

# C&K COMPONENTS SHORT FORM CATALOG

Switches | Smart Card Interconnect Devices | High Reliability Connectors

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# C&K Complete Product Range

C&K Components offers more than 55,000 unique part numbers that are built, priced and delivered as standard catalog items.

## Tactile Switches

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



## Pushbutton Switches

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



## Key Switches

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



## Detect Switches

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



## Navigation Switches

- Multi-direction
- Sphere, joystick, rotary, rocker, dome actuation



## Rotary Switches

- Multi-pole, multi-position
- Sealed



## DIP/Rotary DIP Switches

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



## Switchlocks (Keylock)

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



# C&K Complete Product Range

With one of the world's largest sales support networks, C&K's global sales representatives and stocking distributors ensure local support and product availability.

## Toggle Switches

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



## Miniature Rocker Switches

- Snap-in, through-hole, panel mount
- Washable
- PC mount
- Illuminated options



## Power Rocker Switches

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



## Slide Switches

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



## Snap Acting Switches

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



## Thumbwheel Switches

- Snap-in mount
- Dust lens
- 10-, 16-position



## Smart Card Interconnect Devices

- ISO, SIM, SAM cards
- Anti-piracy
- Low profile



## High-Reliability Connectors

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



Detect.....	25-29	Snap-Acting.....	45-47
DIP.....	37-39	Switchlock.....	50-51
KeySwitch.....	22-24	Tactile.....	10-19
Navigation.....	20-21	Thumbwheel.....	52
Pushbutton.....	5-9	Toggle.....	30-32
Rocker.....	33-36	Smart Card Connectors.....	53-54
Rotary.....	48-49	High Reliability Connectors.....	55
Slide.....	40-44	Part Number Index.....	56-58

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*The part numbers listed are RoHS compliant.*










*Dimensions and specifications subject to change.*





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## Product Selection Guide

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

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

## Product Selection Guide

<b>Pushbutton</b>								
<b>Series</b>	<b>FP</b>	<b>AP</b>	<b>HP</b>	<b>NP</b>	<b>PBA</b>	<b>PWR</b>	<b>PB</b>	<b>PS</b>
<b>Switch Type</b>	Ultra Miniature	Industrial	Hall Effect	Sealed Power	Snap-acting Mom.	Momentary Detent	Miniature	Sub-miniature Microminiature
<b>Poles/Throws</b>	SPST	SPST	Linear Output	SPDT	DPST	SPST	DPDT 4PDT	SPDT DPDT
<b>Max. Current</b>	0.4 VA	400mA	10 mA	5 Amp	250mA	2 A	0.3A / 1A	0.1 / 1A 0.3 / 2A
<b>Process Sealed</b>	•	IP67	IP68	IP68		IP65		
<b>PCB Mount Options</b>								
Thru-hole	•	•		•	•		•	•
Vertical	•	•	•	•				•
Right Angle	•				•		•	•
Panel Mount		•	•	•				•
Wire Leads		•	•	•				
Solder Lug		•						
Surface Mount						•		
Quick Connect								

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## 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	SPDT On-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
- Contact rating

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

Gold over silver: 1AMP @ 120 V AC or 28 V DC

### Typical Applications

- Telecommunications and networking equipment
- Computers peripherals
- Instrumentation and controls

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

## 8060 Series Alternate Action and Momentary Pushbutton Switches



### Features/Benefits

- Long travel
- Epoxy terminal seal compatible with bottom wash cleaning
- Operating life 50,000 cycles
- Contact rating

Silver: 6 AMPS @ 120 V AC or 28 V DC; 3 AMPS @ 250 V A C

Gold over silver: 0.4 VA max. @ 20 V AC or DC max. or  
6 AMPS @ 120 V AC or 28 V DC; 3 AMPS @ 250 V AC

### Typical Applications

- Telecommunications and networking equipment
- Computers peripherals
- Instrumentation and controls

Part Number	Function	Actuator or Bushing	Bushing	Termination	Contact Material	Cap
8161SHZQE2	SPDT On-On	.710" high plunger with .375" dia. cap	.300" high, flat, hi torque	Solder lug	Silver	Black
8168LHZQE2	SPDT On-Mom.	.740" high plunger with .395" dia. cap	.300" high, flat, hi torque	Solder lug	Silver	Black
8168SHZQE2	SPDT On-Mom.	.710" high plunger with .375" dia. cap	.300" high, flat, hi torque	Solder lug	Gold over silver	Black
8168SHZQE2	SPDT On-Mom.	.710" high plunger with .375" dia. cap	.300" high, flat, hi torque	Solder lug	Silver	Black

## 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: 200mA @ 24 V DC resistive (500,000 cycles)  
100mA @ 50 V DC resistive (500,000 cycles)  
400mA @ 32 V AC resistive (500,000 cycles)  
125mA @ 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
AP4D200TWBE	4 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

## NP Series Sealed Industrial Pushbutton Switches



### Features/Benefits

- IP68 sealed
- Multiple housing styles
- Contact Rating  
10mA/5 VDC resistive (1,000,000 cycles)  
1A/32 VDC resistive (100,000 cycles)  
5A/32 VDC resistive (25,000 cycles)  
3A/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

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## Product Selection Guide

<b>Surface Mount</b>							
<b>Series</b>	<b>KMT2</b>	<b>KMT0</b>	<b>KMR2-4</b>	<b>KMS</b>	<b>PTS525</b>	<b>PTS530</b>	<b>PTS810</b>
<b>Size on PCB L x W (mm)</b>	3 X 2,6	3 X 2,6	4,2 x 2,8	4,2 x 3,55	5,2 x 5,2	4,5 x 4,5	4,2 x 3,2
<b>Total Height (mm)</b>	0,65	0,65	1,9 2,5	1,42	0,8 and 1,5	0,55 and 0,65	2,5
<b>Travel (mm)</b>	0,15	0,15	0,2 to 0,35	0,25 to 0,3	0,3	0,2	0,15/0,2
<b>Actuation Force (N)</b>	1.0 1.6	1.0, 1.6 2.3, 3.4	1.2, 2.0 3.0, 4.0	2.0 3.0	1.6 2.6	1.0; 1.6; 2.0; 2.6; 4.0; 6.0	1.6, 2.6 4.0, 6.0
<b>Contact Type</b>	Silver	Silver	Silver Gold	Silver Gold	Silver	Silver	Silver
<b>Max. Voltage (V)</b>	32	32	32 32	32 32	32	12	16
<b>Max. Switching Power (VA)</b>	0,5	0,5	1 0,2	1 0,2	1	—	—
<b>Life Cycles</b>	150,000	300,000 600,000 1,000,000	100,000 300,000	100,000	100,000	150,000 to 1,000,000	50,000 to 150,000
<b>IP Rating</b>	IP54	IP68	IP40	IP40	IP40	-	-
<b>Surface Mount</b>							
<b>Series</b>	<b>PTS820</b>	<b>PTS840</b>	<b>KSR</b>	<b>KSS</b>	<b>KSC</b>	<b>KSC</b>	<b>KSC4V</b>
<b>Size on PCB L x W (mm)</b>	3,9 x 2,9	3,5 x 3,55	7,15x3,8 7,3x3,8	5,5 x 4,4	J 6,8x6,2	G 10x6,2	2 holes ø 1,1 2 pads 1,5 x 0,8
<b>Total Height (mm)</b>	1,5/2,0/2,5	1,35	2,5	1,7	2,6 3,5 3,5 5,0 5,2 7,7 4,3		5,0*
<b>Travel (mm)</b>	0,2	0,2	0,3 to 0,5	0,3	0,20 to 0,75 *		0,7*
<b>Actuation Force (N)</b>	1.6 2.5	1.6 2.2	1.2; 2.0; 3.0; 4.5	2 2.5 4	1,1 to 5,5 *		3.5*
<b>Contact Type</b>	Silver	Silver	Silver Gold	Silver Gold	Silver	Gold	Silver Gold
<b>Max. Voltage (V)</b>	12	12	32 32	32 32	32	32	32 32
<b>Max. Switching Power (VA)</b>	-	-	1 0,2	1 0,2	1	0.2	1 / 0,2
<b>Life Cycles</b>	100,000 200,000	100,000	100,000 200,000	100,000	100,000 to 1,000,000		300,000
<b>IP Rating</b>	-	-	IP50	IP40	IP67		IP67

\* Other options available by request

## Product Selection Guide

SMT, Thru-hole Sealed High Performance					
Series	KSC5	KSC9	KSC-ST	KSE	KST
Footprint	J G 6,8x6,2 10x6,2	J G 6,8x6,2 10x6,2	J G 6,8x6,2 10x6,2	6,8 x 6,2	J G 6,8x6,2 10x6,2
Total Height (mm)	5,6	7,7*	5,2	3,1 / 4,3	5
Travel (mm)	axial: 0,25 lateral: 0,5	0,4	0,3 to 1,0	0,3	1,33
Actuation Force (N)	2.0 3.0	1.7 2.55 3.4	3.4 4.5/8.0	1.5 / 2.25	2.0 3.5
Contact Type	Silver Gold	Silver Gold	Silver Gold	Silver	Silver Gold
Max. Voltage (V)	32 32	32 32	32 32	32	30 30
Max. Switching Power (VA)	1 0,2	1 0,2	1 0,2	1	0,50 0,2
Life Cycles	10,000 100,000	300,000	100,000 300,000	300,000	100,000
IP Rating	IP50	IP67	IP67	IP67	IP40

