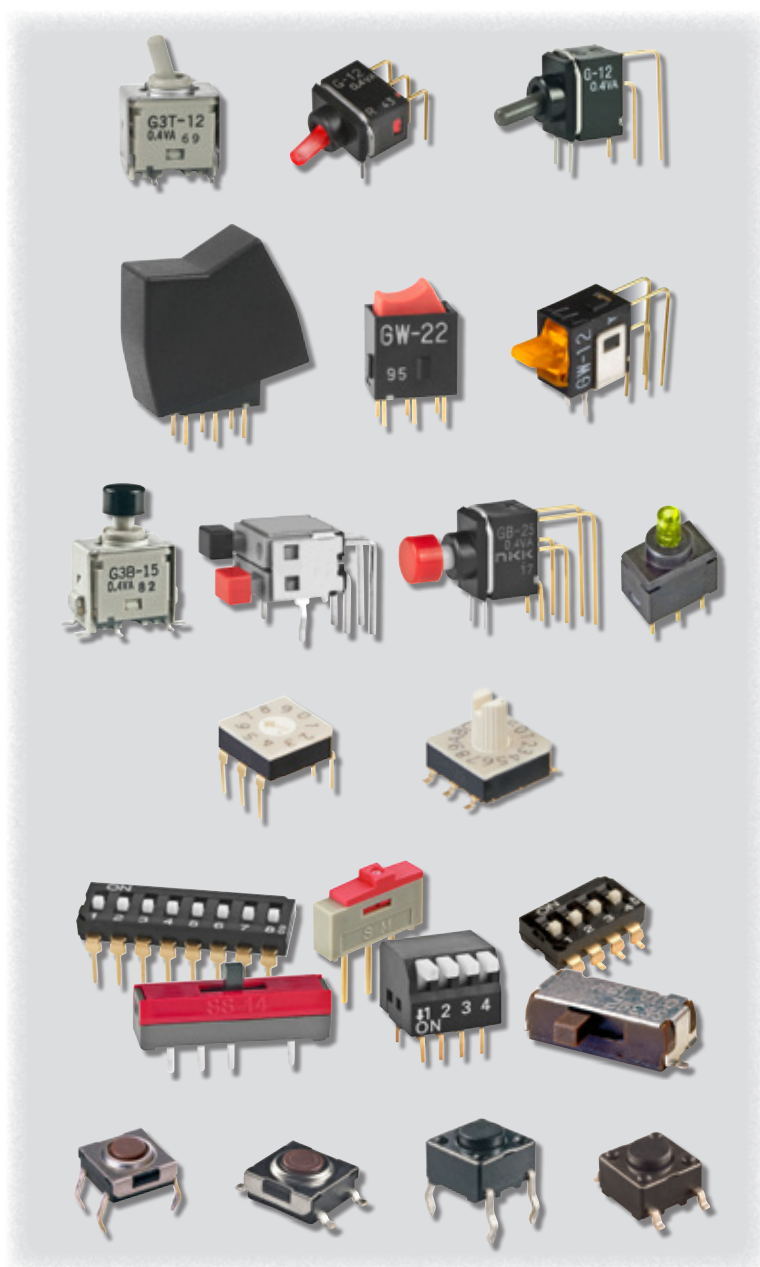


Ultra-Miniature Marvels

NKK has numerous options for designers requiring reputable ultra-miniature switches. Several actuators within this group are offered that will enhance applications, including toggles, rockers and paddles, pushbuttons, rotaries, slides and tactiles. The process sealed series simplify automated processing and cleaning techniques. DIP switches are represented in both rotaries and slides. Some are illuminated, some surface mount; tape-reel, stick-tube or partitioned tray packaging are offered in some of the series. Benefits and basic specifications of each series are presented to aid in the selection of the most appropriate switch for the application. If assistance is needed, our skilled engineers are available for consultation and support. The customer can confidently move forward with the project, equipped with superior products and outstanding service.



