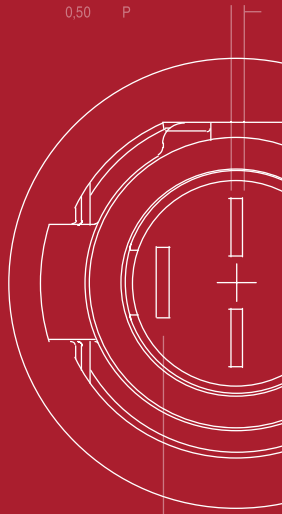


0,50 P



50.61

5,65 TYP

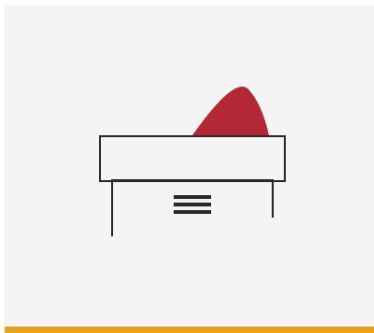
2020 **PRODUCT** GUIDE

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

0,50 TYP

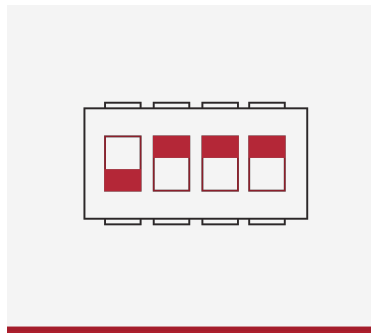
A Selection from our **55K Products**

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.



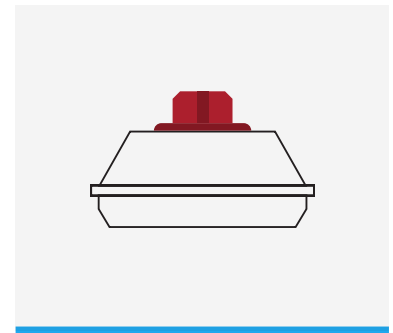
DETECT SWITCHES

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



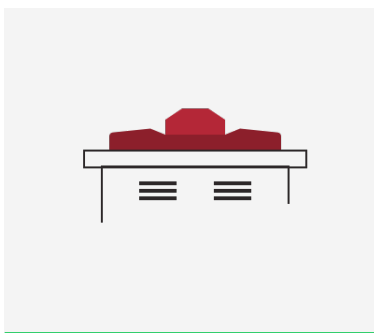
DIP SWITCHES

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



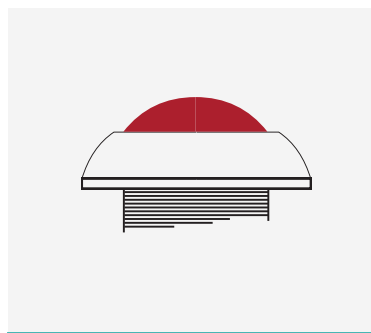
KEYSWITCHES

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



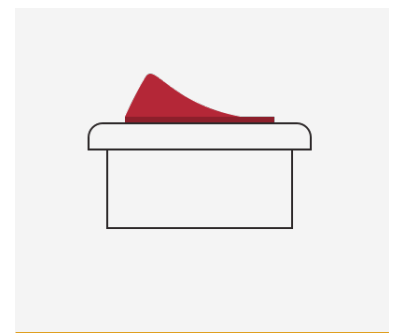
NAVIGATION SWITCHES

Multi-direction
Joystick, rocker



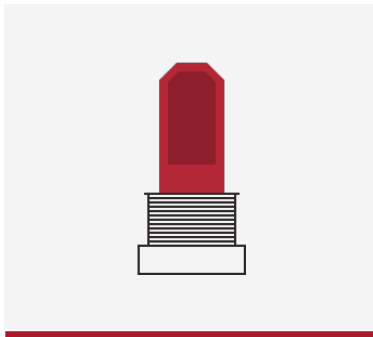
PUSHBUTTONS

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



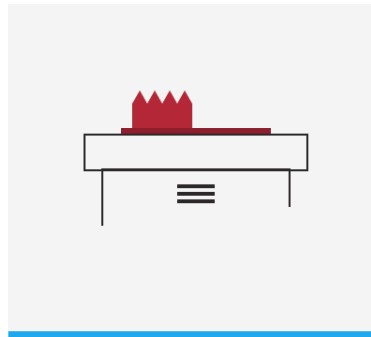
ROCKER SWITCHES

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



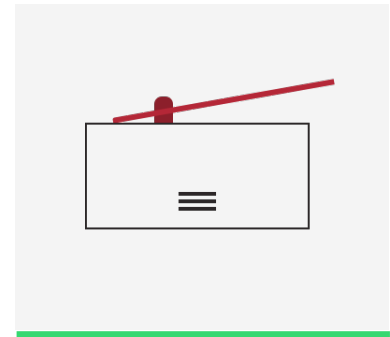
ROTARY SWITCHES

Multi-pole, multi-position
Sealed



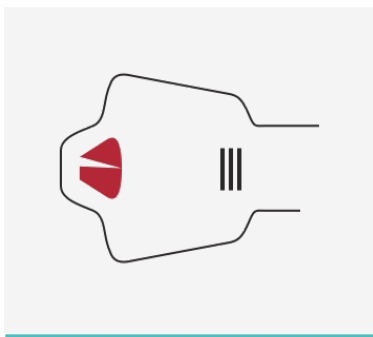
SLIDE SWITCHES

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



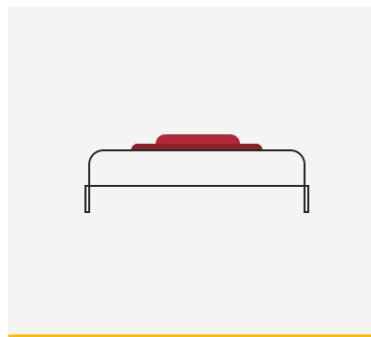
SNAP-ACTING SWITCHES

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



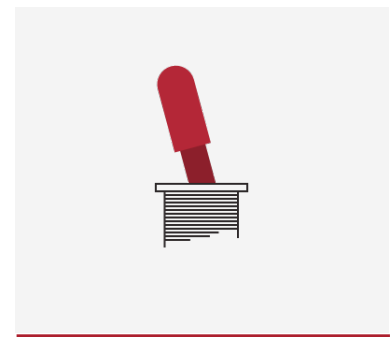
SWITCHLOCKS

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



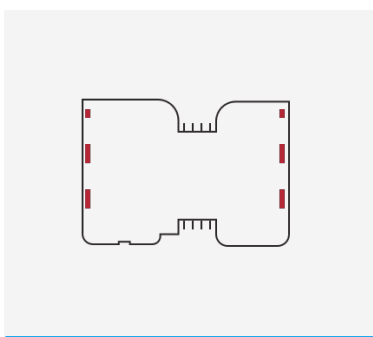
TACTILE SWITCHES

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



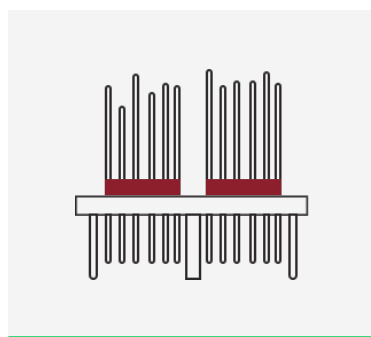
TOGGLE SWITCHES

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



SMARTCARD CONNECTORS

ISO, SIM, SAM cards
Low profile
Anti-piracy



HIGH REL CONNECTORS

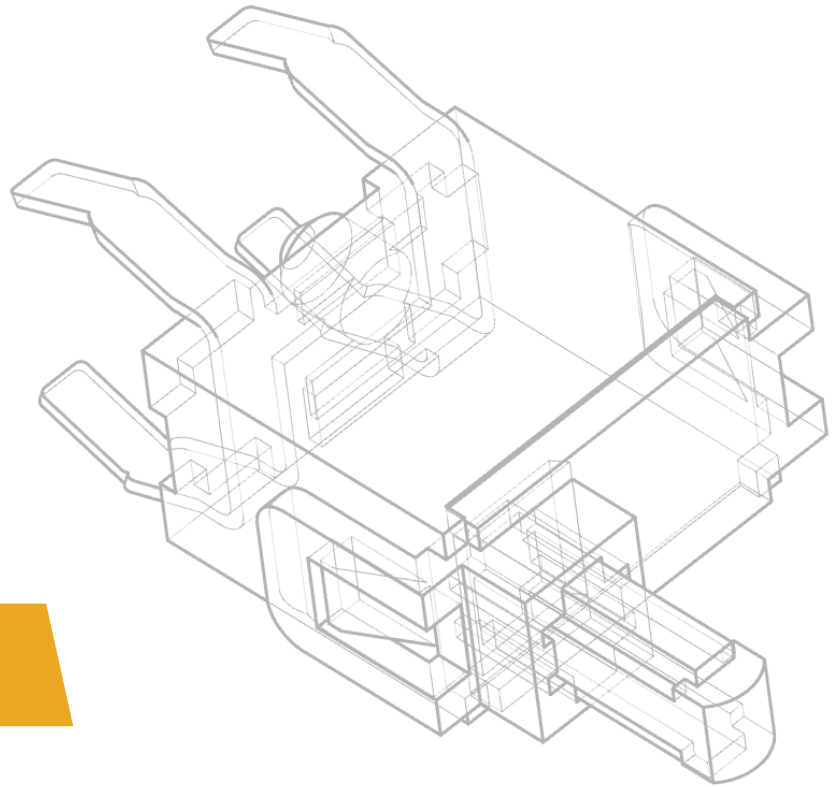
Microminiature & D-sub
Mil/Aero & medical
Board-board, board-cable, cable-cable

SWITCH

SOLUTION DESIGN INNOVATION

TABLE OF CONTENT

5-12	Detect
13-18	DIP
19-23	Keyswitch
24-26	Navigation
27-35	Pushbutton
36-40	Rocker
41-44	Rotary
45-52	Slide
53-58	Snap-Acting
59-61	Switchlock
62-76	Tactile
77-81	Toggle
82-83	Smart Card Connectors
84-85	High Reliability Connectors
86-88	Part Number Index



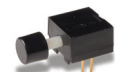
PRODUCT SELECTION GUIDE

Detect Switches

With 19 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	SDP	SDS
Travel to Make (mm)	0.3	See datasheet	0.17	0.24	29.2°	0.35
Overtravel	0.75	See datasheet	0.5	1.66	39.1°	1.65
Total Travel	1.05	See datasheet	1.07	1.9	68.3°	2.0
Actuator Length	1.4	See datasheet	1.17	2.15	1.85	2.5
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.	SPDT	SPST N.O. SPST N.C.
Max. Voltage	5 V	5 V / 16 V / 30 V	5 V	5 V	5 V	12 V
Max. Switching Current	1 mA	1 mA / 5 mA / 100 mA	1 mA	1 mA	1 mA	100 mA
Sealing	No	No	No	No	No	No
Mounting	Surface mount	Thru-hole, solder lug	Surface mount	Surface mount	Surface mount	Surface mount



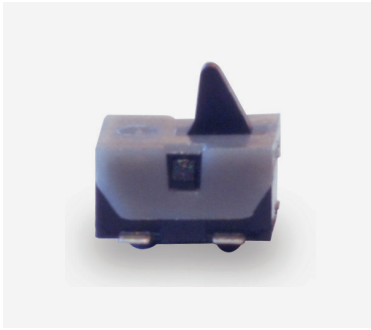
SERIES	DDS	MDS	NEW	NEW	KDS	KM
			FDSD	FDSE		
Travel to Make (mm)	0.45	2.5 max.	1.6 (15°)	1.44	1.25 max.	4.06
Overtravel	1.95	0.15 min.	1.45	1.07	8.9	1.78
Total Travel	2.4	2.9	3.05 (60°)	3.14 (60°)	10.16	5.84
Actuator Length	2.6	R 8.4	2.3	2.67	10.16	10.11
Life Cycle	50,000	100,000	50,000	50,000	10,000	10,000
Contact Type	SPST N.O.	SPDT	SPST N.O.	SPST N.C.	SPST N.O. SPST N.C.	SPDT
Max. Voltage	30 V	30 V	5	5	20 V	125 V AC
Max. Switching Current	100 mA	300 mA	10 mA	1 mA	0.4 VA	250 mA
Sealing	No	No	No	No	No	Flux tight
Mounting	Thru-hole	Thru-hole & surface mount	Surface mount	Surface mount	Snap-in panel	Thru-hole



SERIES	MPS	KSU	KSR2D	KSC4D	KSJ
Travel to Make (mm)	See datasheet	0.5	0.3	0.6	0.3
Overtravel	See datasheet	1.0			0.75
Total Travel	See datasheet	1.5	0.3	0.6	1.05
Actuator Length		1.5	0.8	2.6	1.4
Life Cycle	10,000,000	100,000	100,000	500,000 / 2,000,000	100,000
Contact Type	SPST N.O.	SPST N.O.	SPST N.O.	SPST N.O.	SPST N.O.
Max. Voltage	30 V	32 V	32 V	32 V	5 V
Max. Switching Current	300 mA	50 mA	10 mA	50 mA	1 mA
Sealing	Yes	Dust and water drop proof	Dust and flux tight	IP67	Flux tight
Mounting	Wire lead	Surface mount	Surface mount	Surface mount	Surface mount



SERIES	RB	ATS
Travel to Make (mm)	10° / 90°	0.7 (to break)
Overtravel		0.4
Total Travel		1.1
Actuator Length		1.6
Life Cycle	20,000 / 100,000	5,000
Contact Type	SPST / SPDT	SPST N.C.
Max. Voltage	5 V / 24 V	32 V
Max. Switching Current	1 mA / 25 mA	50 mA
Sealing		IP54
Mounting	Thru-hole	Surface mount



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.



SDP SERIES
Micro Mini Pendulum SMT Detect Switches

Features / Benefits

SMT process compatible
 Low profile
 Right or left side actuated
 Low actuation force
 Low halogen / halogen free

Typical Applications

Consumer electronics
 Computers
 Medical devices
 ATCA and MicroTCA devices

PART NUMBER	Contact Type	Contact Rating	Contact Material	Total Travel	Over Travel	Operating Life
SDP002	SPDT, NO	1 mA 5 VDC	Silver over nickel	68.3° from center	39.1° (1.31 mm)	50,000 cycles

Refer to full line catalog to see operating zone chart



KSU SERIES
Micro Miniature Surface Mount Detect Switches

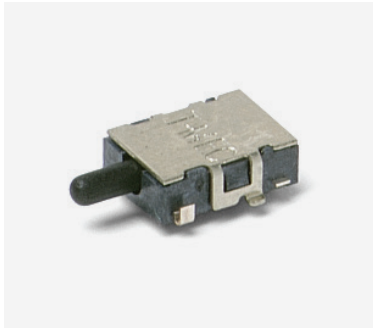
Features / Benefits

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
KSU211WLF	SPST, NO	Silver	0.65 mm - 0.45/+0.25 mm	0.7 ± 0.5 N	100,000 cycles
KSU213WLF	SPST, NO	Gold	0.65 mm - 0.45/+0.25 mm	0.7 ± 0.5 N	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

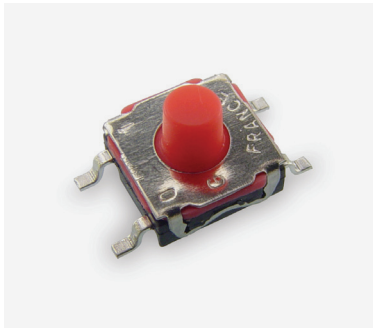
100 mA @ 12 VDC

Silver

2.0 mm

1.65 mm

50,000 cycles



KSC4D 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

Actuator Height

Operating Force

Contact Material

Electrical Life

Travel

KSC4D2J50SH

5.2 mm

2 ± 1 N

Silver

2,000,000 cycles

0.35 ± 0.85 mm



KSJ 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

Operating Force

Contact Material

Electrical Life

Travel

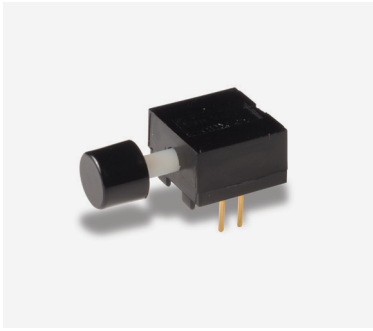
KSJ0VD1860SH LFTR

6.0 N

Silver

200,000 cycles

0.50 ± 0.25 mm



KM SERIES
Subminiature Detect Switches

Features / Benefits

Reliable contact design
Available with pretravel and overtravel

Contact Rating:

Gold 0.4 VA MAX. @ 20 V AC or DC MAX
Silver 0.25 AMPS @ 125 V AC or DC

Typical Applications

Alarm systems
Computers
Detector switch application

PART NUMBER	Function	Actuator	Mounting Style / Termination	Contact Material	Electrical Life
KM1202A08BE	On-Mom., SPDT	.398" high, .122" dia.	Right angle, PC thru-hole	Gold	10,000 cycles
KM1202A08QE	On-Mom., SPDT	.398" high, .122" dia.	Right angle, PC thru-hole	Silver	10,000 cycles



MPS SERIES
Magnetic Proximity Sensors

Features / Benefits

Long life—4M operations
Sealed contacts
Quality construction
Quick and easy installation

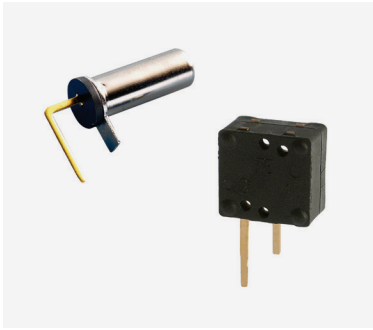
Contact Rating:

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

Typical Applications

Automotive sensors and indicators
Industrial sensors
Factory automation equipment

PART NUMBER	Function
MPS45WGW	Subminiature surface mount (adhesive or flange), side exit leads, 1" make gap.



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-220-07 R	SPST	1 mA 5 V DC resistive load max	15° to 90° 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



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	PC thru-hole
ATS2D3GNC LFS	SPST-NC	Gold	50 mA @ 32 VDC	2 N	5,000 cycles	PC thru-hole



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

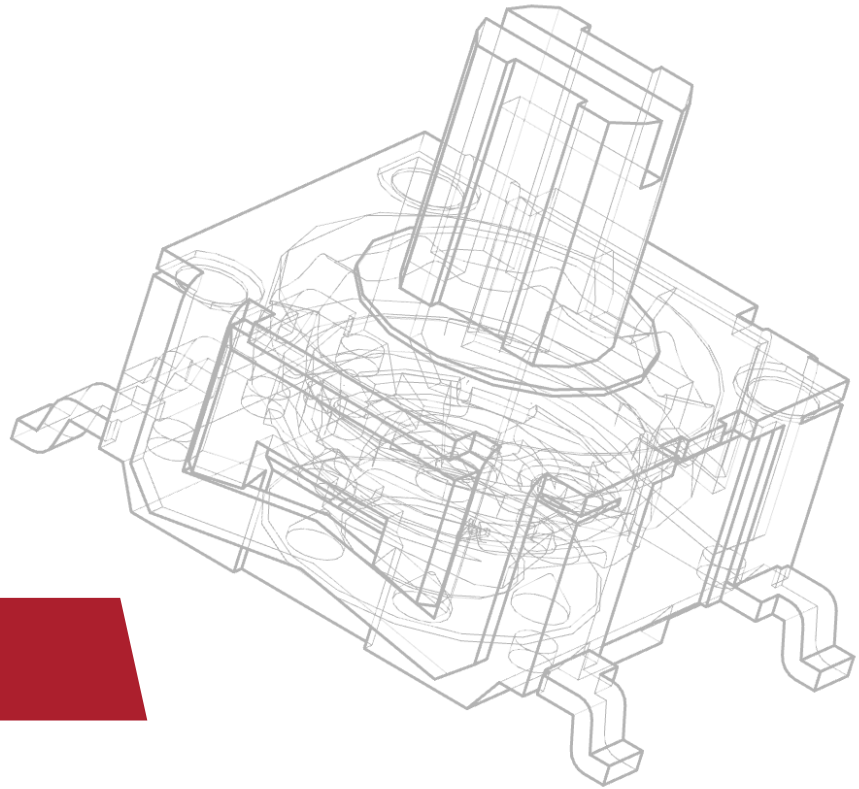
Features / Benefits

- 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

**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

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

TDP

Half-pitch .050" side

2, 4, 8

SPST

.161 (4.1)

Washable with tape

•

•

•

•

•

•

•

100 mA

TDA

Half-pitch .050"

2-10 (even only)

SPST

.090 (2.3)

Washable with tape seal

•

•

•

•

100 mA

SDA

Low profile

2-12 (except 11)

SPST

.189 (4.80) thru-hole
.175 (4.45) SMT

Washable (tape not required)

•

•

•

•

•

•

100 mA

SD

Low profile

2-12 (except 11)

SPST

.168 (4.27) thru-hole
.160 (4.06) SMT

Washable with tape

•

•

•

•

•

•

100 mA

BD

Standard profile

1-12 (except 11)

SPST

.297 (7.55)

Washable (tape not required)

•

•

•

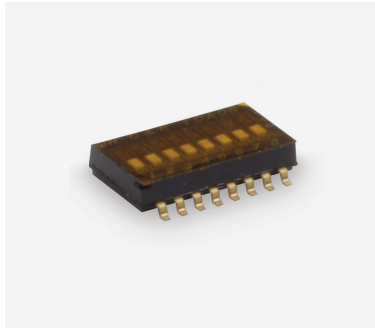
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100 mA



SERIES	BPA	TDD	SPA	RTE	CD	CRD
Switch Type	Side actuated	Jumper switch	Single in-line package	Rotary & coded	8 mm coded rotary	10 mm coded rotary
No. of Positions	1-10 & 12	2	2, 4, 6, 8, 10	4, 10, 16	8, 10, 16	10 & 16
Contact Style	SPST	SPDT	SPST / SP3T / SP4T / coded	Coded	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	.168 (4.27) thru-hole .340 (8.6) Rt. angle	.256 (6.5) vertical .414 (10.5) Rt. angle
Process Sealed	Washable (tape not required)	Washable with tape	Washable (tape not required)		Washable (tape not required)	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	0.4 VA	0.4 VA
Retention Feature			•	•	• C option	



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

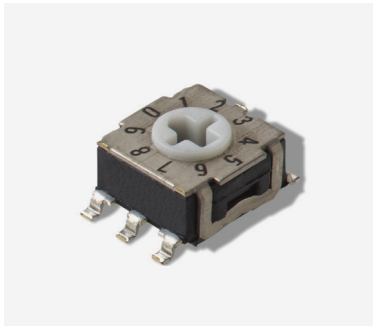
Contact Rating:

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

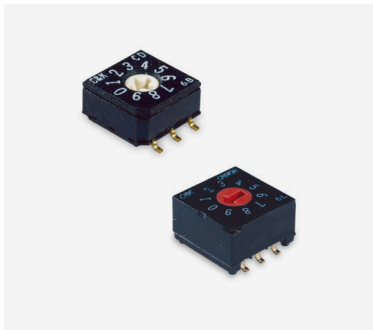
Contact Rating:

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
8mm / 10mm DIP Coded Rotary Switches

Features / Benefits

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

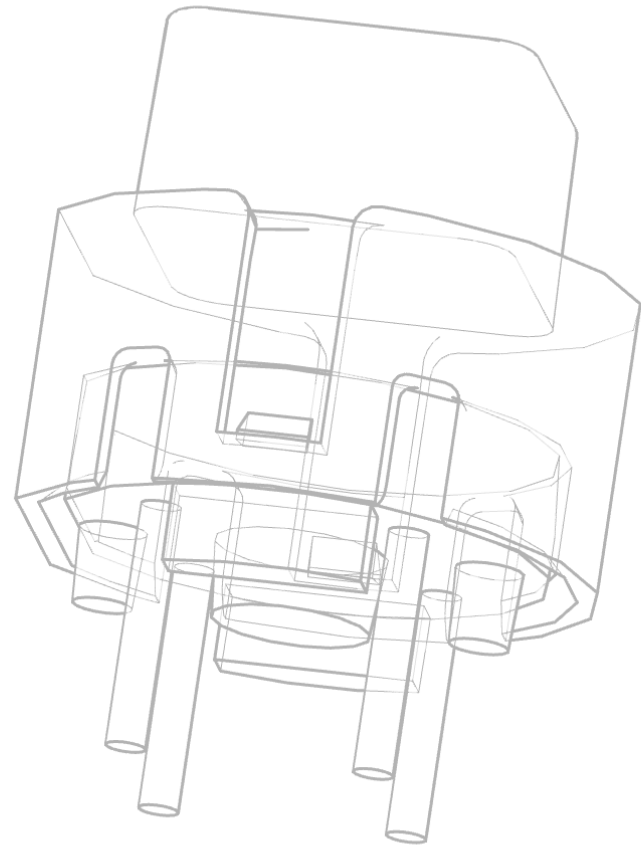
Contact Rating:

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



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 except for K12C which
is 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

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

IP40 except for K12C which
is IP67

•

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

KBD

15.6 x 15.6 x 15

SPST momentary

12 VDC / 10 mA

45 gf / 55 gf / 60 gf
0.4 N / 0.5 N / 0.6 N

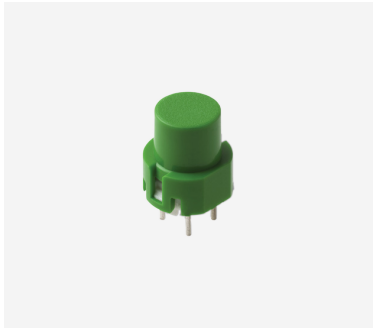
1.5 - 2 mm

50,000,000

IP40 except for K12C which
is IP67

•

Thru-hole



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

Function

SPST, NO

SPST, NO

SPST, NO

SPST, NO

Button Type / Color

Round / Black

Square / Black

Round / Gray

Plunger / Black

Travel

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



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

K12GO BK 1.5 6/12N

K12P BK 1 5N

K12A BK 1 5N

K12C 1 5N

K12PL WH 1.5 5N LV302

Type

Two-step switch

With snap-in pegs

No snap-in pegs

Sealed contact with rubber cap (IP67)

With central LED

Button Type / Color

Black cap

Black cap

Black cap

Black rubber cap

White LED

Travel

1.5 mm

1 mm

1 mm

1 mm

1.5 mm

Operating Force

6 / 12 N

5 N

5 N

5 N

5 N



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



KS SERIES Single Pole Key Switches

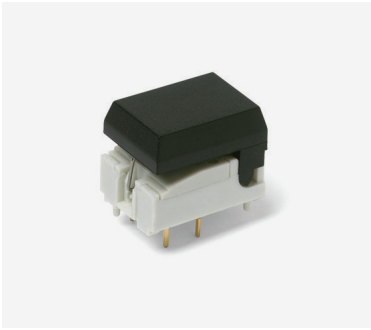
Features / Benefits

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**

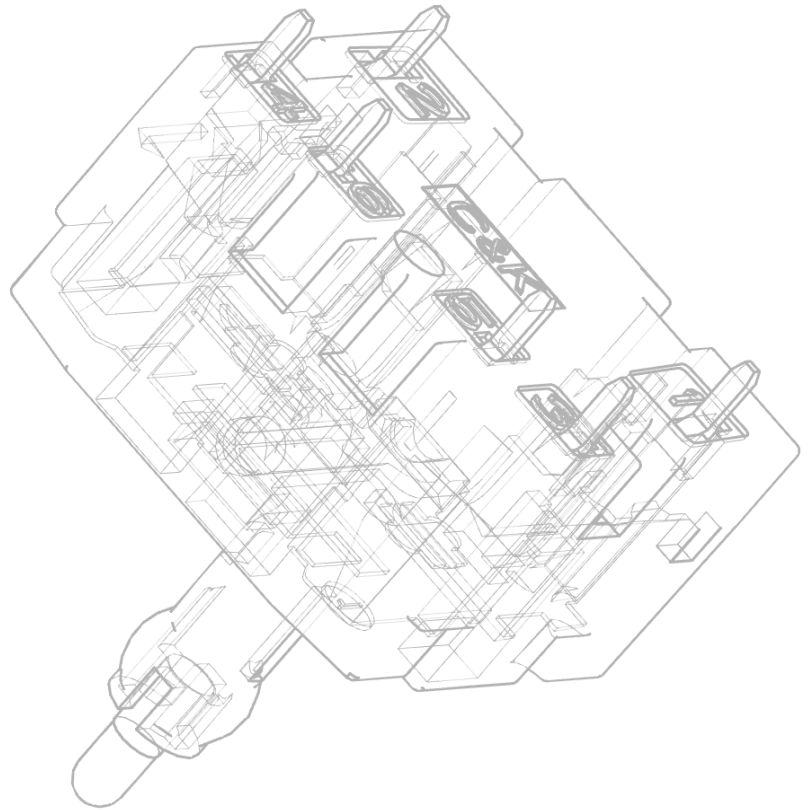
Features / Benefits

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.



SERIES

CS

SAM

Number of Directions

4

2 or 4

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

40 x 40 x 38

20.7 x 18.0
26.2 x 26.2

Total Height (mm)

58

27.85 or 31.85 or 27.6

**Actuation
Force (N)**

4.9 N

5.3 / 6 N

Contact Type

Silver

Silver

Max. Voltage (V)

10

14

**Max. Switching
Power (VA)**

.02

15

Life Cycles per Direction

10,000

30,000

Sealing

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

CS41001E

Circuit

SP4T

Mounting Type

Panel mount, front,
snap-in

Actuation Force

200 ±100 gf / 400 ± 200
gf / 500 ± 200 gf

Current Rating

0.2 A @ 12 VDC

Life Cycle

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

SAM-H2-LR10SPA

SAM-H2-LR14SPA

SAM-H2-MR14SPA

SAM-H4-MR11SPA

Circuit

SPDT

SPDT

SPDT

SPDT

Actuation Force

6.0 ± 2.0

5.3 ± 2.0

5.3 ± 2.0

6.0 ± 2.0

Life Cycle*

30,000 cycles

30,000 cycles

30,000 cycles

30,000 cycles

Travel (mm)

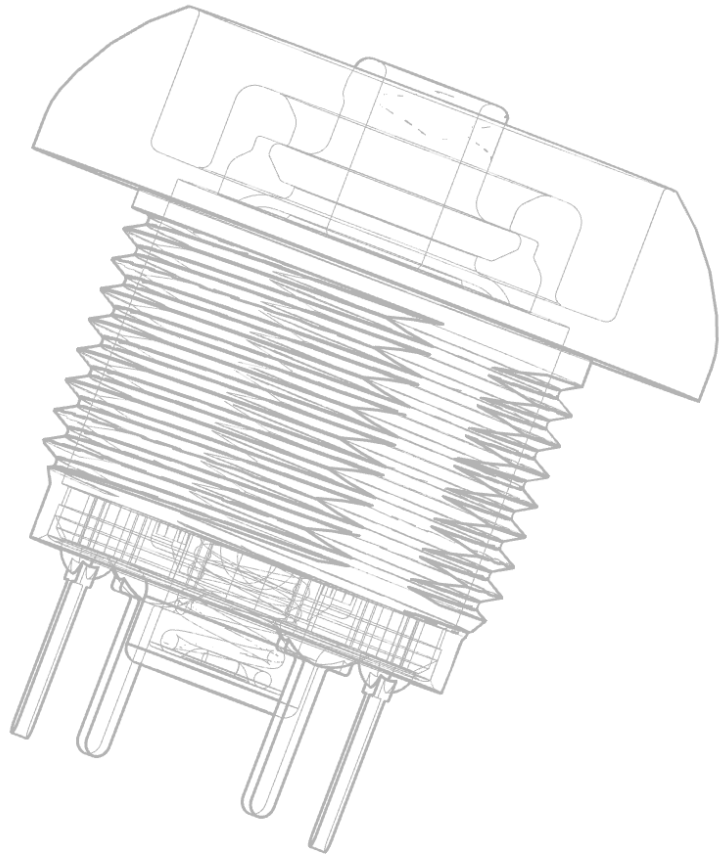
1.00 ± 0.4

1.25 ± 0.4

1.25 ± 0.4

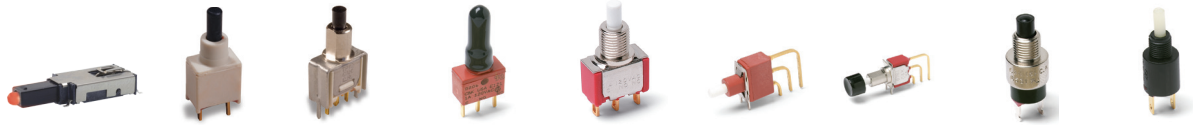
1.00 ± 0.4

* Life cycle per direction

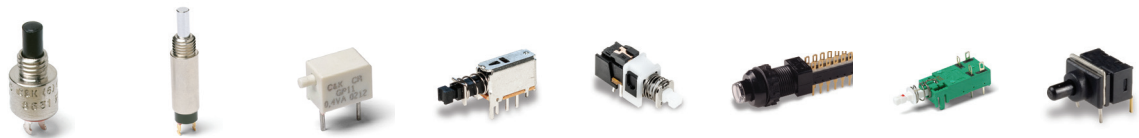
**PRODUCT SELECTION GUIDE**

Pushbutton Switches

C&K's extensive range of miniature, subminiature and ultra-miniature pushbuttons for printed circuit board, surface mount and panel mount applications include momentary and latching versions with the widest selection of actuator styles, shapes and colors. Available in SPST, SPDT, DPST and DPDT functions, C&K pushbuttons are also available in illuminated, sealed and low-profile configurations, and with smd, threaded or snap-in mounting options.



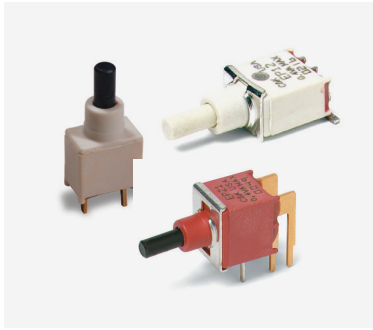
SERIES	ELUM	EP	TP	E020	8020	E010	8060	8500	KM
Switch Type	Mom. / Latching	Tiny	Tiny	Snap-acting Mom.	Snap-acting Mom.	Miniature	Alternate action	Sub-miniature	Sub-miniature
Poles / Throws	SPDT	SPST / SPDT / DPST	SPST / SPDT / DPST	SPDT / DPST	SPDT / DPDT / 3PDT / 4PDT	SPDT	SPDT / DPDT	SPST	SPST / SPDT
Max. Current	3.5 VA	1 Amp	1 Amp	1 Amp	1 Amp	4 Amps	6 Amps	3 Amps	1 Amp
Process Sealed		•		•		•			
Illuminated	•				•		•	•	
PCB Mount Options									
Thru-hole	•	•	•	•	•	•	•	•	•
Vertical		•	•	•	•	•	•	•	•
Right Angle	•	•	•	•	•	•	•	•	•
Surface Mount	•	•							
Panel Mount			•		•	•	•	•	•



SERIES	8600	8700	GP	PN	PHB	F	NE-18	FP
Switch Type	Micro-miniature	Over travel	Ultra-miniature	Alternate & Mom. action	Short stroke	Alternate & Mom. action	Mains / Power	Ultra-miniature
Poles / Throws	SPST	SPST	SPST / SPDT	SPDT / DPDT / 4PDT	DPDT / 4PDT	DPDT / 4PDT / 6PDT / 8PDT / 10PDT	DPST / DPDT / Varied	SPST
Max. Current	500 mA	1 Amp	0.4 VA	200 mA	100 mA	500 mA	6 A	0.4 VA
Process Sealed			•					•
PCB Mount Options								
Thru-hole	•	•	•	•	•	•	•	•
Vertical	•	•	•	•				•
Right Angle			•	•	•			•
Surface Mount			•					
Panel Mount	•	•				•	•	



SERIES	PVA	AP	APB	NP	PNP	ATP	PBA	PS
Switch Type	Push-push Mom.	Industrial	Industrial	Sealed power	Industrial	Snap-acting Mom. / Lock	Snap-acting Mom.	Subminiature / Microminiature
Poles / Throws	DPST / DPDT	SPST	SPST	SPDT	SPST N.O. / SPST N.C. / SPDT	SPST / SPDT / DPDT	DPST	SPDT / DPDT
Max. Current	100 mA	400 mA	400 mA	5 Amp	10 mA / 3 A / 5 A	3 A / 2 A	250 mA	0.1 / 1 A / 0.3 / 2 A
Process Sealed	IP40	IP67	IP67	IP68	IP68	IP67		
PCB Mount Options								
Thru-hole	•	•	•	•	•		•	•
Vertical	•	•	•	•			•	•
Right Angle								•
Panel Mount		•	•	•	•		•	•
Wire Leads		•	•	•	•	•		
Solder Lug		•	•		•	•		
Surface Mount								
Quick Connect						•		



EP SERIES
Sealed Tiny Pushbutton Switches

Features / Benefits

Sealed against solder & cleaning processes
Snap-fitting actuator accepts standard caps
Contact rating 0.4VA 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

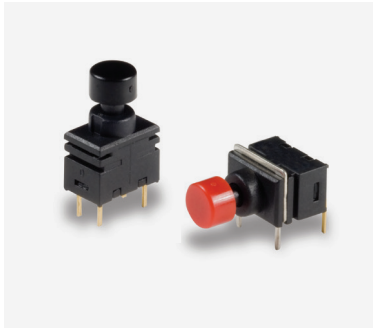
Contact Rating

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



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)



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

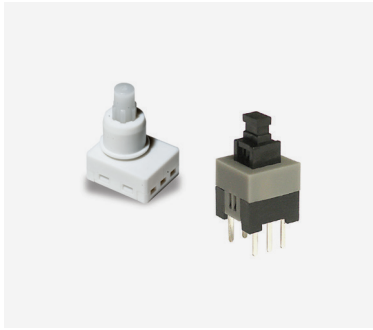
Typical Applications

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



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



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
PVA1OAH1 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
PVA2OAH5 1.7N V2	DPDT	Momentary	13 mm	2.4 mm	1.7 N



ATP SERIES
Anti-Vandal Pushbuttons

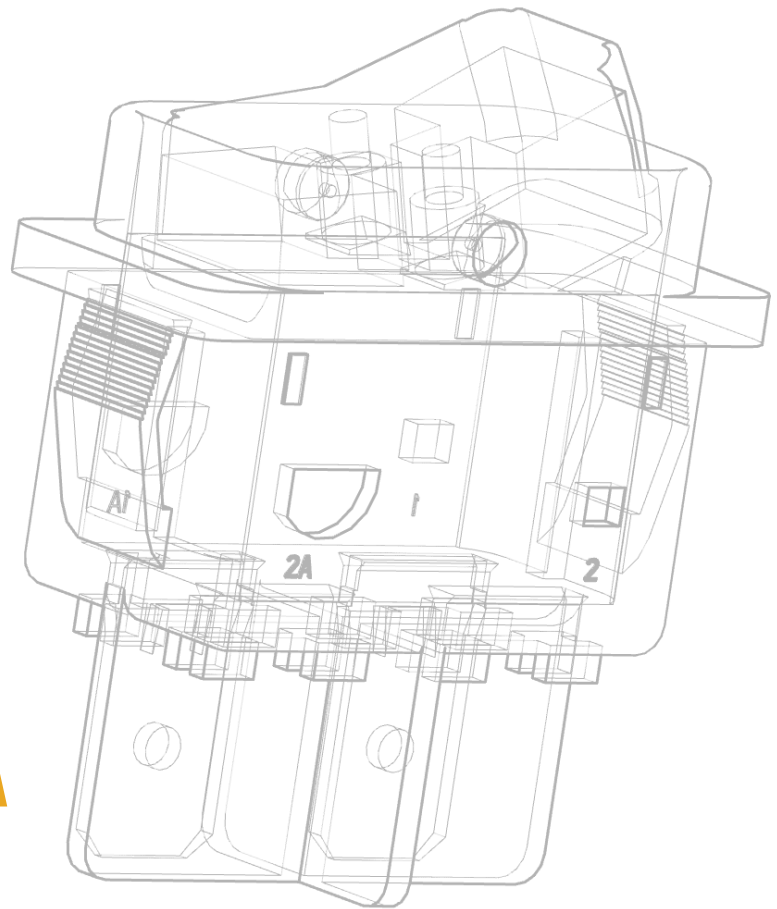
Features / Benefits

- 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



PRODUCT SELECTION GUIDE

Rocker Switches

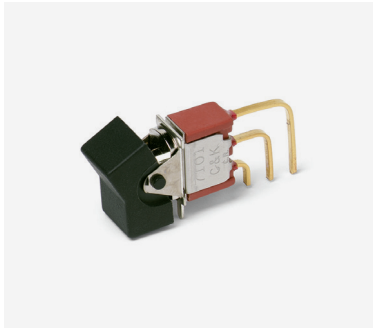
A rocker switch is an electrical on / off switch that rocks from one side to the other when pressed, leaving one side raised and the other depressed. This rocking mechanism will either connect or disconnect an electrical circuit. C&K's selection of rocker switches includes subminiature, miniature and power, providing an extensive range for printed circuit board through-hole, surface mount and panel mount applications. Models are available in illuminated (LED and incandescent) 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	D
Switch Type	Miniature	Miniature	Subminiature	Subminiature	Power rocker & lever handle	Miniature power	Miniature power
Poles / Throws	SPDT / DPDT / 3PDT / 4PDT	SPDT / DPDT / 3PDT	SPST / SPDT / DPDT	SPST / SPDT / DPDT	DPDT	SPST / SPDT	SPST / SPDT / DPST / DPDT
Max. Current	5 Amps	7.5 Amps	3 Amps	3 Amps	10 Amps	16 Amps 10 Amps	4 Amps 10 Amps
Washable		•	•				
Illuminated						•	
PCB Mount Options							
Front Mount	•	•		•	•	Snap-in	Snap-in
Rear Mount	•	•	•	•	•		
PCB Mount Options							
Vertical	•	•	•	•	•	•	•
Right Angle	•	•	•	•	•	•	•
Surface Mount			•				



SERIES	DM	DM	DF	CR	SW
Switch Type	Miniature, 2 pole power	Miniature, illuminated, power	Power	Round	Miniature, power
Poles / Throws	DPST / DPDT	SPST / DPST	SPST / SPDT / DPST	SPST / SPDT	SPST / SPDT / DPST
Max. Current	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
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

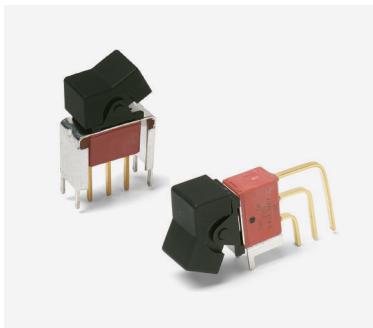
Contact Rating:

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

Typical Applications

Telecommunications
 Instrumentation
 Medical equipment

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

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

Typical Applications

Telecommunications
 Instrumentation
 Computers & peripherals

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

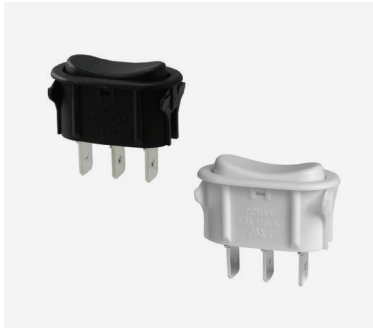
Contact Rating:

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

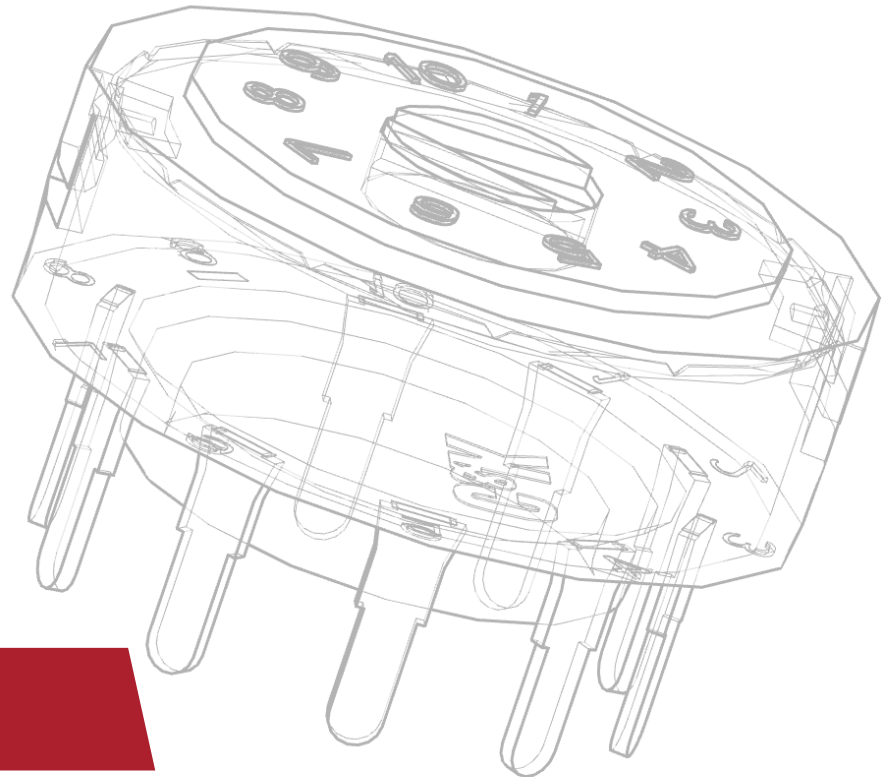
Black

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			•						
Non-shorting / 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

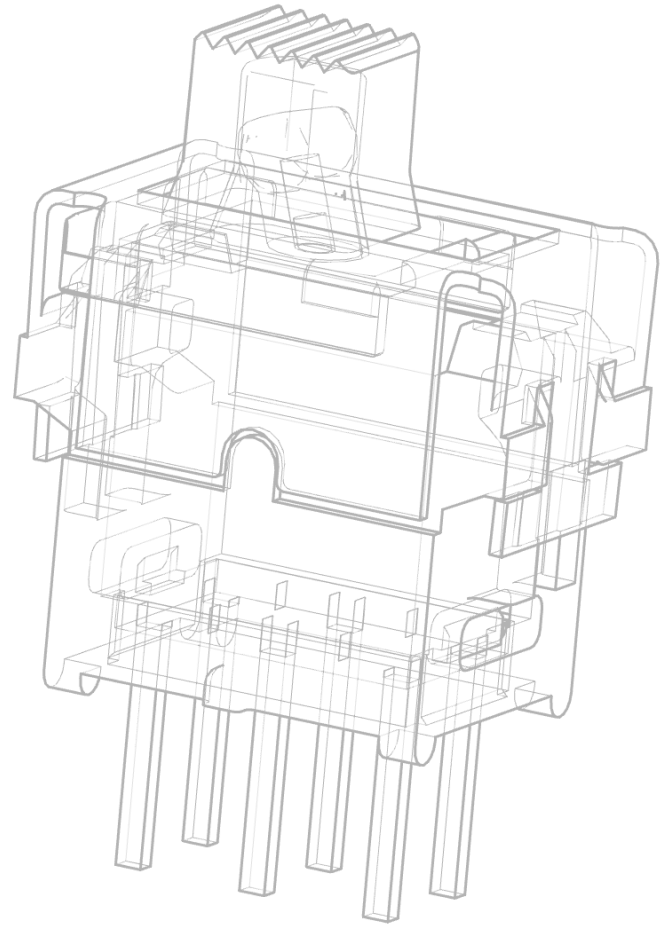
600 ± 20% gf

Operating Life

300,000 cycles

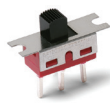
Termination

SMT

**PRODUCT SELECTION GUIDE**

Slide Switches

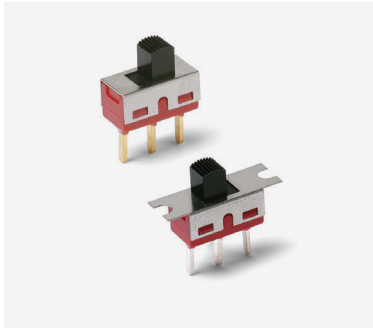
Featuring ultra-miniature, micro, miniature, standard, industrial and power versions, C&K has slide switches compatible for printed circuit board, surface mount and panel mount applications. Available in SPST, SPDT, SP3T, DPST, DPDT, 3PDT, 4PDT and 4P3T functions, C&K provides slide switches with positive detent, sealing, and shorting or non-shorting contacts options.



SERIES	ES	TS	1000	GS	L	LP	S
Switch Type	Tiny	Tiny	Miniature	Ultra-miniature	Miniature	Miniature	Power
Poles	1 & 2	1	1 & 2	1	1 & 2	1 & 2	1 & 2
Momentary			•		•		•
Process Sealed	•			•			
Splashproof	•				•		
Screwdriver Slot					•		•
Housing Marking						•	•
Tape & Reel	•			•			
Max. Current	0.4 VA	3 A	6 A	0.4 VA	4 A	11 A	15 A
Terminations							
Wire Wrap		•	•		•		
Quick Connect			•				•
Wire Lead					•	•	•
Solder Lug			•		•	•	•
PC	•	•	•	•	•		•
PCB Mount Options							
Thru-hole	•	•	•	•	•	•	•
Vertical	•	•	•	•	•	•	•
Right Angle	•	•	•	•			•
Surface Mount	•			•			
Panel Mount Options							
Snap-in						•	•
Mounting Ears			•		•		•
Right Angle	•	•	•	•			•



SERIES	V	OS	PCM	AYZ	JS	JSM	JSX	SS	SK
Switch Type	Power & line voltage	Miniature	Low profile	Low profile	Low profile	Low profile	Low profile	Miniature	Miniature
Poles	1 & 2	1 & 2	1	1 & 2	1 & 2	1	1	1, 2 & 4	1, 2 & 4
Momentary						•	•		
Process Sealed									
Splashproof									
Screwdriver Slot	•								
Housing Marking									
Tape & Reel			•		•	•	•		
Max. Current	10.1 A	200 mA	0.3 A	100 mA	0.3 A	0.3 A	10 mA	0.3 A	0.3 A
Terminations									
Wire Wrap									
Quick Connect	•								
Wire Lead									
Solder Lug		•							
PC	•	•	•	•	•			•	•
PCB Mount Options									
Thru-hole	•	•			•			•	•
Vertical	•	•			•			•	
Right Angle	•	•			•				•
Surface Mount			•	•	•	•	•		
Panel Mount Options									
Snap-in	•								
Mounting Ears	•	•						•	
Right Angle	•								



1000 SERIES Miniature Slide Switches

Features / Benefits

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

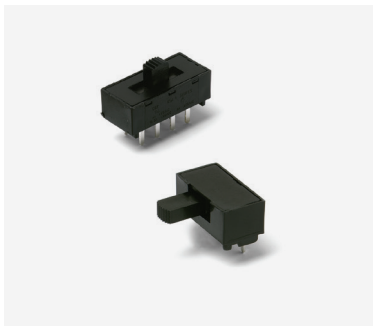
Contact Rating:

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
1101M2S3CBE2	SPDT On-None-On	PC mount without tabs	.200" high	PC thru-hole	Gold	100,000 cycles
1101M2S3AV2QE2	SPDT On-None-On	PC mount without tabs	.200" high	Vertical right angle, PC thru-hole	Silver	40,000 cycles
1101M1S3ZQE2	SPDT On-None-On	Panel mount with tabs	.200" high	Solder lug	Silver	40,000 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
L102011MS02Q	SPDT	.200" high	PC thru-hole	Silver	10,000 cycles
L202011MS02Q	DPDT	.200" high	PC thru-hole	Silver	10,000 cycles
L20202MA04Q	DPDT	.335" high	Right angle, PC thru-hole	Silver	10,000 cycles
L202031MS02Q	DPDT	.375" high	PC thru-hole (with detent)	Silver	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 VAC 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



AYZ SERIES

Miniature Slide Switches

Features / Benefits

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

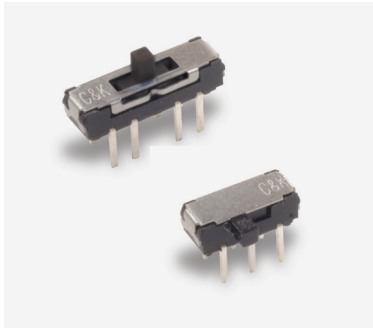
Contact Rating:

100mA @ 12 V DC

Typical Applications

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

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



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
JS203011CQN	DP3T	PC thru-hole	Copper alloy, silver plated	5,000 cycles
JS202011SCQN	DPDT	Surface mount	Copper alloy, silver plated	5,000 cycles
JS202011AQN	DPDT	Right angle, PC thru-hole	Copper alloy, silver plated	5,000 cycles



PCM SERIES
Sub-Miniature Slide Switches

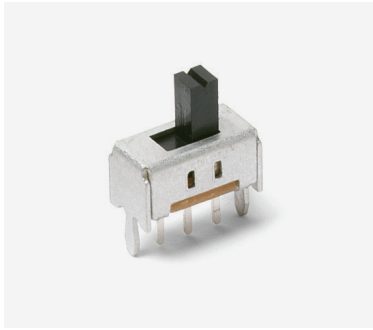
Features / Benefits

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



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
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
OS103011MS8QP1	SP3T, On-On-On, non-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



SS SERIES
Miniature Slide Switches

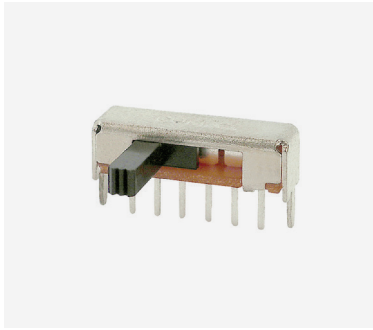
Features / Benefits

- 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



SK SERIES
Miniature Slide Switches

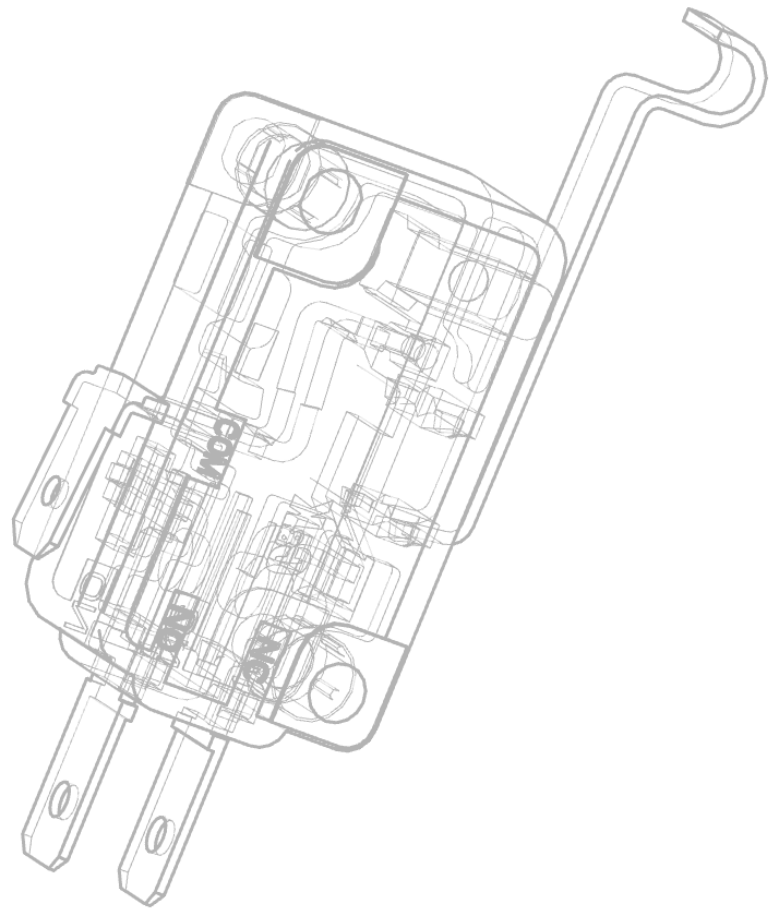
Features / Benefits

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

**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	TF	TM	LC	LCA	LCS	SSW	MM	ZM	ZPA
Switch Type	Miniature	Miniature	Sub-miniature precision	Sub-miniature	Sealed sub-miniature	Sub-miniature	Sub-miniature precision	Sub-miniature	Sub-miniature
Poles / Throws	SPST / SPDT	SPST / SPDT	SPST / SPDT	SPDT	SPST	DPDT	SPDT	SPDT	SPST
Maximum Current	21 Amps	15 Amps	10.1 Amps	10 Amps	6 Amps	20 mA	7 Amps	3 Amps	0.1 Amp
PCB Mount Options									
Solder	•	•	•	•	•				
Turret							•		
Quick Connect	•	•	•	•	•				
Screw		•							
Wire Leads			•		•				
PC			•		•		•	•	
Formed PC			•		•		•	•	
Extended Operations	•	•	•	•					
Surface Mount						•			•



SERIES	ZMA	ZMS	MDS	HB	A	TL	ZMSM	TFS	MS
Switch Type	Subminiature	Sealed sub-miniature	Subminiature	Standard precision	General purpose	Door interlock	Sealed sub-miniature	Sealed mini-ature	Subminiature
Poles / Throws	SPDT	SPDT	SPDT	SPST / SPDT	SPST / SPDT / DP	SPDT	SPDT	SPDT	SPST / SPDT
Maximum Current	3 Amps	3 Amps	300 mA	20 Amps	30.1 Amps	15 Amps	3 Amps	10 Amps	0.1 / 5 Amps
Terminations									
Solder		•	•	•		•	•		•
Quick Connect				•	•	•		•	•
Wire Leads		•					•	•	
Screw				•		•			
PCB Thru-hole	•	•	•				•		•
Flat & Step Base				•					
Bushing				15/32-32	3/8-23				
Sealed		•		•			•	•	



TF SERIES
Miniature 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



LC SERIES
Subminiature 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



SSW SERIES
Subminiature 2 Pole Snap-acting Switches

Features / Benefits

SMT
 IP67
 Redundant contacts
 Change over time <15ms
 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



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



MS SERIES
Snap-acting Switches

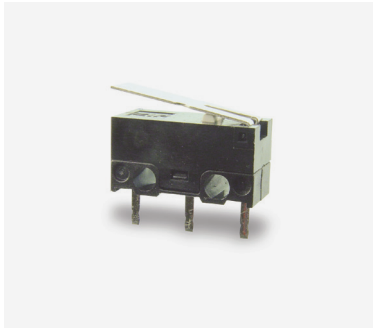
Features / Benefits

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
Subminiature 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



LCS SERIES
Subminiature 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



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



ZPA SERIES
Surface Mount Snap-acting Switches

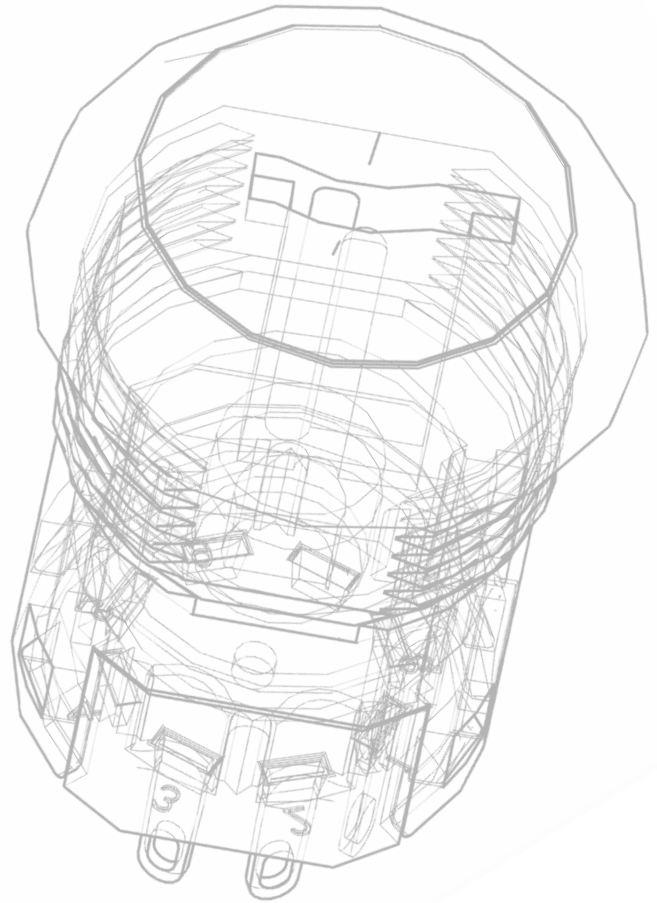
Features / Benefits

- 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

**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	PF	PM
Switch Type	4, 5, 6 Tumbler	4 Tumbler	4 Tumbler	5 Tumbler	5 Tumbler
Lock	Metal	Metal	Metal	Plastic	Plastic
Latch Pawl	•				
Miniature		•	•	•	•
Anti-static	•				
Momentary	•				
Poles	1 & 2	1 & 2	1	1 & 2	1
Indexing	45° & 90°	45° & 90°	90°	45° & 90°	90°
Max. Current	4 Amps	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

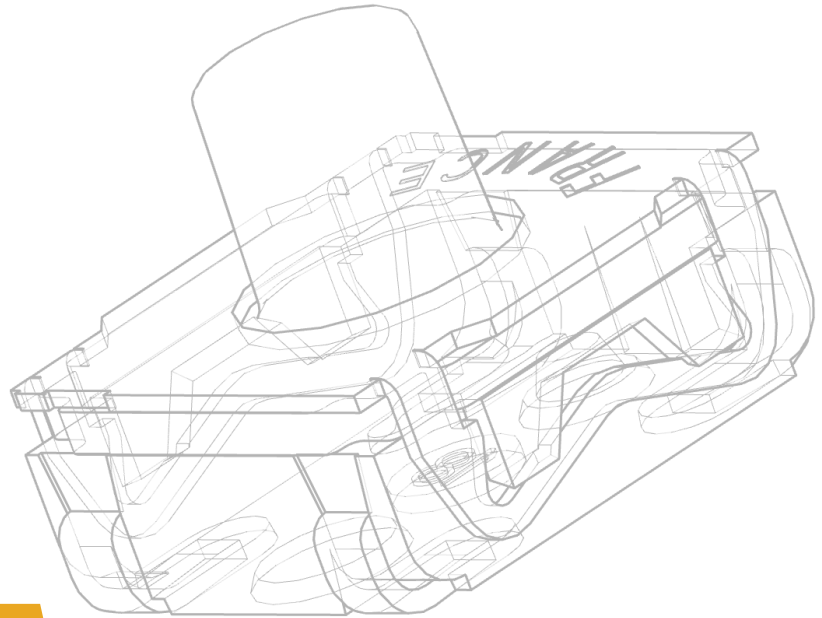
Contact Rating:

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	SR, 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.

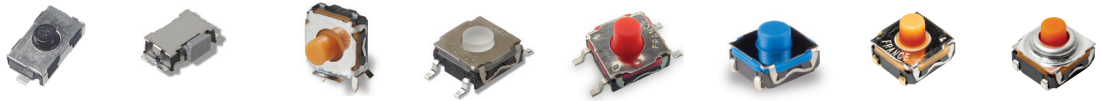


NEW

Surface Mount							
SERIES	KXT3	KMT0	KMT2	KMR2-8	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 / 330gf	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	100,000	150,000 to 500,000
IP Rating	IP64	IP68	IP54	IP40	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	50,000 to 100,000	100,000 to 200,000	200,000 to 1,000,000	100,000
IP Rating	IP40	IP40	IP40	IP40	IP40	IP40	IP40

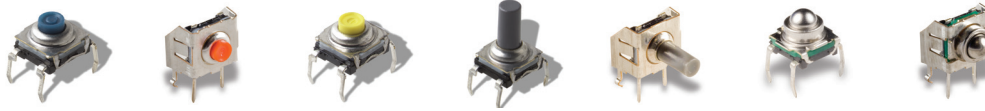


NEW NEW

Surface Mount Thru-Hole Options							
SERIES	KSR	KSS	KSC4V2	KSC1-10		KSC DCT	KSC PF
Size on PCB L x W (mm)	7.15 x 3.8 / 7.3 x 3.8	5.5 x 4.4	2 holes ø 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	6.8 x 6.2
Total Height (mm)	2.5	1.7	5.0*			5.2	5.2
Travel (mm)	0.3 to 0.5	0.3	0.7*		0.20 to 0.75 *	0.85	0.5 to 1.0
Actuation Force (N)	1.2 / 2.0 / 3.0 / 45	2 / 2.5 / 4	3.5*		1.1 to 5.5 *	4.75	1.7 to 6.25
Contact Type	Silver / Gold	Silver / Gold	Silver / Gold		Silver / Gold	Silver	Silver
Max. Voltage (V)	32	32	32		32	32	32
Max. Switching Power (VA)	1 / 0.2	1 / 0.2	1 / 0.2		1 / 0.2	1	1
Life Cycles	100,000 / 200,000	100,000	300,000		100,000 to 1,000,000	100,000	300,000 to 1,000,000
IP Rating	IP50	IP40	IP67		IP67	IP67	IP67



Surface Mount Thru-Hole Options						
SERIES	KSE	KT	K5AT	K8	K5V	KSF/KSI
Size on PCB L x W (mm)	6.8 x 6.2	SA 7.5 x 5 SA2 7.5 x 7	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
Total Height (mm)	3.1 / 4.3	6.6 / 7.11 with tab	6.1	6	9 / 13	2.6
Travel (mm)	0.3	0.3 to 0.5	0.5	0.45	1.2	0.3 to 0.5
Actuation Force (N)	1.5 / 2.25	3	4.0	4.0	4.0	1.3 / 1.6 / 3.0 / 5.0
Contact Type	Silver	Silver / Gold	Gold	Silver	Gold	Silver / Gold
Max. Voltage (V)	32	50	32	32	32	32
Max. Switching Power (VA)	1	1 / 0.2	1	1	1	1 / 0.2
Life Cycles	300,000	100,000	100,000	300,000	25,000	100,000
IP Rating	IP67		IP40	IP40	IP40	IP60



Surface Mount Thru-Hole Options

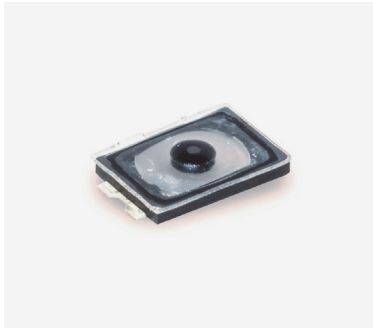
SERIES	KSA	KSA-V	KSA MKII	KSL	KSL-V	KSJ	KSJ-V
Footprint	7.62 x 5.08	7.62 x 2.54	7.62 x 5.08	7.62 x 5.08	7.62 x 2.54	7.62 x 5.08	7.62 x 2.54
Total Height (mm)	4.7 button option	8	4.7	9.9	8	6.65	8
Travel (mm)	0.3 to 0.5	0.3 to 0.5	0.3 to 0.5	0.3 to 0.5	0.3 to 0.5	0.55 to 0.7	0.55 to 0.7
Actuation Force (N)	1.3 / 3.0 / 5.0	1.3 / 3.0 / 5.0	1.3 / 3.0 / 5.0	1.3 / 3.0	1.3 / 3.0	2.0 / 3.0	2.0 / 3.0
Contact Type	Silver / Gold	Silver / Gold	Silver / Gold	Silver / Gold	Silver / Gold	Silver / Gold	Silver / Gold
Max. Voltage (V)	32	32	32	32	32	32	32
Life Cycles	100,000	100,000	100,000 / 1,000,000	100,000	100,000	100,000	100,000 / 30,000
IP Rating	IP60	IP60	IP67	IP60	IP60	IP60	IP60



NEW

Surface Mount Thru-Hole Options

SERIES	PTS636	PTS641	PTS645	PTS645-V	PTS647	PTS125	ITS
Footprint	6 x 3.5	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 / 4.3 / 5.0	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	
Travel (mm)	0.25 to 0.30	0.20 / 0.30	0.25	0.25	0.25	0.30	0.25
Actuation Force (N)	130 gf / 180 gf / 250 gf / 320 gf	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	Silver
Max. Voltage (V)	12	12	12	12	12	12	12
Life Cycles	20,000 to 100,000	100,000	100,000	100,000	100,000	200,000	50,000
IP Rating	IP40	IP40	IP40	IP40	IP40	IP40	IP40



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

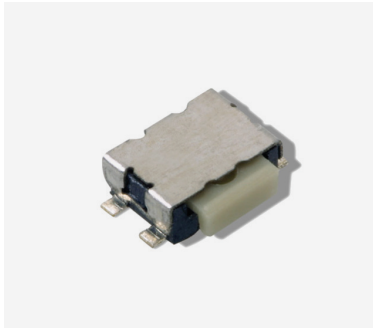
Features / Benefits

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



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
KSR223GNC LFG	2.0 N	Gold	Normally closed	30,000 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

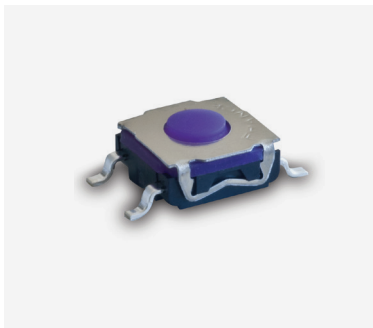
Features / Benefits

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



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



KSC4V2 SERIES
Side Actuated Sealed Tact Switches

Features / Benefits

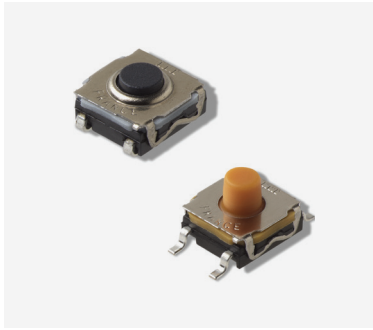
Full SMT compatible side actuated
Haptic adaptability
Pin in paste terminations
IP67

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

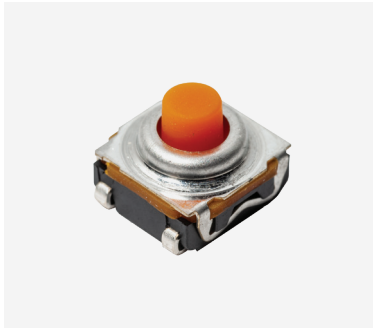
Features / Benefits

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

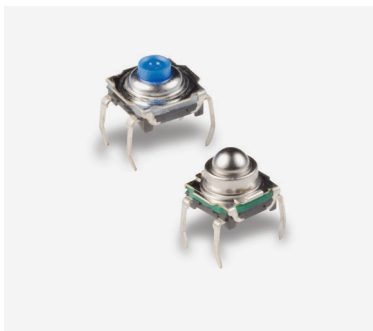
Features / Benefits

Extended cage
Silicone actuator
J or G terminations
IP67

Typical Applications

Automotive
Medical equipment
Industrial electronics

PART NUMBER	Operating Force	Contact Material	Operating Life	Travel
KSC421G 70SH LFS PF	1.8 ± 0.45 N	Silver	300,000 cycles	0.5 ± 0.25 mm
KSC422J 70SH LFS PF	1.8 ± 0.45 N	Silver	1,000,000 cycles	0.5 ± 0.25 mm
KSC441G 70SH LFS PF	4 ± 1 N	Silver	300,000 cycles	0.65 ± 0.25 mm
KSC461J 70SH LFS PF	6.25 ± 1.75 N	Silver	300,000 cycles	0.75 ± 0.25 mm
KSC471J 70SH LFS PF	4 ± 1 N	Silver	300,000 cycles	0.65 ± 0.25 mm



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	Operating Force	Contact Material	Operating Life	Travel
KSA0M411 LFTR	3 ± 0.75 N	Silver	100,000 cycles	0.6 ± 0.2 mm
KSA0M211 LFTR	1.4 ± 0.4 N	Silver	100,000 cycles	0.5 ± 0.2 mm
KSJ0M41180SH LFTR	3.3 ± 0.8 N	Silver	100,000 cycles	0.55 ± 0.25 mm



K8 SERIES
Lighted SMT Tact Switches with Rugged LED Mounting Process

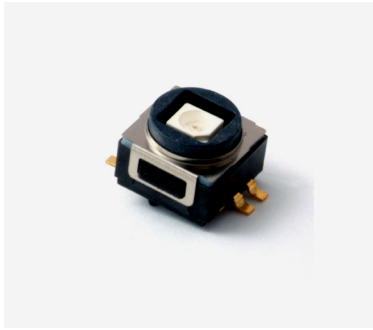
Features / Benefits

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

Typical Applications

Automotive
Network equipment
Telecommunications
Medical equipment
Industrial controls

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



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



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



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



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	Total Height	Operating Force	Operating Life	Termination
PTS125SJM73 SMTR-2 LFS	7.3 mm	180 gf	200,000 cycles	SMT
PTS125SK43-2 LFS	4.3 mm	250 gf	200,000 cycles	THT



PTS526 SERIES
Microminiature SMT Top Actuated

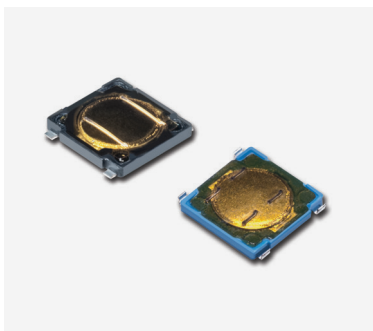
Features / Benefits

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

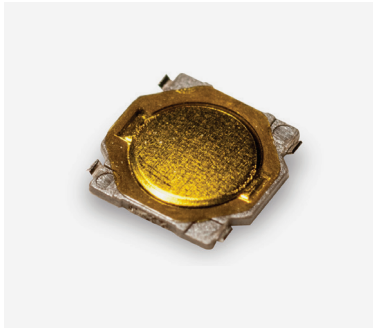
Features / Benefits

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



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



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

PTS641SM31SMTR2LFS

PTS641TK25SMTR2LFS

Total Height

3.1 mm

2.5 mm

Operating Force

160 gf

250 gf

Operating Life

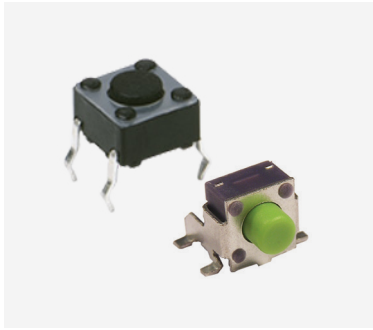
100,000 cycles

100,000 cycles

Ground Pin

No

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



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 3.5 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

PTS840PMSMTR LFS

PTS840GMPMTR LFS

PTS840GKPSMTR LFS

PTS840ESDPMSMTR LFS

Operating Force

160 gf -40/+70 gf

160 gf -40/+70 gf

220 gf -70/+80 gf

160 gf -40/+70 gf

Operating Life

100,000 cycles

100,000 cycles

100,000 cycles

100,000 cycles

Ground

No

No

No

Yes

Termination Style

Pin in paste

Gull wing

Gull wing

Pin in paste

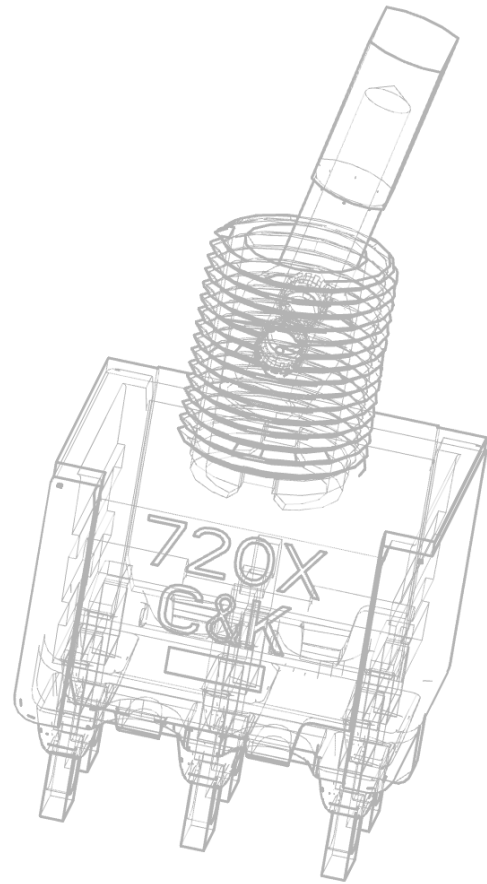
Pegs

No

Yes

Yes

No

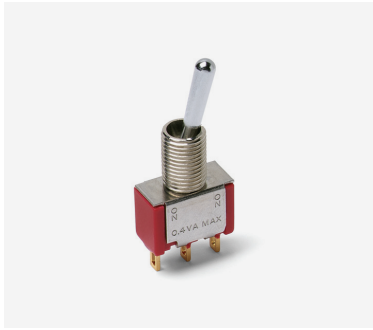
**PRODUCT SELECTION GUIDE**

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 10A versions. With printed circuit board, SMT and bushing options, C&K toggle switches feature vertical, right angle and vertical right angle mounting brackets.



	NEW							
SERIES	7000	MILITARY	E	ET	T	GT	9000	PT
Switch Type	Miniature	Miniature	Miniature	Sub-miniature	Sub-miniature	Ultraminiature	Power	Sealed 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
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
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

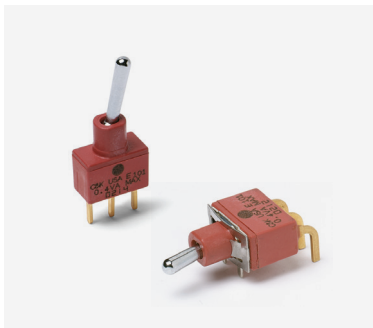
Contact Rating:

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



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

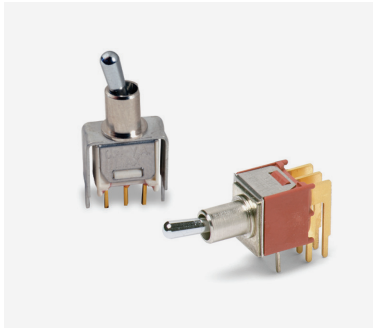
Contact Rating:

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

Typical Applications

Telecommunications
Instrumentation
Medical equipment

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



T SERIES Subminiature Toggle Switches

Features / Benefits

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

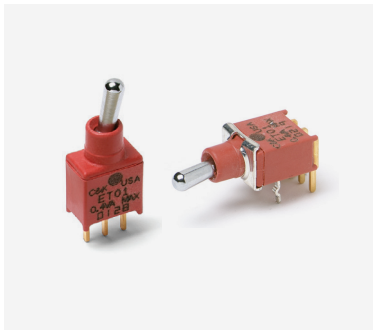
Contact Rating:

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



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

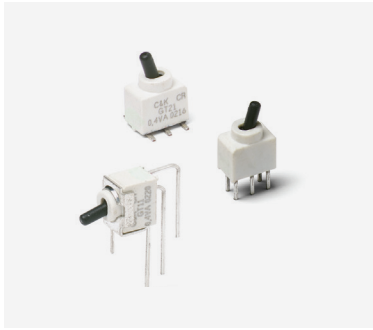
Contact Rating:

Gold 0.4 VA MAX. @ 20 V AC or DC MAX.
Silver 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
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



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



PT SERIES
Sealed Power Toggle Switches

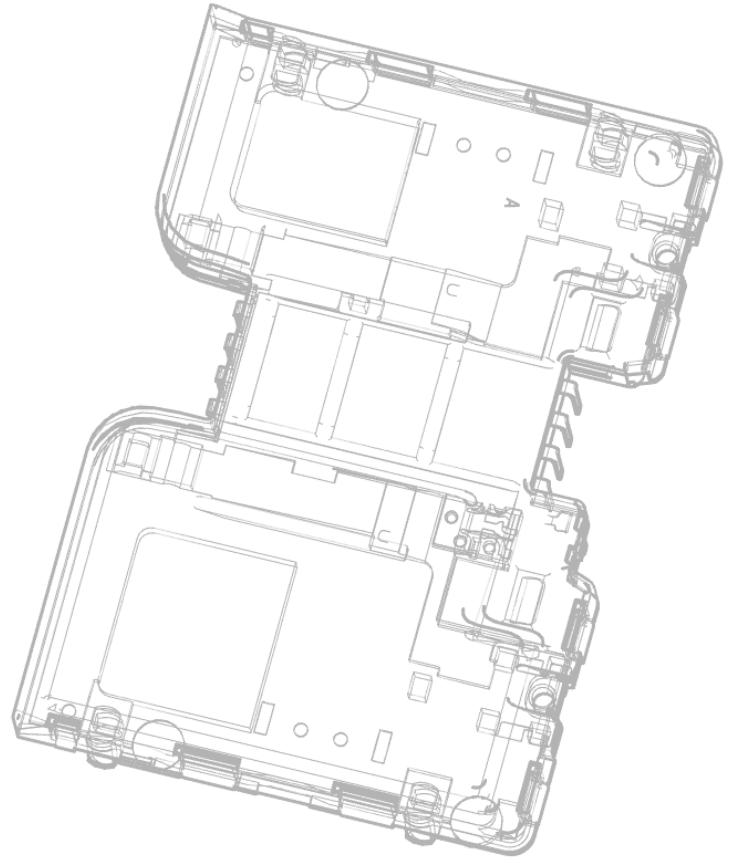
Features / Benefits

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
PT103SSQ	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

**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

CCM01-2327 LFT

Number of Contacts

8

Termination

SMT

Operating Life

600,000 cycles

Card Insertion Force

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

CCM01-2563 LFT

CCM01-2565 LFT

CCM01-2663 LFT

CCM01-2664 LFT

Cover

Plastic

Plastic

Metal

Metal

Number of Contacts

8

8

8

8

Termination

SMT

SMT

SMT

SMT

Operating life

500,000 cycles

500,000 cycles

500,000 cycles

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

CCM03-3003 LFT

CCM03-3009 LFT

CCM03-3013 LFT

CCM03-3754 LFT

Number of Contacts

8

6

6

6

Termination

SMT

SMT

SMT

SMT

Contact Plating

Inlay

Gold

Gold

Inlay

Cover

Hinged

Hinged

Hinged

Fixed

Card Presence Switch

Without

Without

With

With

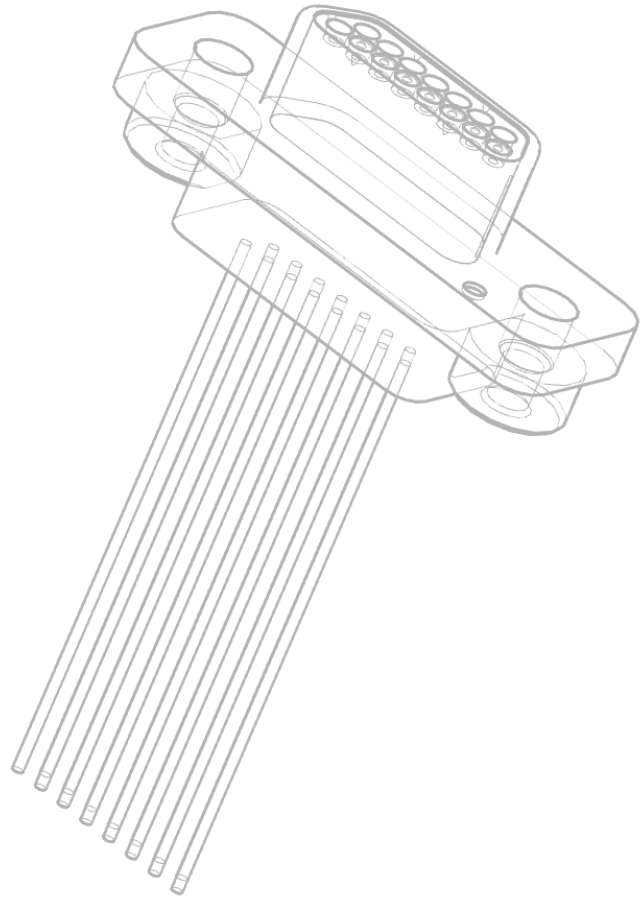
Operating Life

10,000 cycles

10,000 cycles

10,000 cycles

10,000 cycles

**PRODUCT SELECTION GUIDE**

High Rel Connectors

C&K's D-Sub series of connectors are extremely reliable and high-performing, helping customers design the next generation of military, industrial, aerospace and space applications. The D-Sub series of 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.



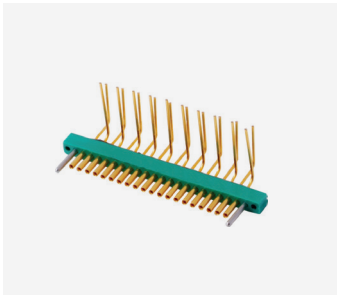
D-SUBMINIATURE CONNECTORS

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.



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.



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.



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.

PART NUMBER	PAGE NUMBER	PART NUMBER	PAGE NUMBER
1101M2S3AV2QE2	48	D6R10 F1 LFS	21
1101M2S3CBE2	48	D6R90 F1 LFS	21
1101M2S3CQE2	48	DF62J12S215PQA	39
1101M1S3ZQE2	48	DF62J12S2AHQA	39
7101J1ABE2	38	DF62J12S2APQA	39
7101J1AQE2	38	DS1D6AQ1	58
7101J1AV2QE2	38	DS2D6BQ1	58
7101P3YZQE	79	DS2D6CQ1	58
7101SYCQE	79	E101J1AQE2	38
7101SYZQE	79	E101J3V31QE2	38
7103SYZQE	79	E101MD1ABE	79
7201SYZQE	79	E101MD1AQE	79
8121J81ZGE22	31	E101MD1AV2GE	79
8121SHZGE	31	E103MD1ABE	79
8125SHZBE	31	E105SD1CBE	79
8221SHZGE	31	E201J1V31QE2	38
8125SHCBE	31	ENCOS16DS5C	44
A10305RNCB	43	EP11SD1ABE	30
A11405RNZQ	43	EP11SD1AVBE	30
A20605RNCQK	43	EP11SD1SAPE	30
ADPDC2T04AC	56	EP11SD1CBE	30
AP2D200TWBE	32	EP11SD1SAPE	30
AP2D300SZBE	32	ET01MD1ABE	80
AP4D200TZBE	32	ET01MD1CBE	80
AP4E300TZBE	32	ET01MD1SAPE	80
APB4E01TZBE-001	33	ET08LD1CBE	80
APB4E01TZBE-002	33	ET21MD1AQE	80
ASKHC2J04AC	56	FDS0001R	12
ASKHC2T04AC	56	FDS0002R	12
ATP16-DL1-000-B4SA-04G	35	FDSE001R	12
ATP16-DL5-606-B3SA-04G	35	FDSE002R	12
ATP16-SL1-612-M4SA-04G	35	FP11SPA1B1TP02	31
ATP19-SL3-624-B0DA-03Q	35	FP11SPC1B1TP00	31
ATP19-SL4-612-M0DE-03Q	35	FP11SPC1B1TP02	31
ATP19-SL1-324-B0SE-03Q	35	FP11SPA1B1TP03	31
ATP22-SL3-724-B0SE-03Q	35	FP11SPC1B1TP03	31
ATP22-SL3-312-B0SA-03Q	35	GT11MCBE	81
ATS2D1GNC LFS	11	GT11MSABETR	81
ATS2D3GNC LFS	11	GT11MSCBETR	81
AYZ0102AGRLC	49	GT23MAVBE	81
AYZ0202AGRLC	49	H1011U2F205NQ	61
AYZ0203AGRLC	49	H200AA2F205NQ	61
BPA01B	17	H201132F205NQ	61
BPA04B	17	HDT0001	8
BPA05SB	17	ITS10FV1ST	71
CCM01-2327 LFT	83	ITS13FV2SR	71
CCM01-2563 LFT	83	ITS23FR1ST	71
CCM01-2565 LFT	83	ITS40FR2ST	71
CCM01-2663 LFT	83	ITS50FV3SR	71
CCM01-2664 LFT	83	JS202011AQN	50
CCM03-3003 LFT	83	JS202011SCQN	50
CCM03-3009 LFT	83	JS203011CQN	50
CCM03-3013 LFT	83	K12A BK 1 5N	21
CCM03-3754 LFT	83	K12C 1 5N	21
CD10RM0SBR	18	K12GO BK 1.5 6/12N	21
CD16RM0SBR	18	K12P BK 1 5N	21
CRD10RM0CB	18	K12PL WH 1.5 5N LV302	21
CRD16CM0SBR	18	K12SC D 1.5 4/8N OO LFTX	22
CS41001E	26	K12SC L 1.5 WHO 9N O LFTX	22
D101J12S215PQA	39	K12SB S 1.5 3.5N C LFTX	22
D501J12S2AHQA	39	K12SB S 1.5 9N O LFTX	22
D502J12S2AHQA	39	K5AT GA 43 G	71
D6C90 F1 LFS	21	K5AT WH 43 G	71
D6L90 F1 LFS	21	K5V 1 BA 43 T P3	72
		K5V 1 BU 43 T	72
		K5V 1 YG 43 T	72
		K5V 4 BU 43 G P3	72

PART NUMBER	PAGE NUMBER	PART NUMBER	PAGE NUMBER
K5V 5 WH 43 G	72	MS-105A01 (H)	56
K8xx41G LFS	70	MS-118305-G	56
KM1202A08BE	10	MS-118405-H	56
KM1202A08QE	10	NP8S2D203QE	33
KMR211G LFS	66	NP8S2D2W4QE	33
KMR621NG LFS	66	NP8S2R203QE	33
KMR73N1G LFS	66	NP8S2T203QE	33
KMS221G LFS	67	NP8S3D203QE	33
KMS231G LFS	67	OS102011MS2QN1	51
KMT011NGJ LHS	66	OS103011MS8QP1	51
KMT031NGJ LHS	66	OS202011MA0QN1	51
KMT071NGJ LHS	66	OS202011MS2QS1	51
KS11 R2 2 C Q D	22	PCM12SMTR	50
KS12 R2 1 C B D	22	PCM13SMTR	50
KS12 R2 3 C B E	22	PNP8S2D2YW2QE	34
KSA0M211 LFTR	70	PNP8S2T2C03GE	34
KSA0M411 LFTR	70	PNP8S2T2C03QE	34
KSC241J LFS	69	PNP8S2T2CW3QE	34
KSC321J LFS	69	PS-12G01	32
KSC421G 70SH LFS PF	70	PS-12G03	32
KSC422J 70SH LFS PF	70	PS-2214-F NS PA	32
KSC441G 70SH LFS PF	70	PS-2214-L NS PA	32
KSC441J 70SH LFS	69	PT101SSQ	81
KSC441G DCT 70SH LFS	69	PT103SQQ	81
KSC441J DCT 70SH LFS	69	PT201SZQ	81
KSC441J ST2 LFS	69	PT202SSQ	81
KSC461J 70SH LFS PF	70	PT208SSQ	81
KSC471J 70SH LFS PF	70	PTS125SJM73 SMTR-2 LFS	73
KSC441V2SPD LFS	68	PTS125SK43-2 LFS	73
KSC4D2J50SH	9	PTS526 SK G 15J SMTR2 LFS	73
KSC641J LFS	69	PTS526 SM 08 SMTR2 LFS	73
KSC841J OL LFS	69	PTS526 SP 20 SMTR2 LFS	73
KSC941J LFS	69	PTS530GK055SMTRLFS	73
KSEK43G LFS	68	PTS530GM055SMTRLFS	73
KSEM31J LFS	68	PTS540JK035SMTRLFS	74
KSJOM41180SH LFTR	70	PTS540JM035SMTRLFS	74
KSJ0VD1860SH LFTR	9	PTS636 SK25 SMTR LFS	74
KSR221G LFS	67	PTS636 SL50 LFS	74
KSR231G LFS	67	PTS636 SM43J SMTR LFS	74
KSR251G LFS	67	PTS641SM31SMTR2LFS	74
KSR221G NC LFS	67	PTS641TK25SMTR2LFS	74
KSR223GNC LFG	67	PTS645SL43SMTR92 LFS	75
KSS221G LFS	68	PTS645VH58-2 LFS	75
KSS231G LFS	68	PTS647SN50SMTR2 LFS	75
KSS241G LFS	68	PTS815 SJG 250 SMTR LFS	75
KSU211WLF	8	PTS815 SJK 250 SMTR LFS	75
KSU213WLF	8	PTS815 SJM 250 SMTR LFS	75
KT11 B0 SA3M 34 LFS	72	PTS820J25KSMTRLFS	76
KT11 B2 SAM 34 LFS	72	PTS820J25MSMTRLFS	76
KT11 P3 SA1M 34 LFS73	72	PTS840ESDPMSMTR LFS	76
KT11 P3 SM 34 LFS	72	PTS840GKPSMTR LFS	76
KT11 P4 SA2M 35 LFG	72	PTS840GMPMSMTR LFS	76
KXT 311 LHS	66	PTS840PMSMTR LFS	76
KXT 321 LHS	66	PVA1EEH1 3.5N V2	34
KXT 331 LHS	66	PVA1OAH1 1.2N V2	34
L102011MS02Q	48	PVA2EEH3 1.2N V2	34
L202011MS02Q	48	PVA2OAH5 1.7N V2	34
L20202MA04Q	48	R10815RS02Q	43
L202031MS02Q	48	R20407RR03Q	43
LCGGL9P00EC	55	R20507RR02Q	43
LCGHF5A10RCE	55	RB-220-07 R	11
LCS011T05QDC	57	RB-231X2	11
LCS051P00PDC	57	RB-441-45	11
LCS051P00SDC	57	RTE0400N04	17
MPS45WGW	10	RTE1002G14	17
		RTE1600V44	17
		SAM-H2-LR10SPA	26

PART NUMBER	PAGE NUMBER
SAM-H2-LR14SPA	26
SAM-H2-MR14SPA	26
SAM-H4-MR11SPA	26
SDA03H0SBR	16
SDA04H0SBR	16
SDA08H0B	16
SDP002	8
SDS0001	9
SER BK AU OA	24
SERU AU OA	23
SET BK AU OA	23
SK-12D04-VG 3 NS	52
SK-12D07-G 5 NS PA	52
SK-12D07-VG 4 NS PA	52
SK-13D21-G 2 RT	52
SK-14D01-G6	52
SRK GY	23
SS-12D07-VG 4 NS GA PA	51
SS-12D1505-G 2	51
SS-14D08-VG 5 PA	51
SS-22D0205-G 2	51
SS-22D07-G 2 NS PA	51
STK WH	23
SSW 115S	55
SW-13A65N-A01	40
SW-13A65N-A01 BK	40
T101MH9ABE	80
T101MH9AVBE	80
T102SHZQE	80
T105LH9ABE	80
T211MH9V3BE	80
TDA04H0SB1R	16
TDA08H0SB1R	16
TDA10H0SB1R	16
TFCDK6ST2640C	55
TFCJL3SP004AC	55
TP11SH8ABE	30
TP11SH9ABE	30
TP11SH9CBE	30
TP11SHZQE	30
TP12SH9ABE	30
V80212MA08Q	49
V80212MS02Q	49
V80212S205Q	49
Y101132C203NQ	61
Y1011U2C203NQ	61
Y201132C203NQ	61
ZMA00A150L04PC	57
ZMA03A150A03PC	57
ZMA03A150S07EC	57
ZPA00A150P00T	58

Products Only

C&K Components, Inc. (C&K) warrants its products against defects in manufacturing if the products are used for the purpose for which they were manufactured and sold. C&K will, at its option, repair or replace any of its products with a manufacturing defect. This warranty shall expire one year from the date of shipment. THIS WARRANTY IS IN LIEU OF ALL WARRANTIES, WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY EXCLUDED. SPECIFICATIONS AND PRODUCT LITERATURE REFERRING TO, ATTACHED TO OR FURNISHED WITH PRODUCTS ARE DESCRIPTIVE ONLY AND SHALL NOT BE TREATED AS WARRANTIES. The purchaser or subsequent owner or user's sole and exclusive right or remedy shall be limited to the furnishing of replacements for products found defective by C&K. No oral waiver or modification of this warranty shall have any effect whatsoever, regardless of by whom such waiver or modification is given.

This warranty is void if any modification is made on the warranted product, regardless of whether the modification causes or contributes to the alleged defect. All modifications are made at the risk of the party making the modification. Purchaser indemnifies and holds harmless from all claims or causes of action arising from modifications made to products which are not under the control of C&K. If purchaser buys and resells the product, purchaser agrees to inform its customers that C&K makes no express or implied warranties because of the modification. C&K's warranty is also void if product failure results from acts or omissions of persons other than C&K, or from accident, acts of nature, abuse, misuse or misapplication of the product.

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

Terms and Conditions of Sale with Limitations of Remedy and Liability

1. The warranty provided above, or any warranty duly provided by C&K, shall constitute the sole remedy of purchaser and any subsequent owner or user of the product; and shall be the sole liability of C&K, whether in contract, tort, strict liability, under warranty or otherwise. In no event shall C&K's liability exceed the amount of the purchase price paid to C&K by the purchaser for the allegedly defective product. C&K shall not be liable under any circumstance for special, indirect or circumstantial damages, including loss of profit or production.
2. Purchaser and any subsequent owner of the product shall have no claim against C&K for any labor, downtime or expenses of any kind arising from any C&K default whatsoever, including delay shipment.
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.

5. Purchaser agrees to notify all subsequent owners and users taking through purchaser of these Terms and Conditions of Sale with Limitations of Remedy and Liability and, failing to do so, shall indemnify and hold C&K harmless from all claims or causes of action by such persons which are applicable to said terms, conditions and limitations.

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.

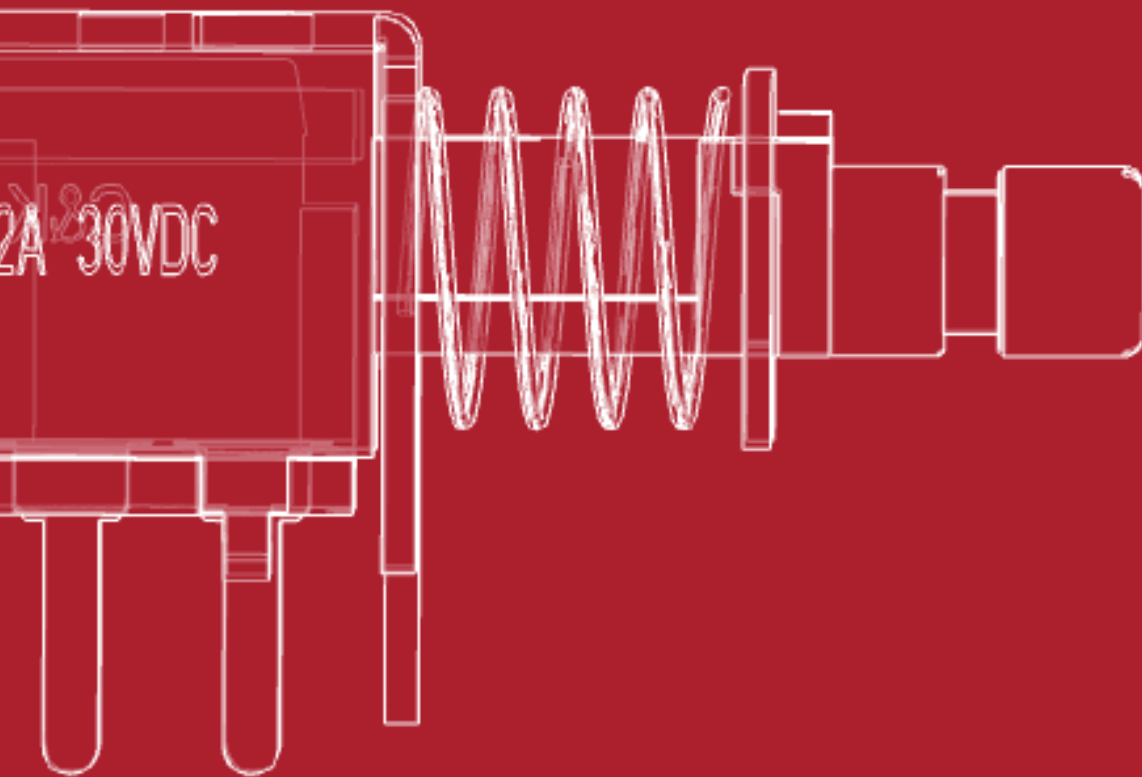
7. Delivery schedules are subject to prior sale and circumstances in effect at the time the purchase order is accepted by C&K. C&K shall not be held responsible for delays in delivery due to strikes; work stoppages; fires; floods; accidents; inability to obtain materials, fuels or transportation; government 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.



AMERICAS

+1.617.969.3700

ASIA

+852.3713.5288

EUROPE

+33.1.60.24.51.51

www.ckswitches.com