Thru-hole Sealed High Performance							
Series	KT	K5AT	K8	K5V	KSF/KSFI	KSA	KSA MKII
Footprint	SA SA2 7,5x5 7,5x7	G 8,4x10,8	G 8,4x10,8	8 x 9 x 17 / 9 x 13	7,62 x 5,08	7,62 x 5,08	7,62 x 5,08
Total Height (mm)	6,6 7,11 with tab	6,1	6	9 / 13	2,6	4,7 button option	4,7
Travel (mm)	0,3 to 0,5	0,5	0,45	1,2	0,3 to 0,5	0,3 to 0,5	0,3 to 0,5
Actuation Force (N)	3	4	2.5 4.0	4.0	1.3 1.6 3.0 5.0	1.3 3.0 5.0	1.3 3.0 5.0
Contact Type	Silver Gold	Gold	Silver Gold	Gold	Silver Gold	Silver Gold	Silver Gold
Max. Voltage (V)	50 50	32	32 32	32	32 32	32 32	32 32
Max. Switching Power (VA)	1 0.2	1	1 0.2	1	1 0.2	1 0.2	1 0.2
Life Cycles	100,000	25,000	300,000	25,000	100,000	100,000	100,000 1,000,000
IP Rating		IP40	IP40	IP40	IP60	IP60	IP67

\* Other options available by request

## Product Selection Guide

Thru-hole						
Series	KSA-V	KSL	KSL-V	KSJ	KSJ-V	PTS635
Footprint	7,62 x 2,54	7,62 x 5,08	7,62 x 2,54	7,62 x 5,08	7,62 x 2,54	6 x 3,5
Total Height (mm)	8	9,9	8	6,65	8	4.3 5.0
Travel (mm)	0,3 to 0,5	0,3 to 0,5	0,3 to 0,5	0,55 to 0,7	0,55 to 0,7	0,25
Actuation Force (N)	1.3 3.0 5.0	1,3 3,0	1,3 3,0	2,0 3,0	2,0 3,0	1,3 2,0
Contact Type	Silver Gold	Silver Gold	Silver Gold	Silver Gold	Silver Gold	Silver
Max. Voltage (V)	32 32	32 32	32 32	32 32	32 32	12
Max. Switching Power (VA)	1 0.2	1 0.2	1 0.2	1 0.2	1 0.2	50
Life Cycles	100,000	100,000	100,000	100,000 30,000	100,000 30,000	20,000
IP Rating	IP60	IP60	IP60	IP60	IP60	IP40

Thru-hole Sealed High Performance						
Series	PTS635-V	PTS645	PTS645-V	PTS125	ITS	RS-28x
Footprint	7,0 x 2,5	6 x 6	7,0 x 2,5	12 x 12	variety of sizes available	6 x 3,6
Total Height (mm)	3.15 / 3.85	4,3 / 5,0 / 7,0 / 9,5 / 13,0	3.15 / 3.85 / 5.85 / 8.35	4,3 / 7,3 / 8,5 / 12,0		2,5
Travel (mm)	0,25	0,25	0,25	0,30	0,25	0,25
Actuation Force (N)	1,3 2,0	1,3 / 1,6 2,0 / 2,6	1,3 / 1,6 2,0 / 2,6	1.8 2.5	160 gf	1.6 2.5
Contact Type	Silver	Silver	Silver	Silver	Silver	Silver
Max. Voltage (V)	12	12	12	12	12	12
Life Cycles	20,000	100,000	100,000	200,000	50,000	100,000
IP Rating	IP40	IP40	IP40	IP40	IP40	IP40

## KMT0 Series

### Nano-miniature SMT Top Actuated Tact Switch



#### Features/Benefits

- Smallest footprint
- IP68
- Ultra low current capabilities

#### Typical Applications

- Mobile Phones
- Hearing Aids
- MP3 accessories
- Bluetooth Headset

Part Number	Operating Force	Contact Material	Tactile Feeling	Operating Life	Travel
KMT011NGJ LHS	1.0 ± 0.25 N	Silver	10%	300,000 cycles	0.15 ± 0.1 mm
KMT031NGJ LHS	3.4 ± 0.25 N	Silver	30%	300,000 cycles	0.15 ± 0.1 mm
KMT071NGJ LHS	2.3 ± 0.25 N	Silver	30%	300,000 cycles	0.15 ± 0.1 mm

## KMR Series

### Microminiature SMT Top Actuated



#### Features/Benefits

- Long life version
- Optional ground pin
- Ultra low current capabilities
- Heights: 1.9 mm & 2.5 mm

#### Typical Applications

- Automotive
- Cellular phones
- 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
KMR221G LFS	2.0 ± 0.50 N	Silver	200,000 cycles	0.25 ± 0.1 mm
KMR231G LFS	3.0 ± 0.75 N	Silver	150,000 cycles	0.25 ± 0.1 mm
KMR421G LFS	2.0 ± 0.50 N	Silver	200,000 cycles	0.25 ± 0.1 mm
KMR431G LFS	3.0 ± 0.75 N	Silver	150,000 cycles	0.30 ± 0.1 mm

## KMS Series

### Microminiature SMT Side Actuated



#### Features/Benefits

- ESD protection
- 1.42 mm thickness
- Positioning pegs for stability
- IP 40 sealing

#### Typical Applications

- Mobile phones
- Medical handheld monitors
- Consumer electronics /PDAs
- Telecommunication networks

Part Number	Operating Force	Contact Material	Tactile Feeling	Operating Life	Travel
KMS221G LFS	2.0 ± 0.5 N	Silver	15%	100,000 cycles	0.25 ± 0.15 mm
KMS231G LFS	3.0 ± 0.6 N	Silver	25%	100,000 cycles	0.30 ± 0.15 mm

## PTS525 Series

### Microminiature SMT Top Actuated



#### Features/Benefits

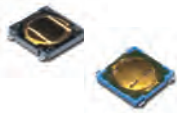
- Long life
- Compact package of 5.25 x 5.25 mm saves PCB space

#### Typical Applications

- Consumer products/ Hand-held devices
- Instrumentation
- Computer products

Part Number	Operating Force	Total Height	Operating Life	Travel
PTS525SM15SMTR2LFS	160 gf	1.5 mm	1,000,000 cycles	0.25 ± 0.2 mm

### 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	Gullwing	160 ± 30 gf	1,000,000 cycles	0.2mm - 0.1 /+ 0.15mm
PTS530GK055SMTRLFS	Gullwing	260 ± 30 gf	200,000 cycles	0.2mm - 0.1 /+ 0.15mm

### PTS810 Series Microminiature SMT Top Actuated



#### Features/Benefits

- 4.2 x 3.2 mm footprint
- 2.5 mm thickness
- High number of cycles
- Color coded actuators

#### Typical Applications

- Control panels
- Nomad devices
- Remote controls
- Keyless entry system

Part Number	Actuator Color	Operating Force	Operating Life	Travel
PTS810SJM250SMTRLFS	Gray	160 ± 50 gf	150,000 cycles	0.15mm ± 0.1mm
PTS810SJK250SMTRLFS	White	260 ± 70 gf	50,000 cycles	0.15mm ± 0.1mm

### 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	Total Height	Pegs	Operating Force	Operating Life
PTS820J25MSMTRLFS	2.5 mm	No	160 ± 50 gf	200,000 cycles
PTS820J25KSMTRLFS	2.5 mm	No	250 ± 50 gf	100,000 cycles

### PTS540 Series Microminiature SMT Top Actuated



#### Features/Benefits

- 3.7 x 3.7 mm footprint
- High number of cycles

#### Typical Applications

- MP3 accessories
- Bluetooth headset
- Remote controls

Part Number	Total Height	Operating Force	Operating Life	Travel
PTS540JM035SMTRLFS	0.35 mm	160 ± 50 gf	500,000 cycles	0.15 +/- 0.1 mm
PTS540JK035SMTRLFS	0.35 mm	230 ± 50 gf	300,000 cycles	0.15 +/- 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	Total Height	Operating Force	Operating Life	Ground Pin
PTS641SM31SMTR2LFS	3.1 mm	160 gf	100,000 cycles	No
PTS641TK25SMTR2LFS	2.5 mm	250 gf	100,000 cycles	No

## PTS645 Series

### Miniature SMT 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	Total Height	Operating Force	Operating Life	Termination
PTS645SL43SMTR92 LFS	4.3 mm	130 gf	100,000 cycles	SMT
PTS645VK31-2 LFS	3.15 mm	260 gf	100,000 cycles	Vertical

## PTS840 Series

### Microminiature SMT Side Actuated



#### Features/Benefits

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

#### Typical Applications

- Nomad devices
- Remote controls
- Personal health diagnostics
- Consumer electronics

Part Number	Operating Force	Operating Life	Ground	Termination Style	Pegs
PTS840PMSMTR LFS	160 gf -40/+70gf	100,000 cycles	No	P	No
PTS840PKSMTR LFS	220 gf -70/+80 gf	100,000 cycles	No	P	No
PTS840GMPSMTR LFS	160 gf -40/+70gf	100,000 cycles	No	G	Yes
PTS840GKPSMTR LFS	220 gf -70/+80 gf	100,000 cycles	No	G	Yes
PTS840ESDPMSMTR LFS	160 gf -40/+70gf	100,000 cycles	Yes	P	No