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TOGGLES

PROCESS SEALED TOGGLE

Characteristics & Specifications

G Series Toggles

G Series Process Sealed Ultra-Miniature Toggle

- Ultra-miniature size facilitates high density mounting; light weight of 0.25 gram ideal for use in handheld equipment
- Completely sealed body construction restricts contact contamination and permits automated soldering and cleaning
- Sliding twin contact mechanism provides smooth, positive detent actuation, unparalleled logic-level reliability, and contact stability



- Molded-in, epoxy sealed PC terminals in straight, right angle or vertical configurations
- .150" (3.8mm) column toggle
- Terminal spacing conforms to standard PC board grid spacing of .100" x .100" (2.54mm x 2.54mm). Round terminals simplify through-hole mounting.
- Matching indicators available

Resistive Load

Logic Level: 0.4VA max @ 28V AC/DC max
(Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)

Contact Resistance: 80 milliohms max

Insulation Resistance: 500 megohms min @ 500V DC

Dielectric Strength: 500V AC min for 1 minute min

Mechanical Life: 100,000 operations min for On-None-On & On-Off-On. 50,000 operations min for other circuits

Electrical Life: 100,000 operations min for On-None-On & On-Off-On. 50,000 operations min for other circuits

Nominal Operating Force: 0.93N for momentary & 1.20N for maintained

Angle of Throw: 28°

Operating Temperature Range: -254°C ~ +85°C (-13°F ~ +185°F)

FULLY ILLUMINATED TOGGLE

Characteristics & Specifications

G Series Illuminated Toggles

G Series Illuminated Ultra-Miniature Toggle

- Highly visible status indication in fully illuminated toggle - single colors in red, green or amber; red/green for bicolor
- Ultra-miniature size facilitates high density mounting; extremely light weight ideal for use in handheld equipment
- Completely sealed body construction restricts contact contamination and permits automated soldering and cleaning
- Sliding twin contact mechanism provides smooth, positive detent actuation, unparalleled logic-level reliability, and contact stability



- .150" (3.8mm) clear toggle
- Molded-in, epoxy sealed PC terminals in straight, right angle or vertical configurations
- Terminal spacing conforms to standard PC board grid spacing of .100" x .100" (2.54mm x 2.54mm). Round terminals simplify through-hole mounting.

Resistive Load

Logic Level: 0.4VA max @ 28V AC/DC max
(Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)

Contact Resistance: 80 milliohms max

Insulation Resistance: 500 megohms min @ 500V DC

Dielectric Strength: 500V AC min for 1 minute min

Mechanical Life: 100,000 operations min

Electrical Life: 100,000 operations min

Nominal Operating Force: 1.30N

Angle of Throw: 28°

Operating Temperature Range: -25°C ~ +55°C (-13°F ~ +131°F)

PROCESS SEALED SMT TOGGLE

Characteristics & Specifications

G3T Series Toggles

G3T Series Process Sealed Ultra-Miniature Toggle

- Ultra-miniature size facilitates high density mounting; light weight of 0.6 gram ideal for use in handheld equipment
- Gull-wing terminals provide mechanical stability during soldering, in upright, upright with bracket, and right angle mounting options
- Heat resistant resin used for housing, base and lever permits vapor phase and infrared convection reflow soldering
- Rapid automated placement enabled by tape-reel and stick-tube packaging. Tape-reel packaging meets EIA-481-D Standard.
- Design features achieve total seal, allowing automated processing techniques that include flux cleaning procedures: one-piece bushing and housing, rubber seals surrounding actuator and base, epoxy at joint of case and base, and molded-in, epoxy sealed terminals



- .150" (3.8mm) column toggle
- Sliding twin contact mechanism (STC) provides smooth, positive detent actuation, unparalleled logic-level reliability, and contact stability
- Coplanarity: all considered surfaces must lie between two parallel planes that are a maximum distance apart of 0.0059" (0.15mm)

Resistive Load

Logic Level: 0.4VA max @ 28V AC/DC max
(Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)

Contact Resistance: 80 milliohms max

Insulation Resistance: 500 megohms min @ 500V DC

Dielectric Strength: 500V AC min for 1 minute min

Mechanical Life: 50,000 operations min

Electrical Life: 50,000 operations min

Nominal Operating Force: 1.6N for momentary; 1.7N for maintained

Angle of Throw: 28°

Operating Temperature Range: -30°C ~ +85°C (-22°F ~ +185°F)

ROCKERS

PROCESS SEALED ROCKER

Characteristics & Specifications

G Series Rockers

G Series Process Sealed Ultra-Miniature Rocker

- Ultra-miniature size facilitates high density mounting; light weight of 0.25 gram ideal for use in handheld equipment
- Completely sealed body construction restricts contact contamination and permits automated soldering and cleaning
- Sliding twin contact mechanism provides smooth, positive detent actuation, unparalleled logic-level reliability, and contact stability



- Snap top actuator in black, white and red options
- Straight PC terminals conform to standard PC board grid spacing of .100" x .100" (2.54mm x 2.54mm). Round terminals simplify through-hole mounting.
- Matching indicators available

Resistive Load

Logic Level: 0.4VA max @ 28V AC/DC max
(Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)

Contact Resistance: 80 milliohms max

Insulation Resistance: 500 megohms min @ 500V DC

Dielectric Strength: 500V AC min for 1 minute min

Mechanical Life: 100,000 operations min for On-None-On & On-Off-On. 50,000 operations min for other circuits

Electrical Life: 100,000 operations min for On-None-On & On-Off-On. 50,000 operations min for other circuits

Nominal Operating Force: 0.81N for momentary; 1.06N for maintained

Angle of Throw: 28°

Operating Temperature Range: -25°C ~ +85°C (-13°F ~ +185°F)

ULTRA-THIN ROCKER

Characteristics & Specifications

GW Series Rockers

GW Series Ultra-Miniature Rocker

- Extremely thin size lends easily to high density PCB mounting, ideal to design into handheld equipment
- Rocker or paddle actuators in choice of white, red or gray
- Combination of dust cover and closely fit housing, actuator and interior pivot administers protection for contacts
- Design of detent mechanism consisting of coil spring, plunger, and plastic detent determines crisp, positive actuation
- Sliding twin contact mechanism provides smooth, positive detent actuation, unparalleled logic-level reliability, and contact stability
- .100" x .100" (2.54mm x 2.54mm) terminal spacing conforms to a standard PC board grid
- Straight, right angle, vertical mounting configurations
- Molded-in, epoxy sealed terminals protected from flux and other contaminants



Resistive Load

Logic Level: 0.4VA max @ 28V AC/DC max
(Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)

Contact Resistance: 80 milliohms max

Insulation Resistance: 500 megohms min @ 500V DC

Dielectric Strength: 500V AC min for 1 minute min

Mechanical Life: 50,000 operations min

Electrical Life: 50,000 operations min

Nominal Operating Force: For Rockers 1.70N
For Paddles 1.30N

Angle of Throw: 28°

Operating Temperature Range: -30°C ~ +85°C (-22°F ~ +185°F)

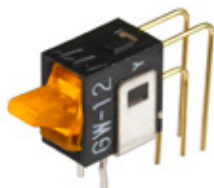
ULTRA-THIN FULLY ILLUMINATED PADDLE

Characteristics & Specifications

GW Series Illuminated Paddles

GW Series Illuminated Ultra-Miniature Paddle

- Highly visible status indication in fully illuminated paddle; LED options in single colors red, green, or amber; bicolor is red/green
- Ultra-miniature size facilitates high density mounting; light weight of 0.25 gram ideal for use in handheld equipment
- Sliding twin contact mechanism provides smooth, positive detent actuation, unparalleled logic-level reliability, and contact stability
- Gold plated contacts prevent oxidation and sulfide effect and provide stable contact resistance
- Insert molded terminals inhibit entry of flux and other contaminants
- .100" x .100" (2.54mm x 2.54mm) terminal spacing conforms to standard PC board grid spacing for straight, right angle, and vertical mounting



Resistive Load

Logic Level: 0.4VA max @ 28V AC/DC max
(Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)

Contact Resistance: 80 milliohms max

Insulation Resistance: 500 megohms min @ 500V DC

Dielectric Strength: 500V AC min for 1 minute min

Mechanical Life: 50,000 operations min

Electrical Life: 50,000 operations min

Nominal Operating Force: 1.0N

Angle of Throw: 28°

Operating Temperature Range: -25°C ~ +55°C (-13°F ~ +131°F)

PUSHBUTTONS

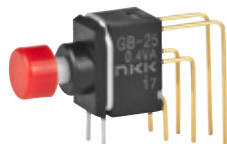
PROCESS SEALED PUSHBUTTON

Characteristics & Specifications

GB Series Pushbuttons

GB Series Ultra-Miniature Pushbutton

- Ultra-miniature size facilitates high density mounting; light weight of 0.25 gram ideal for use in handheld equipment
- Completely sealed body construction restricts contact contamination and permits automated soldering and cleaning
- Slip-on caps for .130" (3.3mm) long plunger in black, white, red
- Sliding twin contact mechanism provides smooth, positive detent actuation, unparalleled logic-level reliability, and contact stability
- .100" x .100" (2.54mm x 2.54mm) terminal spacing conforms to standard PC board grid spacing. Round terminals simplify through-hole mounting.



- PC terminals in straight, right angle or vertical configurations
- Matching indicators available

Resistive Load

Logic Level: 0.4VA max @ 28V AC/DC max
(Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)

Contact Resistance: 80 milliohms max

Insulation Resistance: 500 megohms min @ 500V DC

Dielectric Strength: 500V AC min for 1 minute min

Mechanical Life: 50,000 operations min

Electrical Life: 50,000 operations min

Nominal Operating Force: 1.70N

Travel: Pretravel 0.035" (0.9mm); Overtravel 0.008" (0.2mm);
Total Travel 0.043" (1.1mm)

Operating Temperature Range: -30°C ~ +85°C (-22°F ~ +185°F)

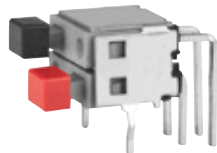
ULTRA-THIN PUSHBUTTON

Characteristics & Specifications

GB2 Series Pushbuttons

GB2 Series Ultra-Miniature Pushbutton

- Uniquely designed off-center actuator accommodates high density setup and simple actuation while avoiding accidental operation in compact environment
- Side-by-side, block mounting achievable when using AT546 bracket on straight PC mounting type
- Off-Momentary-On Circuit
- Extremely thin size lends easily to high density PCB mounting, ideal to design into handheld equipment
- Sliding twin contact mechanism provides smooth, positive detent actuation, unparalleled logic-level reliability, and contact stability



- Molded-in, epoxy sealed terminals lock out flux, solvents and contaminants
- .100" x .100" (2.54mm x 2.54mm) terminal spacing conforms to standard PC board grid spacing for straight and angle mounting

Resistive Load

Logic Level: 0.4VA max @ 28V AC/DC max
(Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)

Contact Resistance: 80 milliohms max

Insulation Resistance: 500 megohms min @ 500V DC

Dielectric Strength: 500V AC min for 1 minute min

Mechanical Life: 50,000 operations min

Electrical Life: 50,000 operations min

Nominal Operating Force: 1.0N

Travel: Pretravel 0.020" (0.5mm); Overtravel 0.023" (0.6mm);
Total Travel 0.043" (1.1mm)

Operating Temperature Range: -25°C ~ +70°C (-13°F ~ +158°F)

PROCESS SEALED SMT PUSHBUTTON

Characteristics & Specifications

G3B Series Pushbuttons

G3B Series Process Sealed Ultra-Miniature Pushbutton

- Ultra-miniature size facilitates high density mounting; light weight of 0.6 gram ideal for use in handheld equipment
- Gull-wing terminals with upright, upright with bracket, and right angle mounting options provide stability during soldering
- Heat resistant resin used for housing, base and plunger permits vapor phase and infrared convection reflow soldering
- Rapid automated placement enabled by tape-reel and stick-tube packaging. Tape-reel packaging meets EIA-481-D Standard.
- Design features achieve total seal, allowing automated processing techniques that include flux cleaning procedures: one-piece bushing and housing, rubber seals surrounding actuator and base, epoxy at joint of case and base, and molded-in, epoxy sealed terminals



- Optional caps available in black, white and red
- Sliding twin contact mechanism (STC) provides smooth, positive detent actuation, unparalleled logic-level reliability, and increased contact stability
- Coplanarity: all considered surfaces must lie between two parallel planes that are a maximum distance apart of 0.0059" (0.15mm)

Resistive Load
 Logic Level: 0.4VA max @ 28V AC/DC max
 (Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)

Contact Resistance: 80 milliohms max

Insulation Resistance: 500 megohms min @ 500V DC

Dielectric Strength: 500V AC min for 1 minute min

Mechanical Life: 50,000 operations min

Electrical Life: 50,000 operations min

Nominal Operating Force: 2.0N

Travel: Pretravel 0.024" (0.6mm); Overtravel 0.019" (0.5mm);
 Total Travel 0.043" (1.1mm)

Operating Temperature Range: -30°C ~ +85°C (-22°F ~ +185°F)

FULLY ILLUMINATED PLUNGER

Characteristics & Specifications

GB Series Illuminated Pushbuttons

GB Series Illuminated Ultra-Miniature Pushbutton

- Highly visible status indication in fully illuminated plunger with single LED colors in red, amber or green
- Ultra-miniature size facilitates high density mounting; extremely light weight ideal for use in handheld equipment
- Completely sealed body construction restricts contact contamination and permits automated soldering and cleaning
- Sliding twin contact mechanism provides smooth, positive detent actuation, unparalleled logic-level reliability, and contact stability
- .130" (3.3mm) clear plunger



- Insert-molded PC terminals lock out flux, solvents and other contaminants; straight, right angle or vertical configurations
- Terminal spacing conforms to standard PC board grid of .100" x .100" (2.54mm x 2.54mm). Round terminals simplify through-hole mounting.

Resistive Load
 Logic Level: 0.4VA max @ 28V AC/DC max
 (Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)

Contact Resistance: 80 milliohms max

Insulation Resistance: 500 megohms min @ 500V DC

Dielectric Strength: 500V AC min for 1 minute min

Mechanical Life: 50,000 operations min

Electrical Life: 50,000 operations min

Nominal Operating Force: 1.70N

Travel: Pretravel 0.035" (0.9mm); Overtravel 0.008" (0.2mm);
 Total Travel 0.043" (1.1mm)

Operating Temperature Range: -25°C ~ +55°C (-13°F ~ +131°F)

ROTARIES

ULTRA-THIN DIP ROTARY

Characteristics & Specifications

FD01 Series Rotaries

FD01 Series Ultra-Miniature Rotary

- Compact dimensions of 7.2mm (0.283") or 7.7mm (0.303") square, with a height of 3.1 to 3.3mm (0.122" to 0.130"), lend easily to high density mounting
- Screwdriver or plastic shaft actuation options
- Circuit choices of real or complement coded, and decimal or hexadecimal positions
- Internal design incorporating metal springs enhances smooth, crisp operation
- Consistent connection ensured by even distribution of reaction force from movable contact components. Advanced contact reliability achieved through gold plated contacts.
- Through-hole terminals with straight or right angle mounting configurations and inch terminal grid spacing
- Packaging in stick-tubes



Resistive Load

Rating: 0.4VA max, 20V max, AC/DC

Contact Resistance: 100 milliohms max (at 20mV, 10mA)

Insulation Resistance: 250V DC, 1 GΩ min

Dielectric Strength: 250V AC min for 1 minute min

Mechanical Life: 10,000 operations min

Electrical Life: 10,000 operations min

Nominal Operating Torque: 0.002Nm ± 0.02Nm

Operating Temperature Range: -25°C ~ +85°C (-13°F ~ +185°F)

ULTRA-THIN SMT DIP ROTARY

Characteristics & Specifications

FD02 Series Rotaries

FD02 Series Ultra-Miniature Rotary

- Compact dimensions of 7.2mm (0.283") or 7.7mm (0.303") square, with a height of 3.1 to 3.3mm (0.122" to 0.130"), lend easily to high density mounting
- Screwdriver or plastic shaft actuation options
- Circuit choices of real or complement coded, and decimal or hexadecimal positions
- Internal design incorporating metal springs enhances smooth, crisp operation
- Consistent connection ensured by even distribution of reaction force from movable contact components. Advanced contact reliability achieved through gold plated contacts.
- Switch reliability during vapor phase and infrared convection reflow soldering enabled by heat resistant resin of body
- Surface mount (gull wing) terminals contribute to mechanical stability during soldering and simplified solder joint inspection
- Upright or right angle mounting configurations
- Packaging in tape-reel meets EIA-481-D Standard
- Coplanarity: all considered surfaces must lie between two parallel planes that are a maximum distance apart of 0.0039" (0.1mm)



Resistive Load

Rating: 0.4VA max, 20V max, AC/DC

Contact Resistance: 100 milliohms max (at 20mV, 10mA)

Insulation Resistance: 250V DC, 1 GΩ min

Dielectric Strength: 250V AC min for 1 minute min

Mechanical Life: 10,000 operations min

Electrical Life: 10,000 operations min

Nominal Operating Torque: 0.002Nm ± 0.02Nm

Operating Temperature Range: -25°C ~ +85°C (-13°F ~ +185°F)

SLIDES

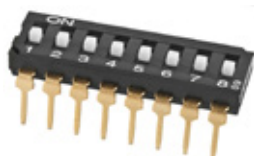
EXTENDED ACTUATOR DIP SLIDE

Characteristics & Specifications

JS01 Series Slides

JS01 Series Ultra-Miniature Slide

- Through-hole with extended slide actuator and 4 or 8 positions
- