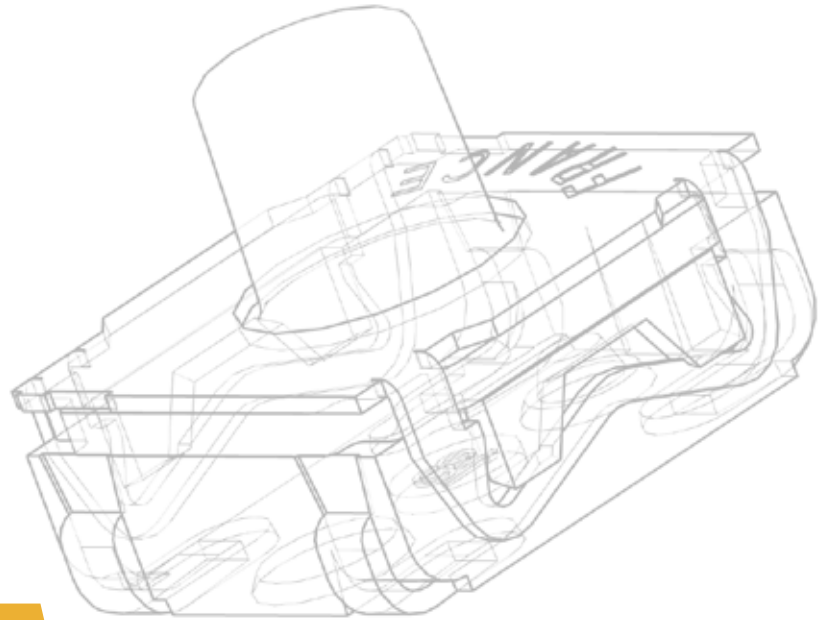
Contact Rating:

Silver: 12 AMPS @ 125 V AC, 6 AMPS @ 250 V AC, 1 AMP @ 125 V DC (UL/CSA)
 Gold: 0.4 VA Max. @ 20 V AC or DC Max.
 Electrical life 10,000 make-and-break cycles at full load

Typical Applications

Machine controls
 Elevators

| PART NUMBER | Function | Keying | Lock Type | Termination | Termination |
|---------------|--------------------------------------|------------------------------|----------------------------|---------------|-------------|
| H1011U2F205NQ | SP, 90° Index, keypull pos. 1 & 2 | Two nickel plated brass keys | 4 Tumbler lock with detent | Quick connect | Silver |
| H201132F205NQ | DP, 90° Index, keypull pos. 1 | Two nickel plated brass keys | 4 Tumbler lock with detent | Quick connect | Silver |
| H200AA2F205NQ | DP, 45° Index, keypull pos. 1, 2 & 3 | Two nickel plated brass keys | 4 Tumbler lock with detent | Quick connect | Silver |

**PRODUCT SELECTION GUIDE**

Tactile Switches

C&K offers a broad range of miniature tactile, ultra-miniature tactile and micro miniature tactile switches for printed circuit board mounting. Available in J bend, gull wing, illuminated, sealed, low-profile, low-noise, SMT and through hole versions, C&K's tactile switches are designed for the most demanding applications.



Surface Mount

| SERIES | KXT3 | KMT0 | KMT2 | KMR2-9 | KMS | PTS525 | PTS526 |
|----------------------------------|-----------------------------------|-------------------------------|-----------|-----------------------|---------------|----------------------|--------------------------|
| Size on PCB L x W (mm) | 3 x 2 | 3 x 2.6 | 3 x 2.6 | 4.2 x 2.8 | 4.2 x 3.55 | 5.2 x 5.2 | 5.2 x 5.2 |
| Total Height (mm) | 0.6 | 0.65 | 0.65 | 1.9 / 2.5 | 1.42 | 0.8 and 1.5 | 0.8 / 1.5 / 1.7 / 2.0 |
| Travel (mm) | 0.13 | 0.15 | 0.15 | 0.2 to 0.35 | 0.25 to 0.3 | 0.25 | 0.25 |
| Actuation Force (N) | 100 gf / 160 gf / 240 gf / 330 gf | 1.0 / 1.6 / 2.3 / 3.4 | 1.0 / 1.6 | 1.2 / 2.0 / 3.0 / 4.0 | 2.0 / 3.0 | 160 gf / 260 gf | 160 gf / 260 gf / 320 gf |
| Contact Type | Silver | Silver | Silver | Silver / Gold | Silver / Gold | Silver | Silver |
| Max. Voltage (V) | 15 | 32 | 32 | 32 | 32 | 15 | 12 |
| Max. Switching Power (VA) | 0.5 | 0.5 | 0.5 | 1 / 0.2 | 1 / 0.2 | 0.3 | 0.6 |
| Life Cycles | 300,000 / 500,000 | 300,000 / 600,000 / 1,000,000 | 150,000 | 100,000 / 300,000 | 100,000 | 200,000 to 1,000,000 | 150,000 to 500,000 |
| IP Rating | IP54 | IP68 | IP54 | IP40 / IP67 | IP40 | IP40 | IP40 |



Surface Mount

| SERIES | PTS530 | PTS540 | PTS810 | PTS815 | PTS820 | PTS830 | PTS840 |
|----------------------------------|-----------------------------------------------------|--------------------|-----------------------------------|--------------------------|--------------------|----------------------|-----------------|
| Size on PCB L x W (mm) | 4.5 x 4.5 | 3.7 x 3.7 | 4.2 x 3.2 | 4.2 x 3.2 | 3.9 x 2.9 | 3.5 x 2.6 | 3.5 x 3.55 |
| Total Height (mm) | 0.55 and 0.65 | 0.35 | 2.5 | 2.5 | 1.5 / 2.0 / 2.5 | 1.4 | 1.35 |
| Travel (mm) | 0.2 | 0.15 | 0.15 / 0.2 | 0.2 | 0.2 | 0.15 | 0.2 |
| Actuation Force (N) | 100 gf / 160 gf / 200 gf / 260 gf / 400 gf / 600 gf | 160 gf / 230 gf | 160 gf / 260 gf / 400 gf / 600 gf | 180 gf / 250 gf / 400 gf | 160 gf / 250 gf | 160 gf / 450 gf | 160 gf / 220 gf |
| Contact Type | Silver | Silver | Silver | Silver | Silver | Silver | Silver |
| Max. Voltage (V) | 12 | 12 | 16 | 12 | 12 | 12 | 12 |
| Max. Switching Power (VA) | 0.6 | 0.6 | 0.8 | 0.6 | 0.6 | 0.6 | 0.6 |
| Life Cycles | 150,000 to 1,000,000 | 300,000 to 500,000 | 50,000 to 150,000 | 100,000 | 100,000 to 200,000 | 200,000 to 1,000,000 | 100,000 |
| IP Rating | IP40 | IP40 | IP40 | IP40 | IP40 | IP40 | IP40 |



Surface Mount Thru-Hole Options

| SERIES | KSR | KSS | KSC4V2 | KSC1-10 | | KSC DCT |
|----------------------------------|------------------------|---------------|---------------------------------------|----------------------|------------|-----------|
| Size on PCB L x W (mm) | 7.15 x 3.8 / 7.3 x 3.8 | 5.5 x 4.4 | 2 holes ϕ 1.1 / 2 pads 1.5 x 0.8 | J 6.8 x 6.2 | G 10 x 6.2 | 6.8 x 6.2 |
| Total Height (mm) | 2.5 | 1.7 | 5.0* | | | 5.2 |
| Travel (mm) | 0.3 to 0.5 | 0.3 | 0.7* | 0.20 to 0.75 * | | 0.85 |
| Actuation Force (N) | 1.2 / 2.0 / 3.0 / 45 | 2 / 2.5 / 4 | 3.5* | 1.1 to 5.5 * | | 4.75 |
| Contact Type | Silver / Gold | Silver / Gold | Silver / Gold | Silver / Gold | | Silver |
| Max. Voltage (V) | 32 | 32 | 32 | 32 | | 32 |
| Max. Switching Power (VA) | 1 / 0.2 | 1 / 0.2 | 1 / 0.2 | 1 / 0.2 | | 1 |
| Life Cycles | 100,000 / 200,000 | 100,000 | 300,000 | 100,000 to 1,000,000 | | 300,000 |
| IP Rating | IP50 | IP40 | IP67 | IP67 | | IP67 |



Surface Mount Thru-Hole Options

| SERIES | KSC PF | KSC OF | KSC TE | KSC SLT | KSE | KT |
|----------------------------------|----------------------|----------------------|-------------------------|---------------|------------|---------------------------|
| Size on PCB L x W (mm) | 6.8 x 6.2 | 6.8 x 6.2 | 6.8 x 6.2 | 6.8 x 6.2 | 6.8 x 6.2 | SA 7.5 x 5 SA2 7.5 x 7 |
| Total Height (mm) | 5.2 | 5.2 | 3.5 | 5 | 3.1 / 4.3 | 6.6 / 7.11 with tab |
| Travel (mm) | 0.5 to 1.0 | 0.5 to 0.75 | 0.25 to 0.35 | 1.35 | 0.3 | 0.3 to 0.5 |
| Actuation Force (N) | 1.7 to 6.25 | 1.65 / 4 | 1.6 to 4 | 2.4 / 3.5 | 1.5 / 2.25 | 3 |
| Contact Type | Silver | Silver | Silver | Silver / Gold | Silver | Silver / Gold |
| Max. Voltage (V) | 32 | 32 | 24 | 32 | 32 | 50 |
| Max. Switching Power (VA) | 1 | 1 | 0.03 | 1 / 0.2 | 1 | 1 / 0.2 |
| Life Cycles | 300,000 to 1,000,000 | 300,000 to 1,000,000 | 5,000,000 to 10,000,000 | 200,000 | 300,000 | 100,000 |
| IP Rating | IP67 | IP 67 | IP67 | IP40 | IP67 | |



Surface Mount Thru-Hole Options

| SERIES | K5AT | K8 | K5V | KSF/KSI | KSA | KSA-V |
|----------------------------------|--------------|--------------|---------------------|-----------------------|-------------------|-----------------|
| Size on PCB L x W (mm) | G 8.4 x 10.8 | G 8.4 x 10.8 | 8 x 9 x 17 / 9 x 13 | 7.62 x 5.08 | 7.62 x 5.08 | 7.62 x 2.54 |
| Total Height (mm) | 6.1 | 6 | 9 / 13 | 2.6 | 4.7 button option | 8 |
| Travel (mm) | 0.5 | 0.45 | 1.2 | 0.3 to 0.5 | 0.3 to 0.5 | 0.3 to 0.5 |
| Actuation Force (N) | 4.0 | 4.0 | 4.0 | 1.3 / 1.6 / 3.0 / 5.0 | 1.3 / 3.0 / 5.0 | 1.3 / 3.0 / 5.0 |
| Contact Type | Gold | Silver | Gold | Silver / Gold | Silver / Gold | Silver / Gold |
| Max. Voltage (V) | 32 | 32 | 32 | 32 | 32 | 32 |
| Max. Switching Power (VA) | 1 | 1 | 1 | 1 / 0.2 | | |
| Life Cycles | 100,000 | 300,000 | 25,000 | 100,000 | 100,000 | 100,000 |
| IP Rating | IP40 | IP40 | IP40 | IP60 | IP60 | IP60 |



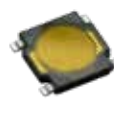
Surface Mount Thru-Hole Options

| SERIES | KSA MKII | KSL | KSL-V | KSJ | KSJ-V | PTS636 |
|----------------------------|---------------------|---------------|---------------|---------------|------------------|-----------------------------------|
| Footprint | 7.62 x 5.08 | 7.62 x 5.08 | 7.62 x 2.54 | 7.62 x 5.08 | 7.62 x 2.54 | 6 x 3.5 |
| Total Height (mm) | 4.7 | 9.9 | 8 | 6.65 | 8 | 2.5 / 4.3 / 5.0 |
| Travel (mm) | 0.3 to 0.5 | 0.3 to 0.5 | 0.3 to 0.5 | 0.55 to 0.7 | 0.55 to 0.7 | 0.25 to 0.30 |
| Actuation Force (N) | 1.3 / 3.0 / 5.0 | 1.3 / 3.0 | 1.3 / 3.0 | 2.0 / 3.0 | 2.0 / 3.0 | 130 gf / 180 gf / 250 gf / 320 gf |
| Contact Type | Silver / Gold | Silver / Gold | Silver / Gold | Silver / Gold | Silver / Gold | Silver |
| Max. Voltage (V) | 32 | 32 | 32 | 32 | 32 | 12 |
| Life Cycles | 100,000 / 1,000,000 | 100,000 | 100,000 | 100,000 | 100,000 / 30,000 | 20,000 to 100,000 |
| IP Rating | IP67 | IP60 | IP60 | IP60 | IP60 | IP40 |



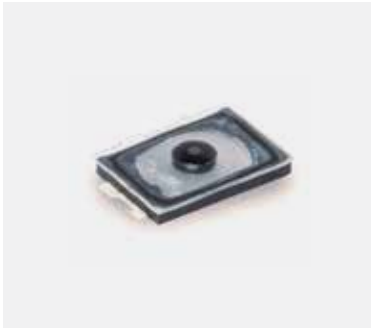
Surface Mount Thru-Hole Options

| SERIES | PTS641 | PTS645 | PTS645-V | PTS647 | PTS125 | ITS |
|---------------------|--------------------------|------------------------------------|-----------|--------------------------|------------------------|----------------------------|
| Footprint | 6,3 x 6.4 | 6 x 6 | 7.0 x 7.9 | 4.5 x 4.5 | 12 x 12 | Variety of sizes available |
| Total Height (mm) | 2.5 / 3.1 / 3.4 | 4.3 / 5.0 / 7.0 / 7.3 / 9.5 / 13.0 | 7.0 | 3.8 / 5.0 / 7.0 | 4.3 / 7.3 / 8.5 / 12.0 | 6.2 / 7.0 / 7.1 / 7.2 |
| Travel (mm) | 0.20 / 0.30 | 0.25 | 0.25 | 0.25 | 0.30 | 0.25 |
| Actuation Force (N) | 160 gf / 250 gf / 320 gf | 1.3 / 1.6 / 2.0 / 2.6 | 1.0 / 1.6 | 100 gf / 180 gf / 250 gf | 1.8 / 2.5 | 160 gf |
| Contact Type | Silver | Silver | Silver | Silver | Silver | Silver |
| Max. Voltage (V) | 12 | 12 | 12 | 12 | 12 | 12 |
| Life Cycles | 100,000 | 100,000 / 1,000,000 | 100,000 | 100,000 | 200,000 / 1,000,000 | 50,000 |
| IP Rating | IP40 | IP40 | IP40 | IP40 | IP40 | IP40 |



Surface Mount Thru-Hole Options

| SERIES | ILS | NANOT | PTS841 | RK | TLS |
|---------------------|----------------------------|--------------------------|-----------------|-----------------------------------------------------|----------------------|
| Footprint | Variety of sizes available | 2.1 x 1.65 / 2.2 x 1.7 | 3.6 x 3.5 | 4.5 x 4.5 / 4.2 x 3.2 / 3.5 x 2.6 | 8.6 x 8.4 |
| Total Height (mm) | 7.0 / 7.2 / 9.0 | 0.55 / 1.65 | 1.25 | 0.55 / 2.5 / 1.4 | 3.95 |
| Travel (mm) | 0.25 | 0.1 | 0.2 | 0.15 / 0.2 | 0.75 / 0.9 |
| Actuation Force (N) | 180 gf / 250 gf | 100 gf / 180 gf / 240 gf | 180 gf / 250 gf | 160 gf / 180 gf / 250 gf / 400 gf / 450 gf / 540 gf | 4 / 7 / 10 |
| Contact Type | Silver | Silver | Silver | Silver | Silver |
| Max. Voltage (V) | 12 | 15 | 12 | 12 to 15 | 16 |
| Life Cycles | 100,000 | 200,000 / 300,000 | 100,000 | 100,000 to 500,000 | 300,000 to 1,000,000 |
| IP Rating | IP40 | IP67 | IP40 | | IP54 |



KXT3 SERIES

Ultra Low Profile Top Actuated Tact Switches

Features / Benefits

Smallest footprint 3.0 x 2.0 mm
 0.6 mm thickness
 High number of cycles

Typical Applications

Wearable electronics
 In-ear headphones, earbuds
 Portable electronics
 Hearing aids

| PART NUMBER | Operating Force | Contact Material | Operating Life | Travel |
|-------------|-----------------|------------------|----------------|----------------|
| KXT 311 LHS | 100 ± 50 gf | Silver | 300,000 cycles | 0.13 ± 0.05 mm |
| KXT 321 LHS | 160 ± 50 gf | Silver | 500,000 cycles | 0.13 ± 0.05 mm |
| KXT 331 LHS | 240 ± 70 gf | Silver | 500,000 cycles | 0.13 ± 0.05 mm |



KMT0 SERIES

Nano-miniature SMT Top Actuated Tact Switches

Features / Benefits

3.0 x 2.06 mm footprint
 IP68
 Ultra low current capabilities

Typical Applications

Mobile phones
 Hearing aids
 MP3 accessories
 Bluetooth headset

| PART NUMBER | Operating Force | Contact Material | Operating Life | Travel |
|---------------|-----------------|------------------|----------------|---------------|
| KMT011NGJ LHS | 1.0 ± 0.25 N | Silver | 300,000 cycles | 0.15 ± 0.1 mm |
| KMT031NGJ LHS | 3.4 ± 0.25 N | Silver | 300,000 cycles | 0.15 ± 0.1 mm |
| KMT071NGJ LHS | 2.3 ± 0.25 N | Silver | 300,000 cycles | 0.15 ± 0.1 mm |



KMR SERIES

Microminiature SMT Top Actuated

Features / Benefits

IP40 or IP67 sealing
 Optional ground pin
 Ultra low current capabilities
 Heights: 1.9 mm & 2.5 mm

Typical Applications

Automotive
 Consumer
 Industrial electronics
 Medical equipment

| PART NUMBER | Operating Force | Contact Material | Operating Life | Travel |
|--------------|-----------------|------------------|----------------|---------------|
| KMR211G LFS | 1.2 ± 0.30 N | Silver | 200,000 cycles | 0.20 ± 0.1 mm |
| KMR621NG LFS | 2.0 ± 0.50 N | Silver | 200,000 cycles | 0.25 ± 0.1 mm |
| KMR73N1G LFS | 3.0 ± 0.75 N | Silver | 150,000 cycles | 0.25 ± 0.1 mm |



KMS SERIES
Microminiature SMT Side Actuated

Features / Benefits

Compact size
 Excellent tactile feel
 Positioning pegs for stability
 IP40 sealing

Typical Applications

Medical handheld monitors
 Consumer electronics
 Telecommunication networks

| PART NUMBER | Operating Force | Contact Material | Operating Life | Travel |
|--------------------|-----------------|------------------|----------------|----------------|
| KMS221G LFS | 2.0 ± 0.5 N | Silver | 100,000 cycles | 0.25 ± 0.15 mm |
| KMS231G LFS | 3.0 ± 0.6 N | Silver | 100,000 cycles | 0.30 ± 0.15 mm |



PTS526 SERIES
Microminiature SMT Top Actuated

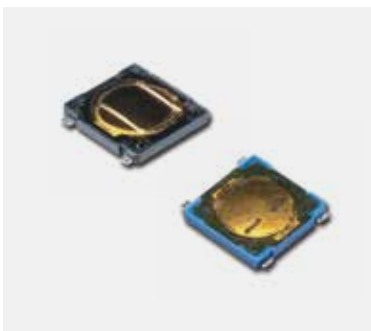
Features / Benefits

5.2 x 5.2 mm footprint
 Variable thickness
 Commercial grade

Typical Applications

IoT devices
 Home automation
 Remote controls

| PART NUMBER | Operating Force | Total Height | Operating Life |
|----------------------------------|-----------------|--------------|----------------|
| PTS526 SM 08 SMTR2 LFS | 160 gf | 0.8 mm | 500,000 cycles |
| PTS526 SK G 15J SMTR2 LFS | 250 gf | 1.5 mm | 200,000 cycles |
| PTS526 SP 20 SMTR2 LFS | 320 gf | 2.0 mm | 100,000 cycles |



PTS530 SERIES
Ultra Low Profile SMT Top Actuated

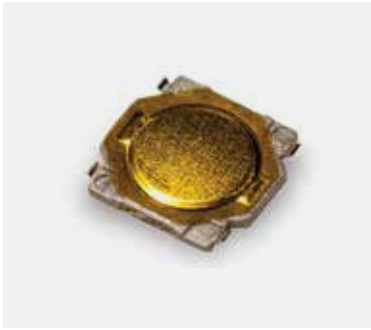
Features / Benefits

4.5 x 4.5 mm footprint
 0.55 mm thickness
 High number of cycles
 Symbol line identification

Typical Applications

MP3 accessories
 Bluetooth headset
 Remote controls
 Garage door opener

| PART NUMBER | Termination Style | Operating Force | Operating Life | Travel |
|---------------------------|-------------------|-----------------|------------------|-------------------------|
| PTS530GM055SMTRLFS | Gull wing | 160 ± 30 gf | 1,000,000 cycles | 0.2 mm - 0.1 /+ 0.15 mm |
| PTS530GK055SMTRLFS | Gull wing | 260 ± 30 gf | 200,000 cycles | 0.2 mm - 0.1 /+ 0.15 mm |



PTS540 SERIES
Microminiature SMT Top Actuated

Features / Benefits

3.7 x 3.7 mm footprint
 High number of cycles
 0.35 mm thickness

Typical Applications

MP3 accessories
 Bluetooth headset
 Remote controls

PART NUMBER

PTS540JM035SMTRLFS
PTS540JK035SMTRLFS

Total Height

0.35 mm
 0.35 mm

Operating Force

160 ± 50 gf
 230 ± 50 gf

Operating Life

500,000 cycles
 300,000 cycles

Travel

0.15 +/- 0.1 mm
 0.15 +/- 0.1 mm



PTS815 SERIES
Microminiature SMT Top Actuated

Features / Benefits

4.2 x 3.2 mm footprint
 2.5 mm thickness
 Commercial grade

Typical Applications

IoT devices
 Home automation
 Remote controls

PART NUMBER

PTS815 SJM 250 SMTR LFS
PTS815 SJK 250 SMTR LFS
PTS815 SJG 250 SMTR LFS

Actuator Color

White
 White
 Black

Operating Force

180 ± 50 gf
 250 ± 50 gf
 400 ± 100 gf

Operating Life

100,000 cycles
 50,000 cycles
 100,000 cycles



PTS820 SERIES
Microminiature SMT Top Actuated

Features / Benefits

3.9 x 2.9 mm footprint
 Three different heights
 High number of cycles
 Reduced footprint

Typical Applications

Control panels
 Nomad devices
 Remote controls
 Keyless entry system

PART NUMBER

PTS820J25MSMTRLFS
PTS820J25KSMTRLFS

Total Height

2.5 mm
 2.5 mm

Pegs

No
 No

Operating Force

160 ± 50 gf
 250 ± 50 gf

Operating Life

200,000 cycles
 100,000 cycles



PTS840 SERIES
Microminiature SMT Side Actuated

Features / Benefits

3.5 x 3.55 mm footprint
 Front PIP leads option for strong shear resistance
 ESD pin option

Typical Applications

Nomad devices
 Remote controls
 Personal health diagnostics
 Consumer electronics

| PART NUMBER | Operating Force | Operating Life | Ground | Termination Style | Pegs |
|---------------------|-------------------|----------------|--------|-------------------|------|
| PTS840PMSMTR LFS | 160 gf -40/+70 gf | 100,000 cycles | No | Pin in paste | No |
| PTS840GMPMTR LFS | 160 gf -40/+70 gf | 100,000 cycles | No | Gull wing | Yes |
| PTS840GKPSMTR LFS | 220 gf -70/+80 gf | 100,000 cycles | No | Gull wing | Yes |
| PTS840ESDPMSMTR LFS | 160 gf -40/+70 gf | 100,000 cycles | Yes | Pin in paste | No |



KSR SERIES
Microminiature SMT Top Actuated

Features / Benefits

4 actuation forces
 N.O. and N.C.
 Rubber actuator
 IP50 sealed

Typical Applications

Automotive
 Medical equipment
 Industrial electronics
 Smart meters

| PART NUMBER | Operating Force | Contact Material | Switch Function | Operating Life | Travel |
|----------------|-----------------|------------------|-----------------|----------------|----------------|
| KSR221G LFS | 2.2 N | Silver | Normally open | 100,000 cycles | 0.30 ± 0.15 mm |
| KSR231G LFS | 3.0 N | Silver | Normally open | 100,000 cycles | 0.35 ± 0.15 mm |
| KSR251G LFS | 4.5 N | Silver | Normally open | 100,000 cycles | 0.50 ± 0.15 mm |
| KSR223G NC LFG | 2.0 N | Gold | Normally closed | 50,000 cycles | 0.30 ± 0.15 mm |
| KSR221G NC LFS | 2.25 N | Silver | Normally closed | 30,000 cycles | 0.30 ± 0.15 mm |



KSS SERIES
Subminiature SMT Side Actuated

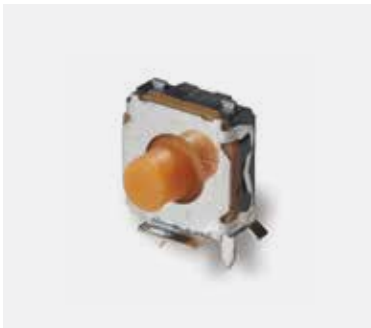
Features / Benefits

Low profile
 3 actuation forces
 IP40 sealed

Typical Applications

Mobile phone
 Industrial electronics
 Health diagnostic electronics

| PART NUMBER | Operating Force | Contact Material | Switch Function | Operating Life | Travel |
|--------------------|-----------------|------------------|-----------------|----------------|----------------|
| KSS221G LFS | 2.0 ± 0.5 N | Silver | Normally open | 100,000 cycles | 0.30 ± 0.15 mm |
| KSS231G LFS | 2.5 ± 0.5 N | Silver | Normally open | 100,000 cycles | 0.30 ± 0.10 mm |
| KSS241G LFS | 4.0 ± 1 N | Silver | Normally open | 100,000 cycles | 0.30 ± 0.15 mm |



KSC4V2 SERIES
Side Actuated Sealed Tact Switches

Features / Benefits

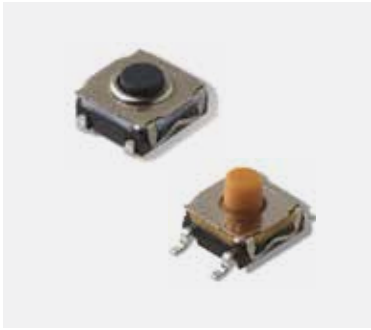
Full SMT compatible side actuated
 Haptic adaptability
 Pin in paste terminations
 IP67

Typical Applications

Automotive
 Industrial
 Telecommunication networks
 Network infrastructure and IT

| PART NUMBER | Operating Force | Contact Material | Operating Life | Travel |
|------------------------|-----------------|------------------|----------------|--------------|
| KSC441V2SPD LFS | 3.5 ± 1.0 N | Silver | 300,000 cycles | 0.7 ± 0.2 mm |

Other options: height, force, travel, operating life available on request



KSC SERIES
Sealed Tact Switches for SMT

Features / Benefits

Full SMT compatible side actuated
Haptic adaptability
Pin in paste terminations
IP67

Typical Applications

Automotive
Industrial
Telecommunication networks
Network infrastructure and IT

| PART NUMBER | Operating Force (Min /Max) | Actuator Height | Operating Life | Travel |
|------------------|----------------------------|-----------------|----------------|----------------|
| KSC241J LFS | 3.5 ± 0.9 N | 3.5 ± 0.2 mm | 300,000 cycles | 0.5 ± 0.2 mm |
| KSC321J LFS | 1.6 N | 3.47 ± 0.2 mm | 300,000 cycles | 0.2 +0.3 mm |
| KSC441J 70SH LFS | 4 ± 1 N | 5.2 ± 0.2 mm | 300,000 cycles | 0.75 ± 0.25 mm |
| KSC441J ST2 LFS | 3.4 ± 1 N | 5.2 ± 0.2 mm | 300,000 cycles | 0.35 ± 0.20 mm |
| KSC641J LFS | 3.4 ± 1 N | 7.7 ± 0.2 mm | 300,000 cycles | 0.4 ± 0.2 mm |
| KSC841J OL LFS | 3.4 ± 0.85 N | 4.9 ± 0.2 mm | 300,000 cycles | 0.4 ± 0.2 mm |
| KSC941J LFS | 3.4 ± 0.85 N | 7.7 ± 0.2 mm | 300,000 cycles | 0.4 ± 0.2 mm |



KSC-DCT SERIES
Dual Circuit Technology Tact Switches

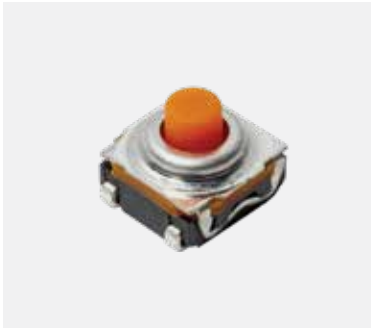
Features / Benefits

SPDT NC-NO function
Silicone actuator
J or G terminations
IP67

Typical Applications

Automotive
Medical equipment
Industrial electronics

| PART NUMBER | Operating Force | Contact Material | Operating Life | Travel |
|----------------------|-----------------|------------------|----------------|-------------------------|
| KSC441J DCT 70SH LFS | 4.75 ± 1.25 N | Silver | 300,000 cycles | 0.85 + 0.35 / - 0.25 mm |
| KSC441G DCT 70SH LFS | 4.75 ± 1.25 N | Silver | 300,000 cycles | 0.85 + 0.35 / - 0.25 mm |



KSC-PF SERIES
Potting Friendly Tact Switches

Features / Benefits

Extended cage
Silicone actuator
J or G terminations
IP67

Typical Applications

Automotive
Medical equipment
Industrial electronics

PART NUMBER

KSC422J 70SH LFS PF
KSC441G 70SH LFS PF
KSC461J 70SH LFS PF

Operating Force

1.8 ± 0.45 N
4 ± 1 N
6.25 ± 1.75 N

Contact Material

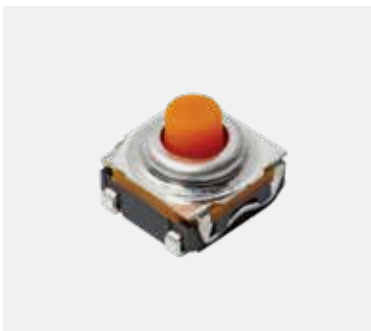
Silver
Silver
Silver

Operating Life

1,000,000 cycles
300,000 cycles
300,000 cycles

Travel

0.5 ± 0.25 mm
0.65 ± 0.25 mm
0.75 ± 0.25 mm



KSC OF SERIES
Overload Friendly Tactile Switches

Features / Benefits

6.2 x 6.2 x 5.1 mm form factor
SMT versions J leads
Life time of 300,000 cycles at 20N actuation and 1 time overload at 200N

Typical Applications

Consumer
Power tool
Industrial
Medical
Automotive

PART NUMBER

KSC421G 70SH LFS OF
KSC441J 70SH LFS OF

Operating Force

1.65
4

Contact Material

Silver
Silver

Operating Life

300,000 cycles
300,000 cycles

Travel

0.5
0.5



KSC TE SERIES
Tireless Endurance Tactile Switches

Features / Benefits

6.2 x 6.3 mm form factor
SMT versions J leads
1.6N, 2.8N & 4N actuation forces

Typical Applications

Elevator
Game controller
Industrial
Mouse and peripherals for computers
Barcode scanner

PART NUMBER

KSC2 TE 01J LFS
KSC2 TE31J LFS
KSC2 TE 41J LFS

Operating Force

1.6
2.8
4

Contact Material

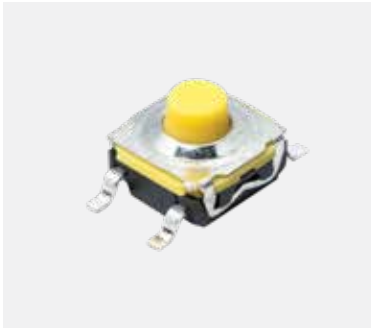
Silver
Silver
Silver

Operating Life

10,000,000 cycles
5,000,000 cycles
5,000,000 cycles

Travel

0.25
0.30
0.35



KSC SLT SERIES
Long Travel Low Sound Tactile Switches

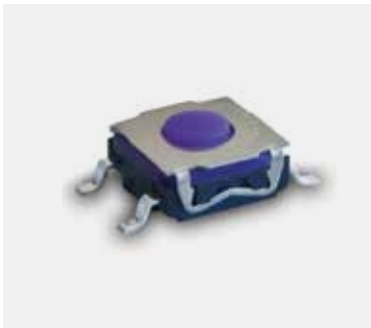
Features / Benefits

Actuator height 5.0 mm
 IP40
 6.2 x 6.2 form factor

Typical Applications

Automotive interior

| PART NUMBER | Operating Force | Contact Material | Operating Life | Travel |
|------------------|-----------------|------------------|----------------|--------|
| KSC SLT 221G LFS | 2.4 | Silver | 200,000 cycles | 1.35 |
| KSC SLT 223J LFS | 2.4 | Gold | 200,000 cycles | 1.35 |
| KSC SLT 241J LFS | 3.2 | Silver | 200,000 cycles | 1.35 |



KSE SERIES
High Performance Sealed Tact Switches

Features / Benefits

Low profile
 IP67
 Height 3.1 mm & 4.3 mm

Typical Applications

Smart meters
 Home appliances / Consumer electronics
 Industrial electronics
 Telecommunications

| PART NUMBER | Operating Force | Operating Life | Travel |
|-------------|-----------------|----------------|-------------------|
| KSEM31J LFS | 1.5 ± 0.5 N | 300,000 cycles | 0.3 + 0.1/-0.2 mm |
| KSEK43G LFS | 2.25 ± 0.75 N | 300,000 cycles | 0.30 ± 0.2 mm |



KT SERIES
SMT Tact Switches

Features / Benefits

Rubber or hard plastic actuator
Press fit or snap fit caps
Easy to pick & place with top plate tab

Typical Applications

Telecommunications
Computer products
Instrumentation

| PART NUMBER | Actuator | Orientation | Mounting Bracket | Contact Material | Termination |
|---------------------|--------------|---------------|-----------------------------|------------------|-------------|
| KT11 B2 SAM 34 LFS | Soft 2.24 mm | Side actuated | | Silver | SMT |
| KT11 P3 SA1M 34 LFS | Hard 1.12 mm | Side actuated | Front solder pad | Silver | SMT |
| KT11 P4 SA2M 35 LFG | Hard 3.96 mm | Side actuated | Solder pad and pick & place | Gold | SMT |
| KT11 B0 SA3M 34 LFS | Soft flush | Side actuated | Pick and place tab | Silver | SMT |
| KT11 P3 SM 34 LFS | Hard 1.12 mm | Top actuated | Gull wing | Silver | SMT |



PTS641 SERIES
Miniature SMT Top Actuated

Features / Benefits

6.3 x 6.3 mm footprint
Multiple heights
Ground pin option

Typical Applications

Metering
White goods
Home and garden equipment

| PART NUMBER | Total Height | Operating Force | Operating Life | Ground Pin |
|--------------------|--------------|-----------------|----------------|------------|
| PTS641SM31SMTR2LFS | 3.1 mm | 160 gf | 100,000 cycles | No |
| PTS641TK25SMTR2LFS | 2.5 mm | 250 gf | 100,000 cycles | No |



PTS645 SERIES
Miniature SMT / THT Top / Side Actuated

Features / Benefits

Compact size 6 x 6 mm
 Variety of actuator lengths
 Choice of actuator force

Typical Applications

Computer products
 Industrial
 Consumer products
 Instrumentation

PART NUMBER

PTS645SL43SMTR92 LFS

PTS645VH58-2 LFS

Total Height

4.3 mm

6.2 mm

Operating Force

130 gf

200 gf

Operating Life

100,000 cycles

100,000 cycles

Termination

SMT

Vertical



PTS647 SERIES
4.5 mm Tact Switches

Features / Benefits

Compact size 4.5 x 4.5 mm
 SMT terminals
 Different actuator heights
 Choice of actuation forces

Typical Applications

Consumer
 Industrial control panels
 Computer products

PART NUMBER

PTS647SN50SMTR2 LFS

Total Height

5.0 mm

Operating Force

100 gf

Operating Life

100,000 cycles

Travel

0.25 ± 0.15 mm



PTS125 SERIES
Miniature SMT Top Actuated

Features / Benefits

12 x 12 mm
 Four different heights
 THT and SMT termination
 Snap fit actuator option

Typical Applications

Computer products
 Industrial
 Consumer products
 Instrumentation

PART NUMBER

PTS125SJM73 SMTR-2 LFS

PTS125SK43-2 LFS

Total Height

7.3 mm

4.3 mm

Operating Force

180 gf

250 gf

Operating Life

200,000 cycles

200,000 cycles

Termination

SMT

THT



ITS SERIES
Illuminated Pushbuttons

Features / Benefits

Vertical and right angle
Thru-hole and SMT models
Multiple caps and legends
Several LED colors and bi-color options

Typical Applications

Consumer electronics
Server / Storage
Medical devices
Test / Measurement / Instrumentation

| PART NUMBER | LED Color | Mounting Style / Termination | Operating Life | Operating Force |
|-------------|----------------|----------------------------------------|----------------|-----------------|
| ITS10FV1ST | Red | Vertical thru-hole | 50,000 cycles | 160gf ± 50 gf |
| ITS13FV2SR | Red / Green | Vertical SMT gull wing | 50,000 cycles | 160gf ± 50 gf |
| ITS50FV3SR | White | Vertical SMT gull wing with J bend LED | 50,000 cycles | 160gf ± 50 gf |
| ITS23FR1ST | Yellow / Green | Right angle thru-hole | 50,000 cycles | 160gf ± 50 gf |
| ITS40FR2ST | Blue | Right angle thru-hole 2.5 mm leads | 50,000 cycles | 160gf ± 50 gf |



ILS SERIES
Integrated LED Tact Switches

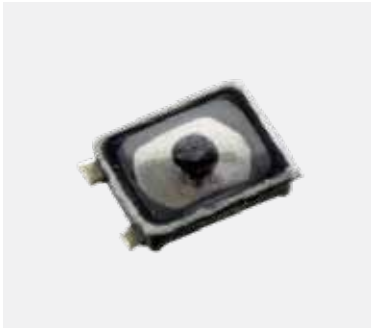
Features / Benefits

Red, yellow green, blue, white and green LED
IP40
THT versions

Typical Applications

Video broadcast systems
Servers
Software defined radio/ receivers

| PART NUMBER | LED Color | Mounting Style / Termination | Operating Life | Operating Force |
|-------------|-----------|------------------------------|------------------|-----------------|
| ILSTC18060 | 7N | Brass | 500,000 cycles | 0.9 mm |
| ILSTC25060 | 10N | Brass | 300,000 cycles | 0.9 mm |
| ILSTB18010 | 4N | Brass | 1,000,000 cycles | 0.9 mm |
| ILSTB25030 | 4N | Brass | 1,000,000 cycles | 0.75 mm |
| ILSTB18050 | 6N | Brass | 500,000 cycles | 0.75 mm |



NANOT SERIES
Nano Size Tact Switches for SMT

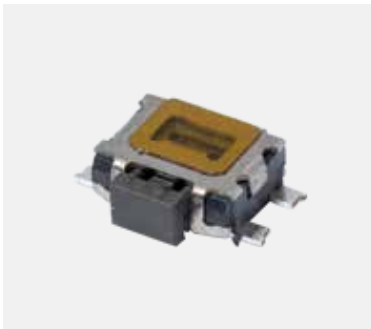
Features / Benefits

SMT and PIP versions
 2.1 x 1.65 x 0.55 mm & 2.2 x 1.7 x 1.65 mm form factor
 IP67

Typical Applications

Hearing aids
 Sport & health monitoring watches
 IoT
 Headsets

| PART NUMBER | Operating Force | Contact Material | Operating Life | Travel |
|-------------|-----------------|------------------|----------------|--------|
| NANOT100AS | 100 gf | Copper alloy | 200,000 cycles | 0.1 mm |
| NANOT160AS | 160 gf | Copper alloy | 300,000 cycles | 0.1 mm |
| NANOT240AS | 240 gf | Copper alloy | 200,000 cycles | 0.1 mm |
| NANOT240BP | 240 gf | Copper alloy | 200,000 cycles | 0.1 mm |
| NANOT160BS | 160 gf | Copper alloy | 300,000 cycles | 0.1 mm |



PTS841 SERIES
Microminiature SMT Side Actuated

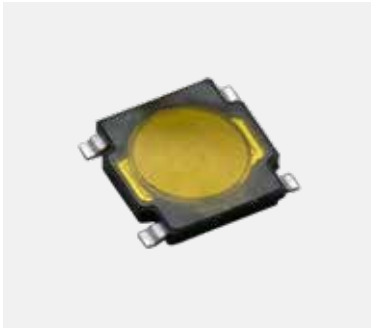
Features / Benefits

3.6 x 3.5 form factor
 Height 1.25 mm
 IP40

Typical Applications

IoT devices
 Portable devices
 Remote controls
 Wearables

| PART NUMBER | Operating Force | Operating Life | Ground | Termination Style | Pegs |
|-------------------------|-----------------|----------------|--------|-------------------|------|
| PTS841 GM SMTR LFS | 180 gf | 100,000 cycles | No | Gull wing | No |
| PTS841 GMP SMTR LFS | 180 gf | 100,000 cycles | No | Gull wing | Yes |
| PTS841 GKP SMTR LFS | 250 gf | 100,000 cycles | No | Gull wing | Yes |
| PTS841 ESD GK SMTR LFS | 250 gf | 100,000 cycles | Yes | Gull wing | No |
| PTS841 ESD GMP SMTR LFS | 180 gf | 100,000 cycles | Yes | Gull wing | Yes |



RK SERIES

Microminiature SMT Top Actuated Tact Switches

Features / Benefits

Low profile & microminiature package
SMT termination
Hard actuator

Typical Applications

Keyfob
Navigation
Health monitoring

PART NUMBER

RKA2SGM055SMTR LFS

RKA2SGK055SMTR LFS

RKB2SJK250SMTR LFS

RKB2SJG250SMTR LFS

RKC GG140 SMTR LFS

Operating Force

0.55 mm

0.55 mm

2.5 mm

2.5 mm

1.4 mm

Contact Material

160 gf

250 gf

250 gf

400 gf

450 gf

Operating Life

500,000 cycles

200,000 cycles

50,000 cycles

100,000 cycles

200,000 cycles

Travel

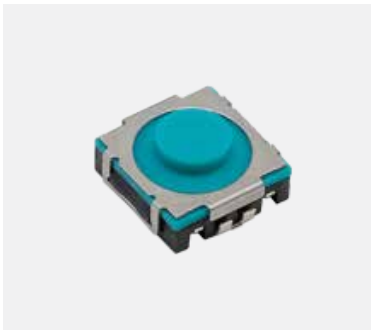
0.2 mm

0.2 mm

0.2 mm

0.2 mm

0.15 mm



TLS SERIES

Soft Sound Tact Switches

Features / Benefits

Soft sound and long travel
Soft actuator & pre-travel for an easier tolerance management with possible pre-load
SMT versions J leads

Typical Applications

Automotive interior controls

PART NUMBER

RKA2SGM055SMTR LFS

RKA2SGK055SMTR LFS

RKB2SJK250SMTR LFS

RKB2SJG250SMTR LFS

RKC GG140 SMTR LFS

Operating Force

7N

10N

4N

4N

6N

Contact Material

Brass

Brass

Brass

Brass

Brass

Operating Life

500,000 cycles

300,000 cycles

1,000,000 cycles

1,000,000 cycles

500,000 cycles

Travel

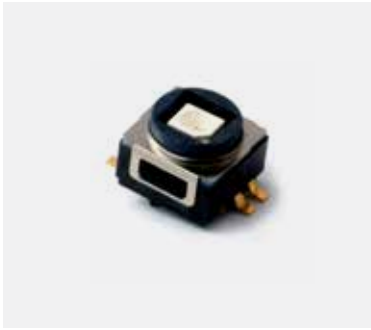
0.9 mm

0.9 mm

0.9 mm

0.75 mm

0.75 mm



K5AT SERIES
Illuminated Tact Switches

Features / Benefits

High bright LEDs
Reduced space usage on board

Typical Applications

Network infrastructure, servers
Medical

| PART NUMBER | Operating Force | Contact Material | LED | Travel | Termination |
|--------------|-----------------|------------------|-------|--------|-------------|
| K5AT WH 43 G | 4 N | Gold | White | 0.5 mm | SMT |
| K5AT GA 43 G | 4 N | Gold | Green | 0.5 mm | SMT |



K8 SERIES
Lighted SMT Tact Switches with Rugged LED Mounting Process

Features / Benefits

LED qualified for automotive applications
Various LED options
No light perturbation
Sound and haptic
Various climatic classes

| PART NUMBER | Operating Force | Operating Life | Travel |
|--------------|-----------------|----------------|----------------|
| K8xx41G LFS* | 4 N | 300,000 cycles | 0.45 ± 0.15 mm |



K5V SERIES
Illuminated Tact Switches

Features / Benefits

High bright LEDs
Reduced space usage on board
Excellent ergonomics

Typical Applications

Network infrastructure, servers
Automotive
Medical

| PART NUMBER | Operating Force | Contact Material | LED | Travel | Termination |
|------------------|-----------------|------------------|--------------|--------|--------------|
| K5V 1 BU 43 T | 4 N | Gold | Blue | 1.2 mm | PC thru-hole |
| K5V 1 BA 43 T P3 | 4 N | Gold | Blue-Amber | 1.2 mm | PC thru-hole |
| K5V 1 YG 43 T | 4 N | Gold | Yellow-Green | 1.2 mm | PC thru-hole |
| K5V 5 WH 43 G | 4 N | Gold | White | 1.2 mm | SMT |
| K5V 4 BU 43 G P3 | 4 N | Gold | Blue | 1.2 mm | SMT |



KSA / KSJ SERIES
High Performance Sealed Tact Switches

Features / Benefits

Designed for automatic or manual insertion
 Cambered terminals to ensure self retention
 Large choice of caps

Typical Applications

Automotive
 Industrial
 Telecommunication networks

PART NUMBER

KSA0M411 LFTR
KSA0M211 LFTR
KSJ0M41180SH LFTR

Operating Force

3 ± 0.75 N
 1.4 ± 0.4 N
 3.3 ± 0.8 N

Contact Material

Silver
 Silver
 Silver

Operating Life

100,000 cycles
 100,000 cycles
 100,000 cycles

Travel

0.6 ± 0.2 mm
 0.5 ± 0.2 mm
 0.55 ± 0.25 mm



PTS636 SERIES
6.0 x 3.5 Top Actuated

Features / Benefits

6.0 x 3.5 mm footprint
 Multiple heights
 THT or SMT type
 Commercial grade

Typical Applications

IoT devices
 Home automation
 Remote controls

PART NUMBER

PTS636 SK25 SMTR LFS
PTS636 SM43J SMTR LFS
PTS636 SL50 LFS

Total Height

2.5 mm
 4.3 mm
 5.0 mm

Lead shape

Gull wing
 J lead
 THT

Operating Force

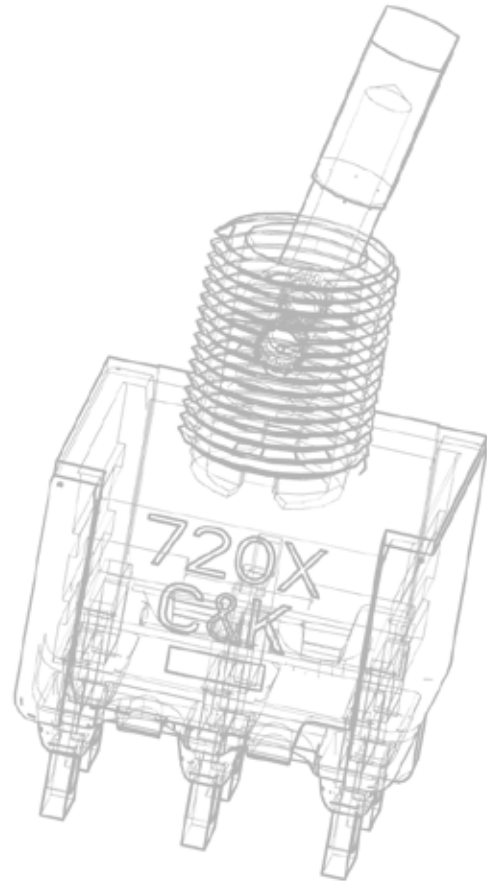
250 ± 50 gf
 180 ± 50 gf
 130 ± 50 gf

Operating Life

100,000 cycles
 50,000 cycles
 50,000 cycles

Travel

0.25 mm ± 0.1 mm
 0.30 mm ± 0.1 mm
 0.30 mm ± 0.1 mm

**PRODUCT SELECTION GUIDE**

Toggle Switches

A toggle switch is an electrical switch that opens and closes an electrical circuit by moving a lever back and forth. C&K's large selection of toggle switches includes low voltage miniature, subminiature, and ultra-miniature models, on up to high power 25A versions. With printed circuit board, SMT and bushing options, C&K toggle switches feature vertical, right angle and vertical right angle mounting brackets.



| SERIES | 7000 | MILITARY | E | ET | T | GT | 9000 | PT | ILT |
|---------------------------------------|---------------------------|-------------|--------------------|--------------------|--------------------|---------------------------|---------|---------------------------|---------|
| Switch Type | Miniature | Miniature | Miniature | Sub-miniature | Sub-miniature | Ultraminiature | Power | Sealed power | Power |
| Poles / Throws | SPDT / DPDT / 3PDT / 4PDT | SPDT / DPDT | SPDT / DPDT / 3PDT | SPST / SPDT / DPDT | SPST / SPDT / DPDT | SPST / SPDT / DPST / DPDT | DPDT | SPST / SPDT / DPST / DPDT | SPST |
| Maximum Current: Silver / Gold | 5 Amps | 5 Amps | 7.5 Amps / 5 Amps | 3 Amps / 2 Amps | 3 Amps / 2 Amps | 0.4 VA | 10 Amps | 25 Amps | 20 Amps |
| Process Sealed | | | • | • | | • | | IP68 | |
| PCB Mount Options | | | | | | | | | |
| Vertical | • | • | • | • | • | • | • | | |
| Right Angle | • | • | • | • | • | • | | | |
| Vertical Right Angle | • | • | • | • | • | • | • | | |
| Surface Mount Options | | | | | | | | | |
| Vertical | | | | | | • | | | |
| Right Angle | | | | • | | • | | | |
| Panel Mount Options | | | | | | | | | |
| Rear Mount | • | • | • | | • | | • | • | • |
| Terminations | | | | | | | | | |
| PCB Thru-hole | • | • | • | • | • | • | • | | |
| Wire Wrap | • | | • | • | • | | | | |
| Solder Lug | • | • | • | | • | | • | • | |
| Quick Connect | • | | • | | | | • | • | • |
| Screw Lug | | | | | | | | • | |
| Other Available Options | | | | | | | | | |
| Support Brackets | • | • | • | • | • | • | • | | |
| Snap-in Retention | • | | • | • | | | | | |
| ESD Protection | • | | • | • | • | | | | |
| Tape & Reel | | | | • | | • | | | |
| Bushing Options | | | | | | | | | |
| 10-48 | | | | | • | | | | |
| 1/4-40 | • | • | • | | • | | • | | |
| 15/32 | • | | | | | | • | • | |
| M6P 0.75 (Metric) | • | | | | | | | | |



7000 SERIES
Miniature Toggle Switches

Features / Benefits

Multi-pole and multi-position
Wide variety of actuator and termination options
Epoxy terminal-seal compatible with bottom wash cleaning

Contact Rating:

Gold 0.4 VA max. @ 20 V AC or DC max.
Silver 5 AMPS @ 120 V AC or 28 V DC, 2 AMPS @ 250 V AC AC

Typical Applications

Telecommunications
Instrumentation
Medical equipment

| PART NUMBER | Function | Actuator | Bushing | Mounting Style / Termination | Contact Material | Electrical Life |
|-------------|-----------------|------------------------------------|-----------------------------|------------------------------|------------------|-----------------|
| 7101SYZQE | SPDT On-None-On | Round, .420" high | .350" high, threaded keyway | Solder lug | Silver | 100,000 cycles |
| 7201SYZQE | DPDT On-None-On | Round, .420" high | .350" high, threaded keyway | Solder lug | Silver | 100,000 cycles |
| 7103SYZQE | SPDT On-Off-On | Round, .420" high | .350" high, threaded keyway | Solder lug | Silver | 40,000 cycles |
| 7101SYCQE | SPDT On-None-On | Round, .420" high | .350" high, threaded keyway | PC thru-hole | Silver | 100,000 cycles |
| 7101P3YZQE | SPDT On-None-On | Flatted, anti-rotation, .450" high | .350" high, threaded keyway | Solder lug | Silver | 100,000 cycles |



MILITARY SERIES
MIL-S-83731 Toggle Switches

Features / Benefits

Qualified to MIL-S-83731
50 μ inch selective gold contact plating
Epoxy sealed terminals for process compatibility

Typical Applications

Industrial / Process control
Military / Aerospace
Commercial aircraft
Network systems
Mass transportation

| PART NUMBER | Function | Actuator | Bushing | Mounting Style / Termination | Contact Material | Electrical Life |
|---------------|------------------|-------------------|-----------------------------|------------------------------|-----------------------------------------|-----------------|
| M83731/9-231 | SPDT On-None-On | Round, .420" high | .300" high, threaded keyway | Panel mount, Solder lug | Gold over nickel over silver over brass | 20,000 cycles |
| M83731/9-211 | SPDT On-Off-On | Round, .420" high | .300" high, threaded keyway | Panel mount, Solder lug | Gold over nickel over silver over brass | 20,000 cycles |
| M83731/9-271 | SPDT Mom-Off-Mom | Round, .420" high | .300" high, threaded keyway | Panel mount, Solder lug | Gold over nickel over silver over brass | 20,000 cycles |
| M83731/9-261 | SPDT On-None-Mom | Round, .420" high | .300" high, threaded keyway | Panel mount, Solder lug | Gold over nickel over silver over brass | 20,000 cycles |
| M83731/10-231 | DPDT On-None-On | Round, .420" high | .300" high, threaded keyway | Panel mount, Solder lug | Gold over nickel over silver over brass | 20,000 cycles |



E SERIES Sealed Miniature Toggle Switches

Features / Benefits

Sealed against solder and cleaning process contaminants
 UL 94V-0 Nylon case and bushing
 ESD protection available

Typical Applications

Telecommunications
 Instrumentation
 Medical equipment

Contact Rating:

Gold 0.4 VA max. @ 20 V AC or DC max
 Gold over silver 0.4 VA MAX @20 V AC or DC MAX.,
 7.5 AMPS @125 V AC or 28 V DC, 3 AMPS @ 250 V AC DC
 Silver 7.5 AMPS @ 125 V AC or 28 V DC, 3 AMPS @ 250 V AC

| PART NUMBERS | Function | Actuator | Bushing | Mounting Style / Termination | Contact Material | Electrical Life |
|--------------|---------------------|------------|------------------------|------------------------------------|------------------|-----------------|
| E101MD1ABE | SPDT, On-None-On | .300" high | .250" high, unthreaded | Right angle, PC thru-hole | Gold | 40,000 cycles |
| E105SD1CBE | SPDT, Mom.-Off-Mom. | .500" high | .250" high, unthreaded | PC thru-hole | Gold | 40,000 cycles |
| E101MD1AV2GE | SPDT, On-None-On | .300" high | .250" high, unthreaded | Vertical right angle, PC thru-hole | Gold over silver | 40,000 cycles |
| E101MD1AQE | SPDT, On-None-On | .300" high | .250" high, unthreaded | Right angle, PC thru-hole | Silver | 40,000 cycles |
| E103MD1ABE | SPDT, On-Off-On | .300" high | .250" high, unthreaded | Right angle, PC thru-hole | Gold | 40,000 cycles |



ET SERIES Sealed Subminiature Toggle Switches

Features / Benefits

Sealed against solder and cleaning process contaminants
 ESD protection available
 Thru-hole and surface mount models
 Compact size and small footprint save PCB space

Typical Applications

Telecommunications
 Instrumentation
 Medical equipment

Contact Rating:

Gold 0.4 VA MAX. @ 20 V AC or DC MAX.
 Silver 3 AMPS @ 120 V AC or 28 V DC

| PART NUMBER | Function | Actuator | Bushing | Mounting Style / Termination | Contact Material | Electrical Life |
|-------------|--------------------|------------|------------------------|------------------------------|------------------|-----------------|
| ET01MD1SAPE | SPDT, On-None-On | .240" high | .177" high, unthreaded | Right angle, surface mount | Gold, matte tin | 60,000 cycles |
| ET01MD1CBE | SPDT, On-None-On | .240" high | .177" high, unthreaded | PC thru-hole | Gold | 60,000 cycles |
| ET01MD1ABE | SPDT, On-None-On | .240" high | .177" high, unthreaded | Right angle, PC thru-hole | Gold | 60,000 cycles |
| ET08LD1CBE | SPDT, On-None-Mom. | .320" high | .177" high, unthreaded | PC thru-hole | Gold | 30,000 cycles |
| ET21MD1AQE | DPDT, On-None-On | .240" high | .177" high, unthreaded | Right angle, PC thru-hole | Silver | 60,000 cycles |



T SERIES
Subminiature Toggle Switches

Features / Benefits

Compact size—small footprint
Single and double pole models
PC and panel mount options available

Contact Rating:

Gold 0.4 VA MAX. @ 20 V AC or DC MAX.
Silver options up to 3 AMPS @ 120 V AC or 28 V DC

Typical Applications

Telecommunications
Instrumentation
Medical equipment

| PART NUMBER | Function | Actuator | Bushing | Mounting Style / Termination | Contact Material | Electrical Life |
|-------------|--------------------|------------|------------------------------|------------------------------------|------------------|-----------------|
| T102SHZQE | SPDT Off-None-On | .370" high | .220" high, threaded, flat | Solder lug | Silver | 30,000 cycles |
| T101MH9ABE | SPDT On-None-On | .210" high | .220" high, unthreaded, flat | Right angle, PC thru-hole | Gold | 60,000 cycles |
| T105LH9ABE | SPDT Mom.-Off-Mom. | .290" high | .220" high, unthreaded, flat | Right angle, PC thru-hole | Gold | 30,000 cycles |
| T101MH9AVBE | SPDT On-None-On | .210" high | .220" high, unthreaded, flat | Vertical right angle, PC thru-hole | Gold | 60,000 cycles |
| T211MH9V3BE | DPDT On-On-On | .210" high | .220" high, unthreaded, flat | Vertical mount V-bracket | Gold | 30,000 cycles |



GT SERIES
Sealed Subminiature Toggle Switches

Features / Benefits

Sealed against solder and cleaning process contaminants
Ultraminiature size, smallest footprint available
Thru-hole and surface mount models
High temperature materials (UL 94V-0)
Contact material gold over nickel

Typical Applications

Telecommunications
Small instrumentation

| PART NUMBER | Function | Mounting Style / Termination | Actuation | Contact Rating | Electrical Life |
|-------------|------------------|------------------------------|------------|----------------------------------|-----------------|
| GT11MSABETR | SPDT, On-None-On | Right angle, surface mount | Horizontal | 0.4 VA max. @ 20 V AC or DC max. | 40,000 cycles |
| GT11MCBE | SPDT, On-None-On | PC thru-hole | | 0.4 VA max. @ 20 V AC or DC max. | 40,000 cycles |
| GT23MAVBE | DPDT, On-Off-On | Right angle, PC thru-hole | Vertical | 0.4 VA max. @ 20 V AC or DC max. | 40,000 cycles |
| GT11MSCBETR | SPDT, On-None-On | Surface mount | Horizontal | 0.4 VA max. @ 20 V AC or DC max. | 40,000 cycles |



9000 SERIES
Power Toggle Switches

Features / Benefits

Power ratings up to 10 AMPS
Locking lever options available
Wide variety of actuator styles

Typical Applications

Shut-off switch
Small equipment
Industrial/ Process control
Professional instrumentation
Network systems

| PART NUMBER | Function | Actuator | Bushing | Mounting Style / Termination | Contact Material | Electrical Life |
|-------------|------------|---------------------------|-----------------------------|--------------------------------------------|------------------|-----------------|
| 9221K1Z4QD | DPDT On-On | Locking lever, .680" high | .312" high, threaded keyway | Panel mount, Quick connect terminals | Silver | 25,000 cycles |
| 9221SH3Z4QD | DPDT On-On | Round, .410" high | .296" high, flat | Panel mount, Quick connect terminals | Silver | 25,000 cycles |
| 9201KAV2QE | DPDT On-On | Locking lever, .650" high | .312" high, threaded keyway | PCB mount, Vert. right angle, PC thru-hole | Silver | 25,000 cycles |
| 9201KZQE | DPDT On-On | Locking lever, .650" high | .312" high, threaded keyway | Panel mount, Solder lug | Silver | 25,000 cycles |



PT SERIES
Sealed Power Toggle Switches

Features / Benefits

IP66 / IP68 versatile rating to withstand harsh outdoor environments, intense, wet weather, wind blown rain, dust, dirt
UL 61058-1 certified has global acceptance with no additional testing needed
Integrated panel seal for extra protection
Superior oil and fuel resistance
High strength, heat resistant housing designed for demanding applications subjected to vibration and harsh conditions

Typical Applications

Off-road, construction / agricultural vehicles
Material handling equipment
Articulating, scissor and bucket lift controls
Outdoor industrial equipment
Lift gate controls

| PART NUMBER | Function | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|-------------|-----------------|----------|------------------------------|------------------|-----------------|
| PT101SSQ | SP, On-None-On | Standard | Screw terminal | Silver | 10,000 cycles |
| PT103SQQ | SP, On-Off-On | Standard | Quick connect .250" | Silver | 10,000 cycles |
| PT201SZQ | DP, On-None-On | Standard | Solder terminal | Silver | 10,000 cycles |
| PT202SSQ | DP, On-None-Off | Standard | Screw terminal | Silver | 10,000 cycles |
| PT208SSQ | DP, On-None-Mom | Standard | Screw terminal | Silver | 10,000 cycles |



ILT SERIES
Illuminated Toggle Switches

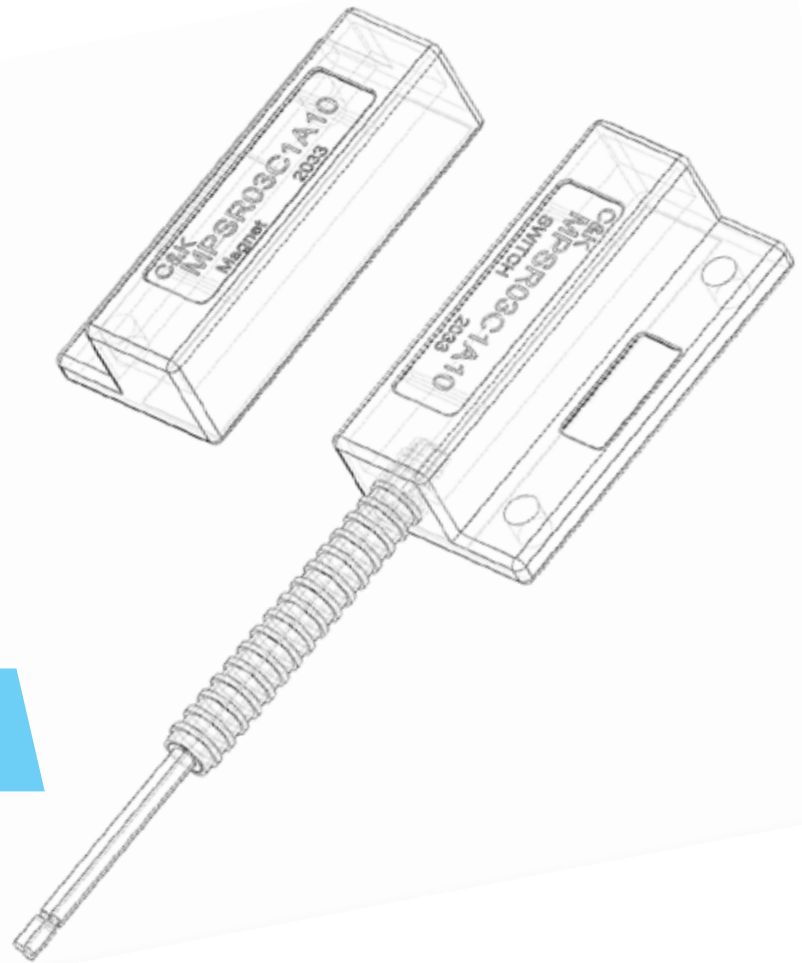
Features / Benefits

LED built in to toggle handle
 6 LED color options to choose from
 Electrical ratings up to 20 Amps

Typical Applications

Instrumentation
 Medical equipment
 Detection
 Control panels
 Heavy equipment

| PART NUMBER | Function | Actuator | Bushing | Mounting Style / Termination | Contact Material | Electrical Life |
|-------------|----------|-------------|---------|------------------------------|------------------|-----------------|
| ILT01 | On-Off | Illuminated | 12.2 | Panel / Quick connect | Silver | 10,000 cycles |
| ILT02 | On-Off | Illuminated | 12.2 | Panel / Quick connect | Silver | 10,000 cycles |
| ILT03 | On-Off | Illuminated | 12.2 | Panel / Quick connect | Silver | 10,000 cycles |
| ILT04 | On-Off | Illuminated | 12.2 | Panel / Quick connect | Silver | 10,000 cycles |
| ILT05 | On-Off | Illuminated | 12.2 | Panel / Quick connect | Silver | 10,000 cycles |
| ILT06 | On-Off | Illuminated | 12.2 | Panel / Quick connect | Silver | 10,000 cycles |



PRODUCT SELECTION GUIDE

SENSOR PRODUCTS

C&K's proud history of product innovation continues with sensor solutions ideal for position and proximity sensing in a wide range of applications. Inherently robust with available IP ratings up to IP69, they are capable of millions of operations using magnetic actuation to provide contactless detection across hermetic barriers and distances up to 1". They're designed to be easy to install and easily customizable to fit the needs of applications ranging from automotive and industrial to construction, security and anti-tampering, and medical devices.



SERIES

Actuation

Max Actuation Distance

Life Cycle

Contact Type

Max. Voltage

Max. Switching Current

Housing

IP Rating

Mounting

Wiring

Standard Wire Lead Length

MPS

Magnetic

1"

4,000,000

SPST N.O.

30 V

300 mA

Plastic

Surface mount (adhesive or flange)

Insulated wire lead

12"

MPSR

Magnetic

1"

4,000,000

SPDT N.O. / N.C.

30V

200 mA

Die-cast aluminum

IP69

Surface mount flange

Stainless steel hosed insulated wire lead

72"



MPS SERIES
Magnetic Proximity Sensors

Features / Benefits

- Long life - 4M operations
- Sealed contacts
- Quality construction
- UL61058
- Quick & easy installation

Typical Applications

- 3.0 W max. @ 30 V DC or 30 V AC max. @ 0.3 AMP max
- 1.0 msec. max. operate time (including bounce)
- 1.0 AMP max. carry current

PART NUMBER

MPS45WGW

* Contact C&K for custom options availability

Function

SPST N.O. subminiature surface mount (adhesive or flange), side exit leads, 1" make gap



MPSR SERIES
Ruggedized Magnetic Proximity Sensors

Features / Benefits

- Long life - 4M+ operations
- Hermetically sealed contacts
- Form C (SPDT) contacts w/ 3 W rating
- IP69 Rating
- UL61058
- Quick & easy installation

Typical Applications

- Remote monitoring
- Anti-tamper detection
- Security

Contact Rating:

200 mA @ 3 W, 30 VDC

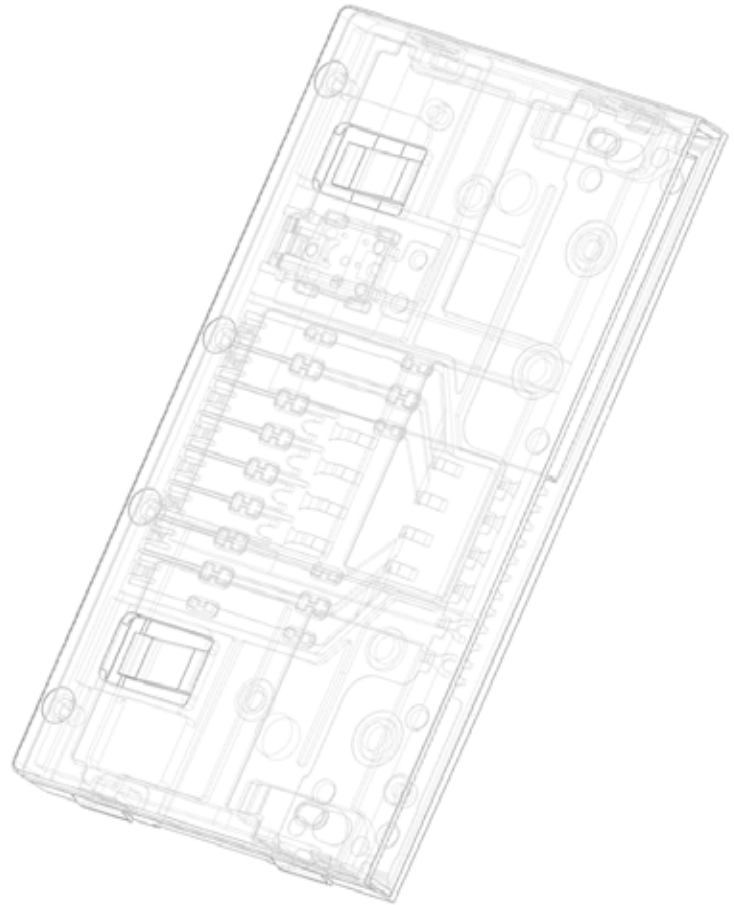
PART NUMBER

MPSR03C1A10

* Contact C&K for custom options availability

Function

Form C (SPDT N.O. / N.C.) 3 W / 30 VDC 72" Stainless steel hose w/ bare wire leads

**PRODUCT SELECTION GUIDE**

Smart Card Connectors

C&K's smart card connectors are EMV and PCI compliant, and offer full-size card acceptance as well as SIM/SAM cards. All smart card connectors are compatible with lead free SMT reflow soldering processes. Full-size smart card connectors feature up to 500,000 cycles lifetime, while SIM/SAM models range from 30,000 to 50,000 cycles.



CCM01 SERIES
Full Size Card Connectors

Features / Benefits

Operating life up to 500,000 cycles
Up to 40 N card insertion force
EMV
Card detection sealed switch

Typical Applications

Transaction
Identification
POS

| PART NUMBER | Number of Contacts | Termination | Operating Life | Card Insertion Force |
|----------------|--------------------|-------------|----------------|----------------------|
| CCM01-2327 LFT | 8 | SMT | 600,000 cycles | 40 N |



CCM01 MK5 SERIES
Full Size Card Connectors

Features / Benefits

Operating life 500,000 cycles
Low profile 4 mm and 3.2 mm height
Card detection sealed switch

Typical Applications

Transaction
Identification
POS
MPOS

| PART NUMBER | Cover | Number of Contacts | Termination | Operating life |
|----------------|---------|--------------------|-------------|----------------|
| CCM01-2563 LFT | Plastic | 8 | SMT | 500,000 cycles |
| CCM01-2565 LFT | Plastic | 8 | SMT | 500,000 cycles |
| CCM01-2663 LFT | Metal | 8 | SMT | 500,000 cycles |
| CCM01-2664 LFT | Metal | 8 | SMT | 500,000 cycles |

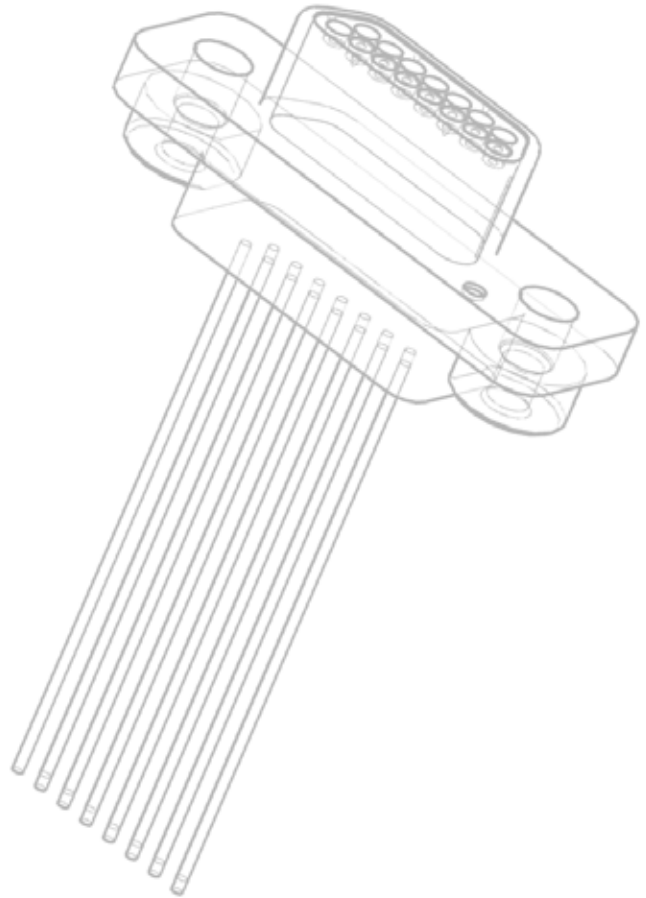


CCM03 SERIES
SIM / SAM Card Connectors

Features / Benefits

SIM / SAM card acceptance
Hinged and fixed covers
Compatible with pick and place and lead free soldering
6 or 8 contacts

| PART NUMBER | Number of Contacts | Termination | Contact Plating | Cover | Card Presence Switch | Operating Life |
|----------------|--------------------|-------------|-----------------|--------|----------------------|----------------|
| CCM03-3003 LFT | 8 | SMT | Inlay | Hinged | Without | 10,000 cycles |
| CCM03-3009 LFT | 6 | SMT | Gold | Hinged | Without | 10,000 cycles |
| CCM03-3013 LFT | 6 | SMT | Gold | Hinged | With | 10,000 cycles |
| CCM03-3754 LFT | 6 | SMT | Inlay | Fixed | With | 10,000 cycles |



PRODUCT SELECTION GUIDE

High Reliability Connectors

C&K's connectors are extremely reliable and high-performing, helping customers design the next generation of military, industrial, aerospace and space applications. The connectors are also highly configurable and available in a variety of sizes and formats. They can handle the harshest of environments, making them perfect for satellites, payload harnesses and launchers.



D-SUBMINIATURE CONNECTORS

C&K's full line of D*M and D*MA Series D-subminiature connectors are employed in satellites and launchers, and meet strict tests for outgassing and residual magnetism. Offered in a variety of contact layouts (including with coax, power or crimp contacts) and shell sizes, the D-sub connectors are available with non-removable and removable contacts, as well as in filtered, pin and socket, and interface configurations.



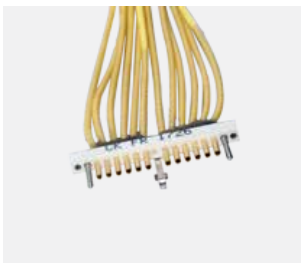
MICRO-D CONNECTORS

C&K's full line of MDM Series microminiature connectors are frequently employed to connect various modules within satellite systems. The MDM connectors utilize a proven Micropin™ contact system and are offered in a variety of contact layouts. To date, C&K is the only company that offers ESA-qualified rectangular micro-d microminiature connectors.



RECTANGULAR MICROMINIATURE CONNECTORS WITH REMOVABLE CONTACTS

Employed in various space equipment applications, C&K's MDMA rectangular microminiature feature removable crimp contacts compliant with ESA/ESCC specifications, along with the highly reliable Micropin™ twist pin contact system. The MDMA connectors are guaranteed to meet 'zero defect' criteria.



SINGLE IN-LINE MICROMINIATURE CONNECTORS

Utilized in satellites as a connection between PCBs, C&K's MTB1 micro-strip single in-line microminiature connectors also employ a high performance Micropin™ contact system and meet stringent requirements for outgassing and residual magnetism. The connectors are suitable for board-to-board, board-to-cable, and cable-to-cable applications. To date, C&K is the only company that offers ESA-qualified micro-strip single in-line microminiature connectors.



SPACE SPLICE CONTACTS

A compact, easy-to-use alternative to manual splicing, the one-way Space Splice high-reliability connectors deliver high radiation and temperature resistance, low residual magnetism, and low degassing, and — manufactured in accordance with ESA/ESCC specifications — meet the highest quality requirements for satellite, payload, and other harsh environment applications, including: laboratory, avionics, military, and medical equipment. An EPPL2 (ESA/ESCC European Preferred Part List Part 2) product, the series accepts the most popular cable gauges (AWG 20 – AWG 30) and employs removable, D*MA crimpable contact technology that allows for both manual and guiding-tool-assisted insertion.



INTERPOSER CONNECTORS

"Board-to-board" interconnect solderless solution specifically designed for the aerospace industry. Interposer uses C&K's proven Starclip contact technology - the electrical contact function is decoupled from the pressure applied by the spring, which therefore enables the connector to provide a stable, low-contact resistance, regardless of the force applied or distance moved. The interconnects are non-outgassing, with gold-plated contacts, and have an operating temperature range of -55°C to +125°C. They are compliant with CS FR051 C&K specification, according to ESA/ESCC code 3401.

| PART NUMBER | PAGE NUMBER | PART NUMBER | PAGE NUMBER |
|------------------------|-------------|----------------|-------------|
| 1101M2S3CQE2 | 51 | D101J12S215PQA | 41 |
| 1101M2S3AV2QE2 | 51 | D501J12S2AHQA | 41 |
| 1101M2S3AQE2 | 51 | D502J12S2AHQA | 41 |
| 1201M2S1CQE2 | 51 | D6C90 F1 LFS | 24 |
| 7101J1ABE2 | 40 | D6L90 F1 LFS | 24 |
| 7101J1AQE2 | 40 | D6R10 F1 LFS | 24 |
| 7101J1AV2QE2 | 40 | D6R90 F1 LFS | 24 |
| 7101P3YZQE | 88 | D6RLRD F1 LFS | 24 |
| 7101SYCQE | 88 | D6RLWH F1 LFS | 24 |
| 7101SYZQE | 88 | DF62J12S215PQA | 41 |
| 7103SYZQE | 88 | DF62J12S2AHQA | 41 |
| 7201SYZQE | 88 | DF62J12S2APQA | 41 |
| 8121J81ZGE22 | 33 | DS1D6AQ1 | 62 |
| 8121SHZGE | 33 | DS2D6BQ1 | 62 |
| 8125SHZBE | 33 | DS2D6CQ1 | 62 |
| 8125SHCBE | 33 | E101J1AQE2 | 40 |
| 8221SHZGE | 33 | E101J3V31QE2 | 40 |
| 9201KZQE | 91 | E101MD1ABE | 89 |
| 9201KAV2QE | 91 | E101MD1AQE | 89 |
| 9221K1Z4QD | 91 | E101MD1AV2GE | 89 |
| 9221SH3Z4QD | 91 | E103MD1ABE | 89 |
| A10305RNCB | 45 | E105SD1CBE | 89 |
| A11405RNZQ | 45 | E201J1V31QE2 | 40 |
| A20605RNCQK | 45 | ENCOS16DS5C | 46 |
| ADPDC2T04AC | 62 | EP11SD1ABE | 32 |
| AP2D200TWBE | 35 | EP11SD1AVBE | 32 |
| AP2D300SZBE | 35 | EP11SD1CBE | 32 |
| AP4D200TZBE | 35 | EP11SD1SAPE | 32 |
| AP4E300TZBE | 35 | EP12SD1ABE | 32 |
| APB4E01TZBE-001 | 35 | ET01MD1ABE | 89 |
| APB4E01TZBE-002 | 35 | ET01MD1CBE | 89 |
| ASKHC2J04AC | 62 | ET01MD1SAPE | 89 |
| ASKHC2T04AC | 62 | ET08LD1CBE | 89 |
| ATP16-DL1-000-B4SA-04G | 37 | ET21MD1AQE | 89 |
| ATP16-DL5-606-B3SA-04G | 37 | FDS001R | 9 |
| ATP19-SL1-324-B0SE-03Q | 37 | FDS0002R | 9 |
| ATP16-SL1-612-M4SA-04G | 37 | FDSE001R | 9 |
| ATP19-SL3-624-B0DA-03Q | 37 | FDSE002R | 9 |
| ATP19-SL4-612-M0DE-03Q | 37 | FP11SPA1B1TP02 | 33 |
| ATP22-SL3-312-B0SA-03Q | 37 | FP11SPA1B1TP03 | 33 |
| ATP22-SL3-724-B0SE-03Q | 37 | FP11SPC1B1TP00 | 33 |
| ATS2D1GNC LFS | 10 | FP11SPC1B1TP02 | 33 |
| ATS2D3GNC LFS | 10 | FP11SPC1B1TP03 | 33 |
| AYZ0102AGRLC | 52 | GT11MCBE | 90 |
| AYZ0202AGRLC | 52 | GT11MSABETR | 90 |
| AYZ0203AGRLC | 52 | GT11MSCBETR | 90 |
| BPA01B | 18 | GT23MAVBE | 90 |
| BPA04B | 18 | H1011U2F205NQ | 65 |
| BPA05SB | 18 | H200AA2F205NQ | 65 |
| CCM01-2327 LFT | 97 | H201132F205NQ | 65 |
| CCM01-2563 LFT | 97 | HDP001R | 8 |
| CCM01-2565 LFT | 97 | HDS001R | 8 |
| CCM01-2663 LFT | 97 | HDT0001 | 8 |
| CCM01-2664 LFT | 97 | ILSTB18010 | 81 |
| CCM03-3003 LFT | 97 | ILSTB18050 | 81 |
| CCM03-3009 LFT | 97 | ILSTB25030 | 81 |
| CCM03-3013 LFT | 97 | ILSTC18060 | 81 |
| CCM03-3754 LFT | 97 | ILSTC25060 | 81 |
| CD10RM0SBR | 19 | ILT01 | 92 |
| CD16RM0SBR | 19 | ILT02 | 92 |
| CRD10RM0CB | 19 | ILT03 | 92 |
| CRD16CM0SBR | 19 | ILT04 | 92 |
| CRE16RRDL0C | 20 | ILT05 | 92 |
| CRE16RRDM0S | 20 | ILT06 | 92 |
| CS41001E | 28 | | |

| PART NUMBER | PAGE NUMBER | PART NUMBER | PAGE NUMBER |
|---------------------------|-------------|-----------------------|-------------|
| ITS10FV1ST | 81 | KSC441V2SPD LFS | 75 |
| ITS13FV2SR | 81 | KSC461J 70SH LFS PF | 77 |
| ITS23FR1ST | 81 | KSC4D2J50SH LFS | 11 |
| ITS40FR2ST | 81 | KSC4D3J50SH LFG | 11 |
| ITS50FV3SR | 81 | KSC4D3J50SH LFG ULC | 11 |
| JS102011JAQN | 50 | KSC641J LFS | 76 |
| JS102011SAQN | 50 | KSC841J OL LFS | 76 |
| JS207011SCQNR | 50 | KSC941J LFS | 76 |
| K12A BK 1 5N | 23 | KSEK43G LFS | 76 |
| K12C 1 5N | 24 | KSEM31J LFS | 76 |
| K12C 1.3 9N 0.5 | 24 | KSJ0MD3860SH LFTR | 11 |
| K12GO BK 1.5 6/12N | 23 | KSJ0VD1860SH LFTR | 11 |
| K12P BK 1 5N | 23 | KSR221G LFS | 74 |
| K12P BK 1.5 1.5 OD | 13 | KSR221G NC LFS | 74 |
| K12P BK 2 1.5 OD | 13 | KSR223G NC LFG | 74 |
| K12PL GN 1.5 5N LV306 | 23 | KSR231G LFS | 74 |
| K12PL WH 1.5 5N LV302 | 23 | KSR251G LFS | 74 |
| K12SA S 1.5 3N C LFTX | 12 | KSS221G LFS | 75 |
| K12SA S 1.5 3N O LFTX | 12 | KSS231G LFS | 75 |
| K12SB D 1.5 3N CC LFTX | 12 | KSS241G LFS | 75 |
| K12SB D 1.5 3N OO LFTX | 12 | KSU211WFLG | 10 |
| K12SB S 1.5 3.5N C LFTX | 23 | KSU213WFLG | 10 |
| K12SB S 1.5 9N O LFTX | 23 | KT11 B0 SA3M 34 LFS | 79 |
| K12SC D 1.5 4/8N OO LFTX | 23 | KT11 B2 SAM 34 LFS | 79 |
| K12SC L 1.5 WHO 9N O LFTX | 23 | KT11 P3 SA1M 34 LFS73 | 79 |
| K5AT GA 43 G | 84 | KT11 P3 SM 34 LFS | 79 |
| K5AT WH 43 G | 84 | KT11 P4 SA2M 35 LFG | 79 |
| K5V 1 BA 43 T P3 | 84 | KXT 311 LHS | 71 |
| K5V 1 BU 43 T | 84 | KXT 321 LHS | 71 |
| K5V 1 YG 43 T | 84 | KXT 331 LHS | 71 |
| K5V 4 BU 43 G P3 | 84 | L103111MS02Q | 52 |
| K5V 5 WH 43 G | 84 | L20202MA04Q | 52 |
| K8xx41G LFS | 84 | L203111MS02Q | 52 |
| KMR211G LFS | 71 | L212132MV02QE | 52 |
| KMR401G LFS | 12 | LCGGL9P00EC | 60 |
| KMR621NG LFS | 71 | LCGHF5A10RCE | 60 |
| KMR73N1G LFS | 71 | LCS011T05QDC | 60 |
| KMS221G LFS | 72 | LCS051P00PDC | 60 |
| KMS231G LFS | 72 | LCS051P00SDC | 60 |
| KMT011NGJ LHS | 71 | M83731/9-211 | 88 |
| KMT031NGJ LHS | 71 | M83731/9-231 | 88 |
| KMT071NGJ LHS | 71 | M83731/9-261 | 88 |
| KMT0D1 NGJ LHS | 12 | M83731/9-271 | 88 |
| KMT0D3 NGJ LHG | 12 | M83731/10-231 | 88 |
| KS11 R2 2 C Q D | 25 | MPS45WGW | 95 |
| KS12 R2 1 C B D | 25 | MPSR03C1A10 | 95 |
| KS12 R2 3 C B E | 25 | MS-105A01 (H) | 58 |
| KSA0M211 LFTR | 85 | MS-118305-G | 58 |
| KSA0M411 LFTR | 85 | MS-118405-H | 58 |
| KSC SLT 221G LFS | 78 | NANOT100AS | 82 |
| KSC SLT 223J LFS | 78 | NANOT160AS | 82 |
| KSC SLT 241J LFS | 78 | NANOT160BS | 82 |
| KSC2 TE 01J LFS | 77 | NANOT240AS | 82 |
| KSC2 TE 31J LFS | 77 | NANOT240BP | 82 |
| KSC2 TE 41J LFS | 77 | NP8S2D203QE | 36 |
| KSC241J LFS | 76 | NP8S2D2W4QE | 36 |
| KSC321J LFS | 76 | NP8S2R203QE | 36 |
| KSC421G 70SH LFS OF | 77 | NP8S2T203QE | 36 |
| KSC422J 70SH LFS PF | 77 | NP8S3D203QE | 36 |
| KSC441G 70SH LFS PF | 77 | OS102011MS2QN1 | 51 |
| KSC441J 70SH LFS | 76 | OS103011MS8QP1 | 51 |
| KSC441J 70SH LFS OF | 77 | OS202011MA0QN1 | 51 |
| KSC441G DCT 70SH LFS | 76 | OS202011MS2QS1 | 51 |
| KSC441J DCT 70SH LFS | 76 | PCM12SMTR | 53 |
| KSC441J ST2 LFS | 76 | PCM13SMTR | 53 |

| PART NUMBER | PAGE NUMBER | PART NUMBER | PAGE NUMBER |
|---------------------------|-------------|------------------------|-------------|
| PLP16C1RD3SE6 | 37 | RTE0400N04 | 18 |
| PLP16C1SQ3SA4 | 37 | RTE1002G14 | 18 |
| PLP16C2TA6SA6 | 37 | RTE1600V44 | 18 |
| PLP1600RD6SA6 | 37 | RTF16R0C | 19 |
| PLP1624RD3DE6 | 37 | RTF16R0S | 19 |
| PLP1624SQ3DE6 | 37 | SAM-H2-LR10SPA | 28 |
| PLP1624SQ6SE4 | 37 | SAM-H2-LR14SPA | 28 |
| PLP1624TA3SA6 | 37 | SAM-H2-MR14SPA | 28 |
| PNP8S2D2YW2QE | 36 | SAM-H4-MR11SPA | 28 |
| PNP8S2T2C03GE | 36 | SDA03H0SBR | 17 |
| PNP8S2T2C03QE | 36 | SDA04H0SBR | 17 |
| PNP8S2T2CW3QE | 36 | SDA08H0B | 17 |
| PS-12G01 | 34 | SDS0001 | 9 |
| PS-12G03 | 34 | SER BK AU OA | 25 |
| PS-2214-F NS PA | 34 | SERU AU OA | 25 |
| PS-2214-L NS PA | 34 | SET BK AU OA | 25 |
| PT101SSQ | 91 | SK-12D04-VG 3 NS | 53 |
| PT103SQQ | 91 | SK-12D07-G 5 NS PA | 53 |
| PT201SZQ | 91 | SK-12D07-VG 4 NS PA | 53 |
| PT202SSQ | 91 | SK-13D21-G 2 RT | 53 |
| PT208SSQ | 91 | SK-14D01-G6 | 53 |
| PTS125SJM73 SMTR-2 LFS | 80 | SRK GY | 25 |
| PTS125SK43-2 LFS | 80 | SS-12D07-VG 4 NS GA PA | 50 |
| PTS526 SK G 15J SMTR2 LFS | 72 | SS-12D1505-G 2 | 50 |
| PTS526 SM 08 SMTR2 LFS | 72 | SS-14D08-VG 5 PA | 50 |
| PTS526 SP 20 SMTR2 LFS | 72 | SS-22D0205-G 2 | 50 |
| PTS530GK055SMTRLFS | 72 | SS-22D07-G 2 NS PA | 50 |
| PTS530GM055SMTRLFS | 72 | SSW 115S | 59 |
| PTS540JK035SMTRLFS | 73 | STK WH | 25 |
| PTS540JM035SMTRLFS | 73 | SW-13A65N-A01 | 42 |
| PTS636 SK25 SMTR LFS | 85 | SW-13A65N-A01 BK | 42 |
| PTS636 SL50 LFS | 85 | T101MH9ABE | 90 |
| PTS636 SM43J SMTR LFS | 85 | T101MH9AVBE | 90 |
| PTS641SM31SMTR2LFS | 79 | T102SHZQE | 90 |
| PTS641TK25SMTR2LFS | 79 | T105LH9ABE | 90 |
| PTS645SL43SMTR92 LFS | 80 | T211MH9V3BE | 90 |
| PTS645VH58-2 LFS | 80 | TDA04H0SB1R | 17 |
| PTS647SN50SMTR2 LFS | 80 | TDA08H0SB1R | 17 |
| PTS815 SJG 250 SMTR LFS | 73 | TDA10H0SB1R | 17 |
| PTS815 SJK 250 SMTR LFS | 73 | TFCDK6ST2640C | 61 |
| PTS815 SJM 250 SMTR LFS | 73 | TFCJL3SP004AC | 61 |
| PTS820J25KSMTRLFS | 73 | TF325CFP0040Y | 61 |
| PTS820J25MSMTRLFS | 73 | THB001P | 28 |
| PTS840ESDPSMTR LFS | 74 | TP11SH8ABE | 32 |
| PTS840GKPSMTR LFS | 74 | TP11SH9ABE | 32 |
| PTS840GMPMTR LFS | 74 | TP11SH9CBE | 32 |
| PTS840PMSMTR LFS | 74 | TP11SHZQE | 32 |
| PTS841 ESD GK SMTR LFS | 82 | TP12SH9ABE | 32 |
| PTS841 ESD GMP SMTR LFS | 82 | V80212MA08Q | 54 |
| PTS841 GKP SMTR LFS | 82 | V80212MS02Q | 54 |
| PTS841 GM SMTR LFS | 82 | V80212S205Q | 54 |
| PTS841 GMP SMTR LFS | 82 | Y101132C203NQ | 65 |
| PVA1EEH1 3.5N V2 | 34 | Y1011U2C203NQ | 65 |
| PVA1OAH1 1.2N V2 | 34 | Y201132C203NQ | 65 |
| PVA2EEH3 1.2N V2 | 34 | ZMA00A150L04PC | 58 |
| PVA2OAH5 1.7N V2 | 34 | ZMA03A150A03PC | 58 |
| R10815RS02Q | 45 | ZMA03A150S07EC | 58 |
| R20407RR03Q | 45 | ZMW00AP00PCAA | 59 |
| R20507RR02Q | 45 | ZMW00AT10SCAA | 59 |
| RB-231X2 | 13 | ZPA00A150P00T | 59 |
| RB-441-45 | 13 | | |
| RKA2SGK055SMTR LFS | 83 | | |
| RKA2SGM055SMTR LFS | 83 | | |
| RKB2SJK250SMTR LFS | 83 | | |
| RKB2SJK250SMTR LFS | 83 | | |
| RKC GG140 SMTR LFS | 83 | | |

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Customer Communication

15 Riverdale Ave. Newton, MA 02458.

For product information, inquiries & quotes, order or contract amendment handling customer feedback, customer complaints: Contact Customer Service 617.969.3700, Fax 617.969.6600, Web Address: www.ck-components.com

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3. No agreements of sale or contract shall exist between C&K and purchaser until accepted by C&K. All such agreements shall be deemed to take place in Massachusetts, regardless of the origin or destination of the product.
4. Notwithstanding any term or condition imposed or set forth by purchaser's documents or purchase order, C&K objects and takes exception to any provision therein which conflicts with or is in addition to C&K's Terms and Conditions of Sale with Limitations of Remedy and Liability. C&K's performance of any purchase order is conditional upon the purchaser accepting all C&K's said terms, conditions and limitations. Failure of the purchaser to object to these Terms and Conditions of Sale with Limitations of Remedy and Liability within seven (7) days shall constitute full and final acceptance thereof by purchaser.

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6. No product shall be returned to C&K without its prior permission. No cancellations or reschedules to open orders are permitted within factory lead time. Orders are to be scheduled for delivery within 12 months from order date.

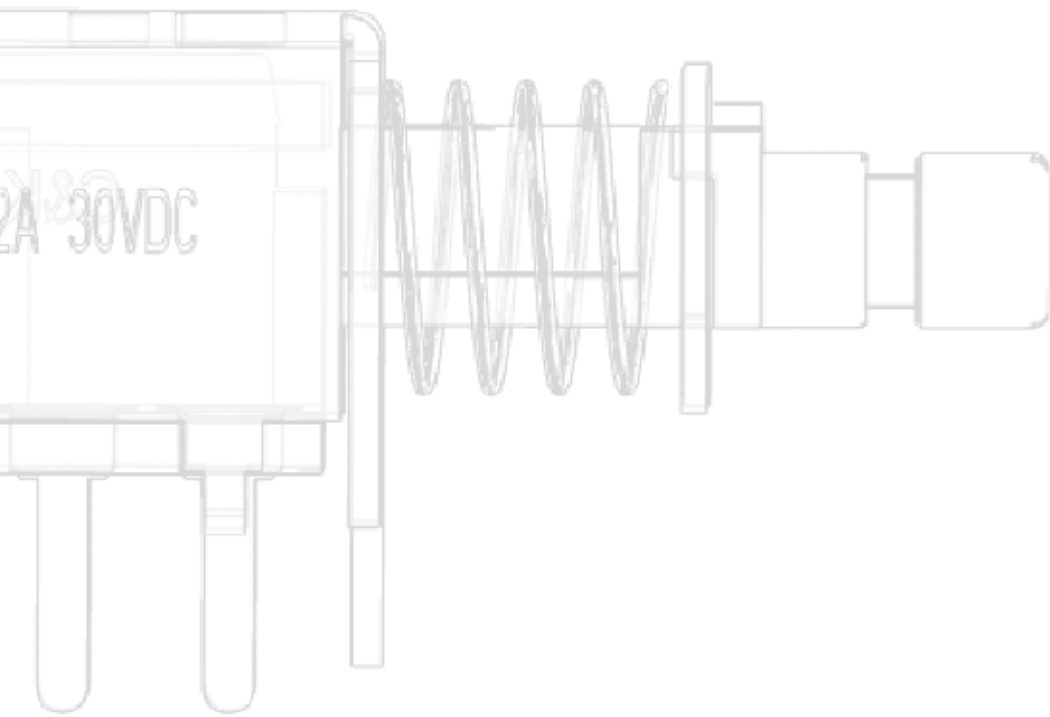
7. Delivery schedules are subject to prior sale and circumstances in effect at the time the purchase order is accepted by C&K. C&K shall not be held responsible for delays in delivery due to strikes; work stoppages; fires; floods; accidents; inability to obtain materials, fuels or transportation; government edict; civil unrest or any other cause unavoidable or beyond the control of C&K. C&K shall not be liable for any damages or costs based upon late delivery including instances where C&K has been informed in advance of the consequences.

8. Unless otherwise agreed by C&K, all payments shall be in U.S. currency in immediate funds. Payment terms, unless otherwise agreed by C&K, shall be as specified on C&K's invoices. All amounts remaining unpaid beyond said terms shall accrue interest at the rate of one and one-half (1-1/2) percent per month or the highest lawful interest rate, whichever is lesser, until paid in full. C&K's prices are exclusive of sales, excise, use, occupation, value-added or any other taxes levied on sales transactions. Purchaser must pay all such applicable taxes unless it provides C&K with a valid, current exemption certificate. C&K shall have no obligation to contest or withhold such taxes on behalf of the purchaser.

9. Unless otherwise specified, all shipments are F.O.B. shipping point. Loading or special packaging charges shall be for the account of purchaser. Title to and possession of the product, including all risk of loss, shall pass to purchaser upon delivery to the carrier at the point of shipment.

10. C&K retains a security interest in all products shipped to secure payment of the purchase price and all other amounts owed by purchaser to C&K. Purchaser agrees to cooperate with C&K in protecting this security interest.

11. Any and all indemnities for the benefit of C&K hereunder shall include attorneys' fees and costs, including third party and expert witness fees. Furthermore, purchaser shall reimburse C&K for its costs and attorneys' fees in collecting any sums owed by purchaser to C&K, or for enforcing these Terms and Conditions of Sale with Limitations of Remedy and Liability.



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