## 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

**KSR Series****Microminiature SMT Top Actuated****Features/Benefits**

- Saves PCB space
- Detect type available
- Rubber actuator
- IP 50 sealed

**Typical Applications**

- Automotive
- Mobile phones & accessories
- Industrial electronics
- Computers & network equipment

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 of 1.6 mm
- Large flat top
- IP 40 sealed

**Typical Applications**

- Mobile phone
- Industrial electronics
- Health diagnostic electronics

Part Number	Operating Force	Contact Material	Switch Function	Operating Life	Travel
KSS221GLFS	2.0 ± 0.5 N	Silver	Normally open	100,000 cycles	0.30 ± 0.15 mm
KSS231GLFS	2.5 ± 0.5 N	Silver	Normally open	100,000 cycles	0.30 ± 0.10 mm
KSS321GLFS	2.0 N	Silver	Normally open	100,000 cycles	0.30 ± 0.05 mm

**KSE Series****High Performance Sealed Tact Switch****Features/Benefits**

- Low profile
- IP 67
- 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
KSEM31JLFS	1.5 ± 0.5 N	300,000 cycles	0.3 + 0.1/-0.2 mm
KSEK43GLFS	2.25 ± 0.75 N	300,000 cycles	0.30 ± 0.2 mm

**KSC4V2 Series****Side Actuated Sealed Tact Switch****Features/Benefits**

- Full SMD side actuated
- Haptic adaptability
- Pin in paste terminations
- IP 67

**Typical Applications**

- Automotive
- Industrial
- Telecommunication networks
- Network infrastructure and IT

Part Number	Operating Force	Contact Material	Operating Life	Travel
KSC441V2SPDLFS	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

- Positive tactile feeling
- Range of 6 actuation forces
- IP 67
- Gullwing option available for each part number

#### Typical Applications

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

Part Number	Operating Force (Min/Max)	Actuator Height	Operating Life	Travel
KSC241JLFS	3.5 ± 0.9 N	3.5 ± 0.2 mm	300,000 cycles	0.5 ± 0.2 mm
KSC321JLFS	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
KSC941J LFS	3.4 ± 0.85 N	7.7 ± 0.2 mm	300,000 cycles	0.4 ± 0.2 mm

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

Product configurations shown are not limited to example above, please refer to the full line catalog, website or C&K sales representative

## KSC8 Series

### SMD Sealed Tact Switch for Adjustable Height



#### Features/Benefits

- SMD switch
- Excellent haptic based on hard actuator and features silicon membrane networks
- Overload resistance
- IP 67

#### Typical Applications

- Automotive
- Industrial
- Telecommunication networks
- Network infrastructure and IT

Part Number	Operating Force	Contact Material	Operating Life	Travel
KSC821J OL LFS	1.7 ± 0.5 N	Silver	300,000 cycles	0.4 ± 0.2 mm
KSC831J OL LFS	2.55 ± 0.65 N	Silver	300,000 cycles	0.4 ± 0.2 mm
KSC841J OL LFS	3.4 ± 0.85 N	Silver	300,000 cycles	0.4 ± 0.2 mm

## KSA / KSJ Series

### High Performance Sealed Tact Switch



#### 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
KSA0M411LFT	3 ± 0.75 N	Silver	100,000 cycles	0.6 ± 0.2 mm
KSA0M211LFT	1.4 ± 0.4 N	Silver	100,000 cycles	0.5 ± 0.2 mm
KSA0M311LFT	1.4 ± 0.4 N	Silver	100,000 cycles	0.5 ± 0.2 mm
KSA0M332LFT	1.3 ± 0.3 N	Gold	100,000 cycles	0.5 ± 0.15 mm
KSJ0M41180SHLFT	3.3 ± 0.8 N	Silver	100,000 cycles	0.55 ± 0.25 mm

**K8 Series****Lighted SMT Tact Switch 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 Switch****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 Pushbutton****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 ± 50gf
ITS13FV2SR	Red / Green	Vertical SMT Gullwing	50,000 cycles	160gf ± 50gf
ITS50FV3SR	White	Vertical SMT Gullwing with J bend LED	50,000 cycles	160gf ± 50gf
ITS23FR1ST	Yellow / Green	Right angle thru-hole	50,000 cycles	160gf ± 50gf
ITS40FR2ST	Blue	Right angle thru-hole 2.5mm leads	50,000 cycles	160gf ± 50gf

**K5V Series****Illuminated Tact Switch****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 Switch



### 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	Gullwing	Silver	SMT

## RS-282/284/285 Series 3.5 mm Tact Switch, Top Actuated



### Features/Benefits

- Compact size 6 x 3.6 mm
- Low profile 2.5 mm
- SMT mount

### Typical Applications

- Consumer electronics
- Computer peripherals
- Household appliances

Part Number	Operating Force	Height	Operating Life	Travel	Termination
RS-282G05A3-SM RT	250 gf	2.5 mm	50,000 cycles	0.25 + 0.20/-0.10 mm	SMT
RS-285G05A2-U RT	160 gf	2.5 mm	100,000 cycles	0.25 + 0.20/-0.10 mm	SMT, with ESD pin
RS-284G05A2-U RT	160 gf	2.5 mm	100,000 cycles	0.25 + 0.20/-0.10 mm	SMT

## ED & EDM Series Dome Switches



### Features/Benefits

- Short travel
- Good tactile feedback
- Self cleaning



### Typical Applications

- Aircraft
- Instrument
- Panels

Part Number	Operating Force	Contact Material	Operating Life	Travel	Terminals
EDSAC LFS	2.4 N $\pm$ 25%	Silver	1,000,000 cycles	0.3 $\pm$ 0.15 mm	with pc pins
EDSSC LFS	2.4 N $\pm$ 25%	Silver	1,000,000 cycles	0.3 $\pm$ 0.15 mm	with tabs
EDM450SAC LFS	4.5 N $\pm$ 25%	Silver	1,000,000 cycles	0.5 $\pm$ 0.25 mm	with pc pins
EDM650SSC LFS	6.5 N $\pm$ 25%	Silver	1,000,000 cycles	0.6 $\pm$ 0.25 mm	with tabs

Note - this catalog represents a small sample of C&K part numbers. C&K has over 55,000 part numbers available.  
Please refer to the C&K full line catalog for a complete list of products and configurations.  
Dimensions and specifications subject to change.

## Product Selection Guide

<b>Navigation</b>		
<b>Series</b>	<b>TSW</b>	<b>TPA</b>
<b>Number of directions</b>	3, 7	3, 4, 5
<b>Size on PCB L x W (mm)</b>	ø 21 ø 34,4	9,3 x 8
<b>Total Height (mm)</b>	3,5 6,0	5
<b>Actuator Type</b>	Custom	Hard, custom
<b>Actuation Force (N)</b>	2,2 to 3.0 scanning and select, 0.5N cm rotation	1,8 scanning 4,0 selection
<b>Contact Type</b>	Silver	Silver    Gold
<b>Max. Voltage (V)</b>	10	24    24
<b>Max. Switching Power (VA)</b>	.01	1    0.2
<b>Life Cycles/ per way</b>	1,000,000	200,000
<b>Sealing</b>	Not sealed	IP50

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**TPA Series****Multi-direction SMT Navigation Switch****Features/Benefits**

- One touch, 5 way switching
- Distinctive tactile feel for scanning and select functions
- Normally open momentary contacts
- Push down to select possible in any position
- Operating life
  - Scanning 200,000 operations in each direction
  - Push to select 200,000 operations

**Typical Applications**

- Electronic devices requiring direct control on LCD display
- MP3 player
- Bluetooth Headset
- Digital cameras
- GPS navigation systems

Part Number	Navigation Select	Operating Force	Contact Material
TPA511GLFS	Scanning 4 directions with selection	1.8N scanning, 4N select	Silver

**TSW Series****3 or 7 Function Tact and Scroll Wheel****Features/Benefits**

- Compact and slim
- Multiple function in one component (rotary, select)
- Easy installation
- Integrated decoration (B type)






**Typical Applications**


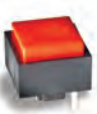

- Remote controls
- Keyboards
- Printers
- Entertainment systems and White Goods

Part Number	Number of Circuits	Rotation Actuation Force	Push Actuation Force	Cycle Life Rotation (per direction)	Cycle Life Push
TSWA-3N-CB11 LFS	3	Max. 60g - cm	220g ± 50g	1,000,000 cycles	1,000,000 cycles
TSWB-3N-CB222 LFS	5	Max. 50g - cm	Max 300g	1,000,000 cycles	1,000,000 cycles

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## Product Selection Guide

Key Switches					
Series	K6	K12S	K12	PVA	PVB
Size (mm) L x W x H	7,4 x 10,9 x 8,4		12 x 12 x 11	9,2 x 10 x 13,5	
Poles/Throws	SPST momentary	SPST / DPST momentary	SPST 2 x SPST momentary	DPST / DPDT momentary or push-on/push off	SPDT PVB4 DPDT PVB6
Maximum Load	30 V / 100 mA	30 V / 100 mA	30 V / 100 mA	32 V / 100 mA	14 V / 100 mA or 200 mA
Operating Force	2 N; 3 N; 5 N	3 N; 5 N; 6 N; 9 N; 6/12 N; 4/8 N	1,5 N; 2,5 N; 3,5 N; 5 N; 3,5/7 N; 6/12 N	1,2 N; 1,7 N; 3,5 N	3 N
Travel (standard)	1,5 mm	1,5 mm	1 mm, 1,5 mm, 2 mm	2,4 mm	Mom. 2,3 mm Push-push 2,3/1,5mm
Life Cycle	200,000	1,000,000	1,000,000	100,000	100,000
Sealed		IP40/IP67	K12C only		
Illumination	•	•	•		
Termination	SMT/ Thru-hole	SMT	Thru-hole	Thru-hole	SMT / Thru-hole

Key Switches			
Series	D6	KS	Digitast
Size (mm) L x W x H	12 x 11,4 x 14,5	12,4 x 12,4 x 9,9	17,1x12,3 x 14,3
Poles/Throws	SPST momentary	SPST SPDT	SPDT momentary or push-on/push off
Maximum Load	32 V/100 mA*	50 V/25 mA	24 V / 10 mA
Operating Force	1,3 N		1,5 N
Travel (standard)	0,8 mm	0,71 mm	3 mm
Life Cycle	250,000	100,000	5,000,000
Sealed			
Illumination			•
Termination	Thru-hole	Thru-hole	Thru-hole

\* Maximum value are for voltage and current separately

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Dimensions and specifications subject to change.

## 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	Function	Button Type / Color	Travel	Operating Force
D6R90 F1 LFS	SPST, NO	Round / Black	0.6 mm	1.3 N
D6C90 F1 LFS	SPST, NO	Square / Black	0.6 mm	1.3 N
D6R10 F1 LFS	SPST, NO	Round / Gray	0.6 mm	1.3 N
D6L90 F1 LFS	SPST, NO	Plunger / Black	0.6 mm	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 version available

### Typical Applications

- Automotive
- Off-road transportation
- Industrial electronics
- Computers & network equipment

Part Number	Type	Button Type / Color	Travel	Operating Force
K12GO BK 1.5 6/12N	Two-step switch	Black cap	1.5 mm	6 / 12 N
K12P BK 1 5N	With snap-in pegs	Black cap	1 mm	5 N
K12A BK 1 5N	No snap-in pegs	Black cap	1 mm	5 N
K12C 1 5N	Sealed contact with rubber cap (IP 67)	Black rubber cap	1 mm	5 N
K12PL WH 1.5 5N LV302	With central LED	White LED	1.5 mm	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
- 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 N detect	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

## 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

## PVB Series SMT Push Switches



### Features/Benefits

- Compact design
- Adapted for medium power applications
- SMD soldering process /tape & reel packaging

### Typical Applications

- Automotive (air conditioning, lighting)
- Industrial
- Control panels

Part Number	Function	Mechanical Function	Total Height	Travel	Operating Force
PVB4OA300NS LFS	SPDT	Momentary	12.5 mm	2.3 mm	3 N
PVB4EE300NS LFS	SPDT	Push-Push	12.5 mm	2.3 mm/1.5 mm	3 N
PVB6OA300NS LFS	DPDT	Momentary	12.5 mm	2.3 mm	3 N
PVB6EE300NS LFS	DPDT	Push-Push	12.5 mm	2.3 mm/1.5 mm	3 N

## 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

Detect						
Series	HDT	DS	HDS	HDP	SDP	SDS
Travel to Make (mm)	0,3	See datasheet	0,17	0,15	0,33	0,35
Overtravel (mm)	0,75	See datasheet	0,9	1,15	1,31	1,65
Total Travel (mm)	1,05	See datasheet	1,07	1,3	1,64	2,0
Actuator Length (mm)	1,4	See datasheet	1,17	2,15	3,0	2,5
Life Expectancy	100,000 cycles	20,000; 50,000; 100,000 cycles	100,000 cycles	100,000 cycles	50,000 cycles	50,000 cycles
Contact Type	SPST N.O.	SPST SPDT	SPST N.O.	SPST N.O.	SPDT	SPST N.O. SPST N.C.
Max. Voltage (V)	5	5 V; 16 V 30 V	5	5	5	12
Max. Switching Current (mA)	1 mA	1 mA; 5 mA 100 mA; 0.1A	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

Detect						
Series	DDS	MDS	KDS	KM	MPS	ZMA
Travel to Make (mm)	0,45	2,5 max.	1,25 max.	4,06	See datasheet	1,3 max.
Overtravel (mm)	1,95	0,15 min.	8,9	1,78	See datasheet	0,2 min.
Total Travel (mm)	2,4	2,9	10,16	5,84	See datasheet	1,5
Actuator Length (mm)	2,6	R 8,4	10,16	10,11	N/A	
Life Expectancy	50,000 cycles	100,000 cycles	10,000 cycles	10,000 cycles	10,000,000 cycles	300,000 cycles
Contact Type	SPST N.O.	SPDT	SPST N.O. SPST N.C.	SPDT	SPST N.O.	SPDT
Max. Voltage (V)	30	30	20	125 V AC	30	125 V
Max. Switching Current (mA)	100 mA	300 mA	.4 VA	250 mA	300 mA	3 Amps
Sealing	No	No	No	Flux tight	Yes	No
Mounting	Thru-hole	Thru-hole & Surface Mount	Snap-in panel	Thru-hole	Wire lead	Thru-hole

## Product Selection Guide

Detect						
Series	KSU	KSR2D	KSM	KSC4D	KSJ	RB
Travel to Make (mm)	0,5	0,3	0,3	0,6	0,3	10° ; 90°
Overtravel (mm)	1,0	N/A	1,15	N/A	0,75	N/A
Total Travel (mm)	1,5	0,3	1,72	0,6	1,05	N/A
Actuator Length (mm)	1,5	0,8	1,8	2,6	1,4	N/A
Life Expectancy	100,000 cycles	100,000 cycles	50,000 cycles	500,000 and 2,000,000 cycles	100,000 cycles	20,000; 100,000 cycles
Contact Type	SPST N.O.	SPST N.O.	SPST N.C.	SPST N.O.	SPST N.O.	SPST SPDT
Max. Voltage (V)	32	32	32	32	5	5 V; 24 V
Max. Switching Current (mA)	50 mA	10 mA	50 mA	50 mA	1 mA	1 mA; 25 mA
Sealing	Dust and water drop proof	Dust and flux tight	Flux tight	IP67	Flux tight	No
Mounting	Surface mount	Surface mount	Surface mount	Surface mount	Surface mount	Thru-hole

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## HDT Series

### Micro Miniature Surface Mount Detect Switch



#### 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 Switch



#### 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	1mA 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 Switch



#### Features/Benefits

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

#### Typical Applications

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

Part Number	Contact Type	Contact Material	Travel	Operating Force	Operating Life
KSU213WLFG	SPST NO	Gold	0.65 mm - 0.45/+0.25 mm	1.1 ± 0.8 N	100,000 cycles

## KSM Series

### Side Actuated Detect Switch



#### Features/Benefits

- Low profile – 1.5 mm
- Momentary
- Thermoformed tape & reel
- Low actuation force

#### Typical Applications

- Automotive
- Position sensing switch
- Edge card reset switch
- Smart card presence switch detector
- Tampering
- DSL and fiber optic networks

Part Number	Contact Type	Contact Material	Travel	Operating Force	Operating Life
KSM1131D LFG	SPST Normally closed	Gold	1.25 ± 0.2 mm	1.05 N	50.000 cycles

## SDS Series

### Micro Miniature Surface Mount Detect Switch



#### 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 Switch for SMT



#### Features/Benefits

- Soft actuator
- Permanent actuation possible
- J bend or Gullwing terminations
- Tape & reel
- IP 67

#### 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

### Sealed Detect Switch for SMT



#### 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
KSJ0VD180SH LFT	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.

## HS Series Hook Switch



### Features/Benefits

- Connect headsets and phones
- Various lever designs

### Typical Applications

- Telecommunication
- Computer peripherals

Part Number	Contact Type	Operating Force	Releasing Force	Operating Life
HS-2206-A1 NS	DPDT	50 ± 20 gf	10 gf min.	300,000 cycles

## RB Series Rolling Ball Sensor Switch



### 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	1mA 5 V DC resistive load max	0° to 10° scope	100,000 cycles	PC Thru-hole
RB-220-07 R	SPST	1mA 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

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## Product Selection Guide

<b>Toggles</b>						
<b>Series</b>	<b>7000</b>	<b>E</b>	<b>ET</b>	<b>T</b>	<b>GT</b>	<b>9000</b>
<b>Switch Type</b>	Miniature	Miniature	Subminiature	Subminiature	Ultraminiature	Power
<b>Poles/Throws</b>	SPDT, DPDT, 3PDT, 4PDT	SPDT, DPDT, 3PDT	SPST, SPDT, DPDT	SPST, SPDT, DPDT	SPST, SPDT, DPST, DPDT	DPDT
<b>Maximum Current Silver/Gold</b>	5 Amps	7.5 Amps/ 5 Amps	3 Amps/ 2 Amps	3 Amps/ 2 Amps	0.4 VA	10 Amps
<b>Process Sealed</b>		•	•		•	
<b>PCB Mount Options</b>						
Vertical	•	•	•	•	•	•
Right Angle	•	•	•	•	•	
Vertical Right Angle	•	•	•	•	•	•
<b>Surface Mount Options</b>						
Vertical					•	
Right Angle			•		•	
<b>Panel Mount Options</b>						
Rear Mount	•	•		•		•
<b>Termination Options</b>						
PCB Thru-hole	•	•	•	•	•	•
Wire Wrap	•	•	•	•		
Solder Lug	•	•		•		•
Quick Connect	•	•				•
<b>Other Available Options</b>						
Support Brackets	•	•	•	•	•	•
Snap-in Retention	•	•	•			
ESD Protection	•	•	•	•		
Tape & Reel			•		•	
<b>Bushing Options</b>						
10-48				•		
1/4-40	•	•		•		•
15/32	•					•
M6P 0.75 (Metric)	•					

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## 7000 Series Miniature Toggle Switch



### 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.

### Typical Applications

- Telecommunications
- Instrumentation
- Medical equipment

Silver 5 AMPS @ 120 V AC or 28 V DC; 2 AMPS @ 250 V AC AC

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 Switch



### 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

### Typical Applications

- Telecommunications
- Instrumentation
- Medical equipment

Gold over silver 0.4 VA MAX @20 V AC OR DC MAX. OR

7.5 AMPS @125 V AC OR 28 V DC; 3 AMPS @ 250 V AC DC

Silver 7.5 AMPS @ 125 V AC OR 28 V DC; 3 AMPS @ 250 V AC

Part Number	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 Switch



### 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.

### Typical Applications

- Telecommunications
- Instrumentation
- Medical equipment

Silver options up to 3 AMPS @ 120 V AC OR 28 V DC

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

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## Product Selection Guide

Rocker							
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						•	
Panel Mount Options							
Front Mount	•	•		•	•	Snap-in	Snap-in
Rear Mount	•	•		•	•		
PCB Mount Options							
Vertical	•	•	•	•	•	•	•
Right Angle	•	•	•	•	•	•	•
Surface Mount			•				

Rocker							
Series	DM	DM	DF	CR	CG	CL	CM
Switch Type	Miniature 2 Pole Power	Miniature Illuminated Power	Power	Round	Power	Power	Power
Poles/Throws	DPST, DPDT	SPST, DPST	SPST, SPDT, DPST	SPST, SPDT	SPST, SPDT	SPST, SPDT	SPST, SPDT
Max. Current	3 Amps, 10 Amps	3 Amps, 10 Amps	16 Amps	10 Amps, 6 Amps	16 Amps 10 Amps	16 Amps 10 Amps	16 A 10 A
Washable							
Illuminated		•		•	•	•	•
Panel Mount Options							
Front Mount	Snap-in	Snap-in	Snap-in	Snap-in	Snap-in	Snap-in	Snap-in
Rear Mount			•				
PCB Mount Options							
Vertical							
Right Angle			•				
Surface Mount							

## Product Selection Guide

<b>Rocker</b>				
<b>Series</b>	<b>CN</b>	<b>CA</b>	<b>CA</b>	<b>SW</b>
<b>Switch Type</b>	Power	Power	Illuminated Power	Miniature Power
<b>Poles/Throws</b>	DPST, DPDT	SPST, SPDT, DPST, DPDT	SPST, DPST	SPST, SPDT, DPST
<b>Max. Current</b>	16 A 10 A	15 A	15 A	3 A, 6 A, 6.5 A, 10 A, 16 A
<b>Washable</b>				
<b>Illuminated</b>	•		•	•
<b>Panel Mount Options</b>				
Front Mount	•	Snap-in	Snap-in	Snap-in
Rear Mount				
<b>PCB Mount Options</b>				
Vertical				
Right Angle				
Surface Mount				

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## 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

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## CA Series Illuminated and Non-illuminated Power Rocker Switches



### Features/Benefits

- Cosmetic slimline detail
- Positive detent
- Contact Rating 15 AMPS @ 125 V AC; 10 AMPS @ 250 V AC;  
1/4 HP @ 125 V AC or 250 V AC

### Typical Applications

- Hair dryers and other small appliances
- HVAC and other large appliances

Part Number	Function	Actuator	Illumination	Actuator Markings	Termination	Contact Material	Electrical Life
CA04J137207PQ	SPST, On-Off	Red translucent with 125 V lamp	Red	O –	Quick connect	Silver	10,000 cycles
CA01J12207PQ	SPDT, On-On	Rocker with gloss finish, black	None	O –	Quick connect	Silver	10,000 cycles
CA04J167207Q	SPST, On-Off	Red translucent with 125 V lamp	Green		Quick connect	Silver	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

- Computers
- Power supplies
- Appliances
- Fitness equipment
- Off-road vehicles

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	OI
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

- Overhead fan on range / hood
- Small and large appliances

Part Number	Function	Actuator	Color	Termination
SW-13A65N-A01 BK	SPDT, On-Off-On	Concave (Curved)	Black	Quick Connect
SW-13A65N-A01	SPDT, On-Off-On	Concave (Curved)	White	Quick Connect

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## Product Selection Guide

DIP											
Series	TDP	TDA	SDA	SD	BD	BPA	TDD	SPA	RTE	CD	CRD
Switch Type	Half-pitch .050" Side actuated	Half-pitch .050"	Low Profile	Low Profile	Standard Profile	Side Actuated	Jumper Switch	Single In-line Package	Rotary & Coded	8 mm Coded Rotary	10 mm Coded Rotary
No. of Positions	2,4,8	2-10 (even only)	2-12 (except 11)	2-12 (except 11)	1-12 (except 11)	1-10 & 12	2	2, 4, 6 8, 10	2, 3, 4 10,16	8, 10 & 16	10 & 16
Contact Style	SPST	SPST	SPST	SPST	SPST	SPST	SPDT	SPST SP3T SP4T Coded	SPDT	Coded	Coded
Profile off PCB	.161 (4,1)	.090 (2,3)	.189 (4,80) Thru-hole .175 (4,45) SMT	.168 (4,27) Thru-hole .160 (4,06) SMT	.297 (7,55)	.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 with tape	washable with tape seal	washable (tape not required)	washable with tape	washable (tape not required)	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	100mA	100mA	100mA	100mA	100mA	100mA	100mA	0.4VA	100mA	0.4VA	0.4VA
Retention Feature								.	.	.	
										C option	

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## 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	Termination	Contact Material	Electrical Life
TDA04H0SB1R	SPST, 4 pos.	Flush Actuator	SMT, Gullwing	Gold	1,000 cycles
TDA08H0SB1R	SPST, 8 pos.	Flush Actuator	SMT, Gullwing	Gold	1,000 cycles
TDA10H0SB1R	SPST, 10 pos.	Flush Actuator	SMT, Gullwing	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, Gullwing	Gold plating	1,000 cycles
SDA04H0SBR	SPST, 4 pos.	Flush Actuator – With Top Tape	SMT, Gullwing	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, Gullwing	Gold over nickel plate	1,000 cycles

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## 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 $\mu$  A min. 30 V DC max. 20 mVDC min.
- Contact rating 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

Part Number	Switch Function	ESD Protection /Actuator	Mounting Style/ Termination	Contact Material	Electrical life
RTE1002G14	10 position, BCD	Without ESD, shaft for button	SMT, Gullwing	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, Gullwing	Gold	20,000 cycles
CD16RM0SBR	16 position, Hexadecimal	Flush, screwdriver slot	SMT, Gullwing	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, Gullwing	Gold	20,000 cycles

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## Product Selection Guide

Slide							
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	0.4VA	3 A	6 A	0.4VA	4 A	11A	15A
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	•	•	•	•			•

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## Product Selection Guide

<b>Slide</b>									
<b>Series</b>	<b>V</b>	<b>OS</b>	<b>PCM</b>	<b>AYZ</b>	<b>JS</b>	<b>JSM</b>	<b>JSX</b>	<b>SS</b>	<b>SK</b>
Switch Type	Power & Line Voltage	Miniature	Low Profile	Low Profile	Low Profile	Low Profile	Low Profile	Miniature	Miniature
Poles	1 & 2	1 & 2	1 & 2	1 & 2	1 & 2	1	1	1, 2 & 4	1, 2 & 4
Momentary						•	•		
Process Sealed									
Splashproof									
Screwdriver Slot	•								
Housing Marking									
Tape & Reel			•		•	•	•		
Max. Current	10.1A	200mA	0.3A	100mA	0.3A	0.3A	0.3A	0.3A	0.3A
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	•								

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## 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

## JSX Series Sub-Miniature Slide Switch



### Features/Benefits

- Low profile
- SPDT momentary action
- Long electrical and mechanical life
- Contact rating 10 mA @ 5VDC (resistive).

### Typical Applications

- On/Off touch screens
- Handheld games
- Remote controls
- Instrumentation

Part Number	Function	Actuator	Termination	Contact Material	Electrical Life
JSX08001SAQNL	SPDT	1.65 mm	SMT	Beryllium copper, silver plated	100,000 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

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

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

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## 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 0.1A @ 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	0.3A @ 30 V DC	4 mm	2 mm	PC Thru-hole	10,000 cycles
SS-12D1505-G 2	SPDT, Non-shorting	0.3A @ 6 V DC	2 mm	2 mm	PC Thru-hole	10,000 cycles
SS-14D08-VG 5 PA	1P4T	0.3A @ 30 V DC	5 mm	2 mm	PC Thru-hole	10,000 cycles
SS-22D0205-G 2	DPDT, Non-shorting	0.3A @ 6 V DC	2 mm	2 mm	PC Thru-hole	10,000 cycles
SS-22D07-G 2 NS PA	DPDT, Non-shorting	0.3A @ 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	0.3A @ 30 V DC	3 mm	2 mm	PC Thru-hole	10,000 cycles
SK-12D07-G 5 NS PA	SPDT, Non-shorting	0.3A @ 30 V DC	5 mm	2 mm	PC Thru-hole	10,000 cycles
SK-12D07-VG 4 NS PA	SPDT, Non-shorting	0.3A @ 30 V DC	4 mm	2 mm	PC Thru-hole	10,000 cycles
SK-13D21-G 2 RT	1P3T, Non-shorting	0.3A @ 4 V DC	2 mm	2 mm	SMT	10,000 cycles
SK-14D01-G6	1P4T	0.3A @ 30 V DC	6 mm	2 mm	PC Thru-hole	10,000 cycles

## Product Selection Guide

<b>Snap-acting</b>							
<b>Series</b>	<b>TF</b>	<b>TM</b>	<b>LC</b>	<b>LCA</b>	<b>LCS</b>	<b>MM</b>	<b>ZM</b>
<b>Switch Type</b>	Miniature	Miniature	Subminiature Precision	Subminiature	Sealed Subminiature	Subminiature Precision	Subminiature
<b>Poles/Throws</b>	SPST, SPDT	SPST, SPDT	SPST, SPDT	SPDT	SPST	SPDT	SPDT
<b>Maximum Current</b>	21 Amps	15 Amps	10.1 Amps	10 Amps	6 Amps	7 Amps	3 Amps
<b>Terminations</b>							
Solder	•	•	•	•	•		
Turret						•	
Quick Connect	•	•	•	•	•		
Screw		•					
Wire Leads			•		•		
PC			•		•	•	•
Formed PC			•		•	•	•
<b>Extended Operations</b>	•	•	•	•			

<b>Snap-acting</b>									
<b>Series</b>	<b>ZMA</b>	<b>ZMS</b>	<b>MDS</b>	<b>HB</b>	<b>A</b>	<b>TL</b>	<b>ZMSM</b>	<b>TFS</b>	<b>MS</b>
<b>Switch Type</b>	Subminiature	Sealed Subminiature	Subminiature	Standard Precision	General Purpose	Door Interlock	Sealed Subminiature	Sealed Miniature	Sub Miniature
<b>Poles/Throws</b>	SPDT	SPDT	SPDT	SPST, SPDT	SPST, SPDT, DP	SPDT	SPDT	SPDT	SPDT SPST
<b>Maximum Current</b>	3 Amps	3 Amps	300 m Amps	20 Amps	30.1 Amps	15 Amps	3 Amps	10 Amps	0.1 / 5 Amps
<b>Terminations</b>									
Solder		•	•	•		•	•		•
Quick Connect				•	•	•		•	•
Wire Leads		•					•	•	
Screw				•		•			
PCB Thru-hole	•	•	•				•		•
Flat & Step Base				•					
<b>Bushing</b>				15/32-32	3/8-23				
<b>Sealed</b>		•		•			•	•	

## 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

## 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
- Various PCB terminals and actuators
- Electrical life 300,000 cycles @ 0.1A / 10,000 cycles @ 3A

### Typical Applications

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

Part Number	Function	Electrical Rating	Operating Force	Actuator	Mounting Style/ Termination
ZMA03A150S07EC	SPDT, Momentary	3A @ 125 V AC 24 V DC	5.29 oz. / 150 grams	Simulated roller 0.75mm	Solder
ZMA00A150L04PC	SPDT, Momentary	0.1A @ 125 V AC 60 V DC	5.29 oz. / 150 grams	Lever 4.55mm	PC thru-hole
ZMA03A150A03PC	SPDT, Momentary	3A @ 125 V AC 24 V DC	5.29 oz. / 150 grams	Roller 1.87mm	PC thru-hole

## LCS Series Subminiature Sealed Snap-acting Switches



### Features/Benefits

- Compact design
- Long life and high electrical capacity
- 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 10A 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 10A 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 10A G.P. @ 125 / 250 V AC 1/3HP @ 125/250 V AC 50/60 Hz 10,000 cycles	Momentary, pulled out button	4.8 x 0.5 mm

## Product Selection Guide

<b>Rotary</b>							
<b>Series</b>	<b>A</b>	<b>RTA</b>	<b>M</b>	<b>R</b>	<b>F</b>	<b>H</b>	<b>RW</b>
<b>Switch Type</b>	Multi-pole/ Multi-position	Multi-pole/ Multi-position	Half-inch	Rota-slide	Rota-slide	Power Rota-slide	Subminiature Rotary SMT
<b>Miniature</b>		•			•		•
<b>Low Profile</b>					•		•
<b>Screwdriver Slot</b>	•	•		•	•		
<b>Illumination</b>							
<b>Power</b>						•	
<b>Maximum Current</b>	2.5 Amps	150 mA	6 Amps	5 Amps	4 Amps	12 Amps	0.1 A 10mA
<b>Poles</b>	1-4	1-4	1 & 2	1 & 2	1 & 2	1 & 2	1
<b>Indexing</b>	30°, 45°, 90°		30° & 36°	36°	45° & 90°	45° & 90°	36° & 45°
<b>Splashproof</b>	•		•				
<b>Sealed</b>			• F option				
<b>Non-shorting/ Shorting Contacts</b>	•		•				
<b>Panel Mount Options</b>							
<b>Front Mount</b>							
<b>Rear Mount</b>	•	•	•	•	•	•	
<b>PCB Mount Options</b>							
<b>Vertical</b>	•	•	•	•	•		•
<b>Terminations</b>							
<b>Solder Lug</b>	•	•	•	•	•	•	
<b>Wire Lead</b>				•	•	•	
<b>Quick Connect</b>							
<b>PC</b>	•	•	•	•	•		

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## 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
- 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)

### Typical Applications

- Ceiling fans
- Industrial equipment
- Portable tools

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

## RW Series Subminiature Rotary Switches



### Features/Benefits





- 8 and 10 position
- Subminiature design

### Typical Applications

- Digital cameras
- Audio visual equipment
- Consumer electronics

Part Number	Function	Contact Rating	Twist Force	Operating Life	Termination
RW-108-NS RT	1 pole 8 position	0.1A @ 16 V DC	150 ± 100 gf	10,000 cycles	SMT
RW-1106-NS RT	1 pole 10 position	10 mA @ 5 V DC	90 ± 15 gf	7,000 cycles	SMT

## Product Selection Guide

<b>Switchlock</b>				
<b>Series</b>	<b>Y</b>	<b>YF</b>	<b>YM</b>	<b>PF &amp; PM</b>
<b>Switch Type</b>	4,5,6 Tumbler	4 Tumbler	4 Tumbler	Tumbler
<b>Lock</b>	Metal	Metal	Metal	Plastic
<b>Latch Pawl</b>	•			
<b>Miniature</b>		•	•	•
<b>Anti-static</b>	•			
<b>Momentary</b>	•			
<b>Poles</b>	1 & 2	1 & 2	1	1 & 2
<b>Indexing</b>	45° & 90°	45° & 90°	90°	45° & 90°
<b>Max. Current</b>	4 Amps	4 Amps	4 Amps	4 Amps
<b>Panel Mount Options</b>				
Snap-in				•
Bushing	•	•	•	
PC Thru-hole	•			

<b>Switchlock</b>			
<b>Series</b>	<b>A</b>	<b>H</b>	<b>PL</b>
<b>Switch Type</b>	4 & 5 Tumbler	5 Tumbler	5 Tumbler
<b>Lock</b>	Metal	Metal	Plastic
<b>Cam</b>			•
<b>Miniature</b>			•
<b>Anti-static</b>	•		
<b>Momentary</b>			
<b>Poles</b>	1 - 4	1 & 2	N/A
<b>Indexing</b>	30°, 45°, 90°	45° & 90°	90°
<b>Max. Current</b>	2.5 Amps	12 Amps	
<b>Panel Mount Options</b>			
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

## P Series 4 Tumbler Snap-in Switchlocks



### Features/Benefits

- Snap-in mounting
- Multi-pole and multi-position
- Positive detent
- Contact rating Silver 4 AMPS @ 125 V AC or 28 V DC; 2 AMPS @ 250 AC V AC (UL).  
Gold 0.4 VA MAX. @ 20 V AC or DC MAX. or 4 AMPS @ 125 V AC or 28 V DC; 2 AMPS @ 250 V AC (UL)
- Electrical life 10,000 make-and-break cycles at full load


### Typical Applications

- Computers
- Business machines
- Communication equipment

Part Number	Function	Keying	Lock Type	Termination	Contact Material
P10113TCM03Q22	SP, 90° Index, keypull pos. 1	One nickel plated brass key with insert molded plastic square head and one nickel plated brass key	4 Tumbler lock with detent	Solder lug	Silver
P101132CM03Q2	SP, 90° Index, keypull pos. 1	Two nickel plated brass keys	4 Tumbler lock with detent	Solder lug	Silver
P201132CM03G2	DP, 90° Index, keypull pos. 1	Two nickel plated brass keys	4 Tumbler lock with detent	Solder lug	Gold over silver

Note - this catalog represents a small sample of C&K part numbers. C&K has over 55,000 part numbers available.  
Please refer to the C&K full line catalog for a complete list of products and configurations.  
Dimensions and specifications subject to change.

## Product Selection Guide

<div>Thumbwheel/ Pushwheel</div> <div></div>	
Series	3
Switch Type	Thumbwheel
Sealed	•
Dust Lens	•
Max. Current	1 Amp
Actuators	
Pushwheel Actuator	
Thumbwheel Actuator	•
Section Pitches	
10mm Section Pitch	•
.300 Section Pitch	.315/.350
.400 Section Pitch	
Number of Positions	
10 Position	•
16 Position	•
Mounting Options	
Board Mount w/Pins	•
Front Mount	•
Rear Mount	•
Snap-in	•

## CCM01 Series Full Size Card Connectors



### Features/Benefits

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

### Typical Applications

- Transaction
- Identification
- POS

Part Number	Number of Contacts	Termination	Operating Life	Card Insertion Force
CCM01-2013 LFT	8	SMT	100,000 cycles	10N
CCM01-2327 LFT	8	SMT	500,000 cycles	40N

## CCM02 Series Full Size Card Connectors



### Features/Benefits

- Operating life 500,000 cycles
- 10 to 40 N card insertion force
- EMV
- PCI & PCI ready
- Card detection sealed switch

### Typical Applications

- Transaction
- Identification
- POS

Part Number	Number of Contacts	Termination	Contact Type	PCB version
CCM02-2504 LFT	8	SMT	landing	4 clips
CCM02-F504 LFT	8	SMT	friction	4 clips
CCM02-F844 LFT*	8	SMT	friction	4 metal pegs

\* Includes PCI features I/O Protect and Security Cover

## CCM04 Series Full Size Card Connectors



### Features/Benefits

- ID1 full size card acceptance
- Card detection sealed switch
- Compatible with pick and place and lead free soldering

### Typical Applications

- Transaction
- Identification
- POS

Part Number	Number of Contacts	Termination	Housing Type	Contact Force
CCM04-5202 LFT	8	SMT	standard	0,35 to 0,65N

## 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

### Typical Applications

- Handheld products
- Identification
- POS
- Automotive

Part Number	Number of Contacts	Termination	Contact Plating	Cover	Card Presence Switch	Operating Life
CCM03-3001 LFT	6	SMT	inlay	hinged	without	10,000 cycles
CCM03-3009 LFT	6	SMT	gold	hinged	without	10,000 cycles
CCM03-3013 LFT	6	SMT	gold	hinged	with	10,000 cycles
CCM03-3754 LFT	6	SMT	inlay	fixed	with	10,000 cycles

*Note - this catalog represents a small sample of C&K part numbers. C&K has over 55,000 part numbers available. Please refer to the C&K full line catalog for a complete list of products and configurations. Dimensions and specifications subject to change.*

## High-Reliability Rectangular Connectors for Space-Level Applications

For nearly 30 years, C&K Components has offered a broad range of high reliability connectors for the aerospace market, including European Space Agency-approved micro-D, single in-line microminiature, and D-subminiature connectors. Currently referenced in 15 ESA specifications, C&K offers more than 3,000 ESA QPL-qualified rectangular connectors for a variety of space applications, from the smallest size research and survey to the largest telecommunication satellites. **Please refer to the Space and High Reliability full line catalog for part numbers, drawings and product specifications on [www.ck-components.com](http://www.ck-components.com).**

### D-Subminiature Connectors



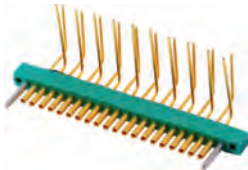
C&K's full line of D\*M and D\*MA Series D-subminiature connectors are employed in satellites and launchers, and meet strict tests for outgassing and residual magnetism. Offered in a variety of contact layouts (including with coax, power or crimp contacts) and shell sizes, the D-sub connectors are available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



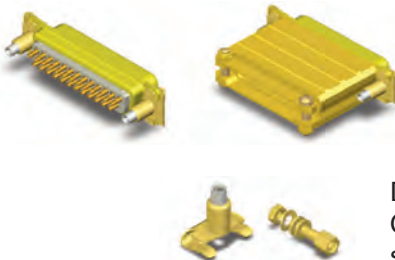
Utilized in satellites as a connection between PCBs, C&K's MTB1 micro-strip single in-line microminiature connectors also employ a high performance Micropin™ contact system and meet stringent requirements for outgassing and residual magnetism. The connectors are suitable for board-to-board, board-to-cable,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



### Fast-Locking Connectors



The fast locking D-sub connector's unique design provides blind assembly and eliminates the need for screws, washers, and clips during connector integration. The fast locking D-sub connector solution allows for maximum time savings during satellite assembly integration tests (AIT). It can be used with the D\*MA and D\*M Series D-subminiature connectors in harsh environments. The fast locking system is ESCC QPL-qualified and can withstand excessively high vibration levels in equipment applications, such as connecting payloads and wiring harnesses.

## Part Number List

Part Number	Page Number	Part Number	Page Number
1101M1S3ZQE2	42	CCM03-3754LFT	54
1101M2S3AV2QE2	42	CCM04-5202LFT	53
1101M2S3CBE2	42	CD10RM0SBR	39
1101M2S3CQE2	42	CD16RM0SBR	39
7101J1ABE2	35	CRD10RM0CB	39
7101J1AQE2	35	CRD16CM0SBR	39
7101J1AV2QE2	35	D101J12S215PQA	35
7101P3YZQE	31	D501J12S2AHQA	35
7101SYCQE	31	D502J12S2AHQA	35
7101SYZQE	31	D6C90 F1 LFS	23
7103SYZQE	31	D6L90 F1 LFS	23
7201SYZQE	31	D6R10 F1 LFS	23
8121J81ZGE22	8	D6R90 F1 LFS	23
8121SHZGE	8	DF62J12S215PQA	36
8125SHCBE	8	DF62J12S2AHQA	36
8125SHZBE	8	DF62J12S2APQA	36
8161SHZQE2	8	DS1D6AQ1	47
8168LHZQE2	8	DS2D6BQ1	47
8168SHZGE2	8	DS2D6CQ1	47
8168SHZQE2	8	E101J1AQE2	35
8221SHZGE	8	E101J3V31QE2	35
A10305RNCB	49	E101MD1ABE	31
A11405RNZQ	49	E101MD1AQE	31
A20605RNCQK	49	E101MD1AV2GE	31
ADPDC2T04AC	46	E103MD1ABE	31
AP2D200TWBE	9	E105SD1CBE	31
AP2D300SZBE	9	E201J1V31QE2	35
AP4D200TWBE	9	EDM450SAC LFS	19
AP4D200TZBE	9	EDM650SSC LFS	19
AP4E300TZBE	9	EDSAC LFS	19
ASKHC2J04AC	46	EDSSC LFS	19
ASKHC2T04AC	46	EP11SD1ABE	7
AYZ0102AGRLC	43	EP11SD1AVBE	7
AYZ0202AGRLC	43	EP11SD1CBE	7
AYZ0203AGRLC	43	EP11SD1SAPE	7
BPA01B	38	EP12SD1ABE	7
BPA04B	38	ET01MD1ABE	32
BPA05SB	38	ET01MD1CBE	32
CA01J12207PQ	36	ET01MD1SAPE	32
CA04J137207PQ	36	ET08LD1CBE	32
CA04J167207Q	36	ET21MD1AQE	32
CCM01-2013LFT	53	FP11SPA1B1TP02	7
CCM01-2327LFT	53	FP11SPA1B1TP03	7
CCM02-2504LFT	53	FP11SPC1B1TP00	7
CCM02-F504LFT	53	FP11SPC1B1TP02	7
CCM02-F844LFT	53	FP11SPC1B1TP03	7
CCM03-3001LFT	54	GT11MCBE	32
CCM03-3009LFT	54	GT11MSABETR	32
CCM03-3013LFT	54	GT11MSCBETR	32



Part Number	Page Number	Part Number	Page Number
GT23MAVBE	32	KSC441V2SPDLFS	16
HDT0001	27	KSC4D2J50SH	28
HS-2206A1NS	29	KSC641J LFS	17
ITS10FV1ST	18	KSC821J OL LFS	17
ITS13FV2SR	18	KSC831J OL LFS	17
ITS23FR1ST	18	KSC841J OL LFS	17
ITS40FR2ST	18	KSC941J LFS	17
ITS50FV3SR	18	KSEK43LFS	16
JS202011AQN	43	KSEM31JLFS	16
JS202011SCQN	43	KSJ0M41180SHLFT	17
JS203011CQN	43	KSJ0VD180SH LFT	28
JSX08001SAQNL	43	KSM1131D LFG	27
K12A BK 1 5N	23	KSR221G LFS	16
K12C 1 5N	23	KSR221G NC LFS	16
K12GO BK 1.5 6/12N	23	KSR223GNC LFG	16
K12P BK 1 5N	23	KSR231G LFS	16
K12PL WH 1.5 5N LV302	23	KSR251G LFS	16
K12SB S 1.5 3.5N C LFTX	23	KSS221GLFS	16
K12SB S 1.5 9N O LFTX	23	KSS231GLFS	16
K12SC L 1.5WHO 9N O LFTX	23	KSS321GLFS	16
K12SC D 1.5 4/8N OO LFTX	23	KSU213WLFG	27
K5AT GA 43 G	18	KT11 B0 SA3M 34 LFS	19
K5AT WH 43 G	18	KT11 B2 SAM 34 LFS	19
K5V 1 BA 43 T P3	18	KT11 P3 SA1M 34 LFS	19
K5V 1 BU 43 T	18	KT11 P3 SM 34 LFS	19
K5V 1 YG 43 T	18	KT11 P4 SA2M 35 LFG	19
K5V 4 BU 43 G P3	18	L102011MS02Q	42
K5V 5 WH 43 G	18	L202011MS02Q	42
K8xx41GLFS	18	L20202MA04Q	42
KM1202A08BE	28	L202031MS02Q	42
KM1202A08QE	28	LCGGL9P00EC	46
KMR211G LFS	13	LCGHF5A10RCE	46
KMR221G LFS	13	LCS011T05QDC	47
KMR231G LFS	13	LCS051P00PDC	47
KMR421G LFS	13	LCS051P00SDC	47
KMR431G LFS	13	MPS45WGW	29
KMS221G LFS	13	MS-105A01 (H)	46
KMS231G LFS	13	MS-118305-G	46
KMT011NGJ LHS	13	MS-118405-H	46
KMT031NGJ LHS	13	NP8S2D203QE	9
KMT071NGJ LHS	13	NP8S2D2W4QE	9
KSA0M211LFT	17	NP8S2R203QE	9
KSA0M311LFT	17	NP8S2T203QE	9
KSA0M332LFT	17	NP8S3D203QE	9
KSA0M411LFT	17	OS102011MS2QN1	44
KSC241JLFS	17	OS103011MS8QP1	44
KSC321JLFS	17	OS202011MA0QN1	44
KSC441J 70SH LFS	17	OS202011MS2QS1	44
KSC441J ST2 LFS	17	P101132CM03Q2	51

## Part Number List

Part Number	Page Number	Part Number	Page Number
P10113TCM03Q22	51	SDA04H0SBR	38
P201132CM03G2	51	SDA08H0B	38
PS-12G01	8	SDP002	27
PS-12G03	8	SDS0001	28
PS-2214-F NS PA	8	SERBKAUOA	24
PS-2214-L NS PA	8	SERUAUOA	24
PTS125SJM73 SMTR-2 LFS	15	SETBKAUOA	24
PTS125SK43-2 LFS	15	SK-12D04-VG 3 NS	44
PTS525SM15SMTR2LFS	13	SK-12D07-G 5 NS PA	44
PTS530GM055SMTRLFS	14	SK-12D07-VG 4 NS PA	44
PTS530GK055SMTRLFS	14	SK-13D21-G 2 RT	44
PTS540JK035SMTRLFS	14	SK-14D01-G6	44
PTS540JM035SMTRLFS	14	SRKGY	24
PTS641SM31SMTR2LFS	15	SS-12D07-VG 4 NS GA PA	44
PTS641TK25SMTR2LFS	15	SS-12D1505-G 2	44
PTS645SL43SMTR92 LFS	15	SS-14D08-VG 5 PA	44
PTS645VK31-2 LFS	15	SS-22D0205-G 2	44
PTS810SJM250SMTRLFS	14	SS-22D07-G 2 NS	44
PTS810SJK250SMTRLFS	14	STKWH	24
PTS820J25MSMTRLFS	14	SW-13A65N-A01 BK	36
PTS820J25KSMTRLFS	14	SW-13A65N-A01	36
PTS840PMSMTRLFS	15	T101MH9ABE	31
PTS840PKSMTRLFS	15	T101MH9AVBE	31
PTS840GMPMSMTRLFS	15	T102SHZQE	31
PTS840GKPSMTRLFS	15	T105LH9ABE	31
PTS840ESDPMSMTRLFS	15	T211MH9V3BE	31
PVA1EEH1 3.5N V2	24	TDA04H0SB1R	38
PVA1OAH1 1.2N V2	24	TDA08H0SB1R	38
PVA2EEH3 1.2N V2	24	TDA10H0SB1R	38
PVA2OAH5 1.7N V2	24	TFCDK6ST2640C	46
PVB4EE300NS LFS	24	TFCJL3SP004AC	46
PVB4OA300NS LFS	24	TP11SH8ABE	7
PVB6EE300NS LFS	24	TP11SH9ABE	7
PVB6OA300NS LFS	24	TP11SH9CBE	7
R10815RS02Q	49	TP11SHZQE	7
R20407RR03Q	49	TP12SH9ABE	7
R20507RR02Q	49	TPA511GLFS	21
RB-220-07 R	29	TSWA-3N-CB11 LFS	21
RB-231X2	29	TSWB-3N-CB222 LFS	21
RB-441-45	29	V80212MA08Q	42
RS-282G05A3-SM RT	19	V80212MS02Q	42
RS-284G05A2-U RT	19	V80212S205Q	42
RS-285G05A2-U RT	19	Y101132C203NQ	51
RTE0400N04	39	Y1011U2C203NQ	51
RTE1002G14	39	Y201132C203NQ	51
RTE1600V44	39	ZMA00A150L04PC	47
RW-108 NS RT	49	ZMA03A150A03PC	47
RW-1106 NS RT	49	ZMA03A150S07EC	47
SDA03H0SBR	38		

# Limited Warranty

## 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](http://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.

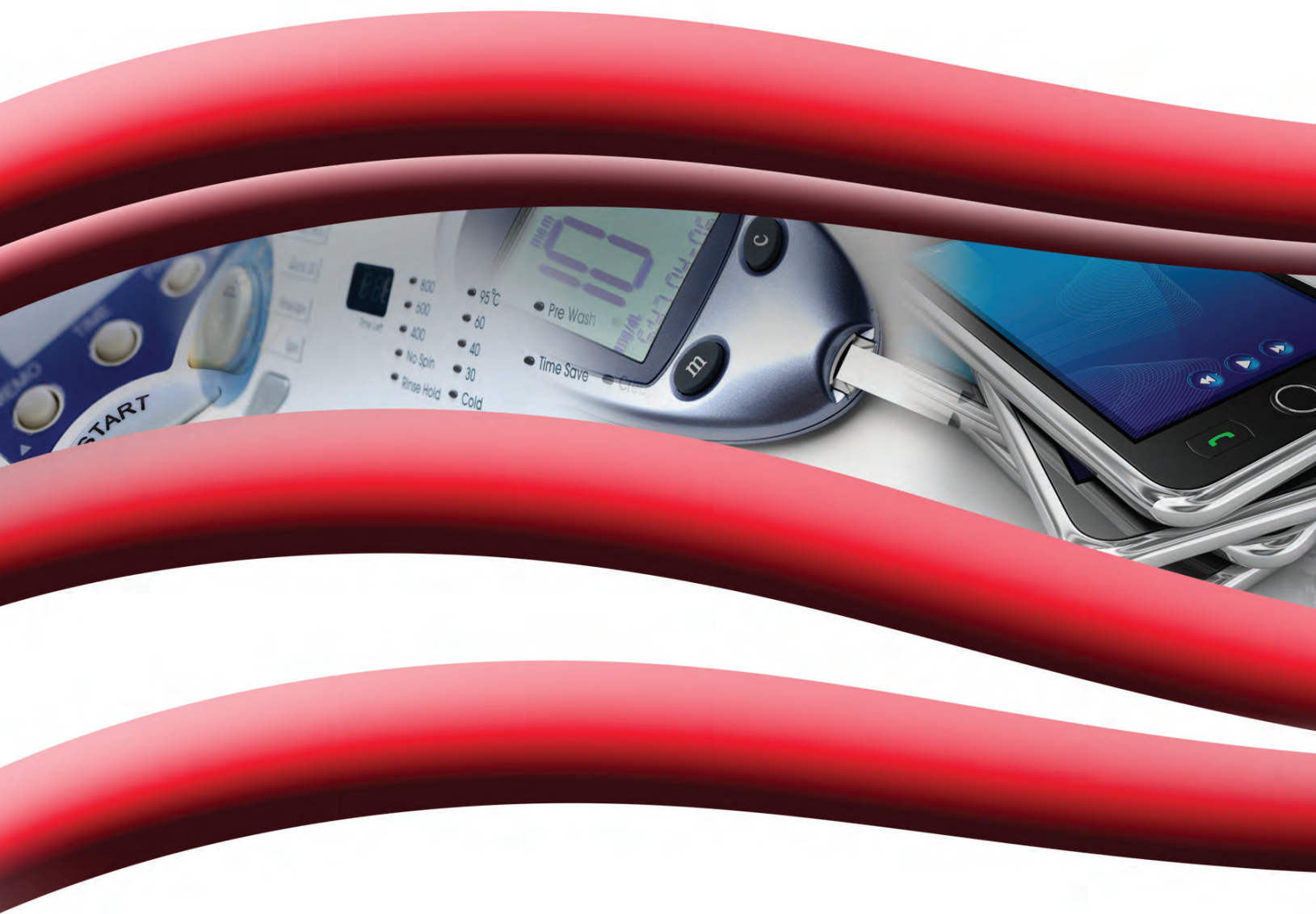
7. Delivery schedules are subject to prior sale and circumstances in effect at the time the purchase order is accepted by C&K. C&K shall not be held responsible for delays in delivery due to strikes; work stoppages; fires; floods; accidents; inability to obtain materials, fuels or transportation; government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



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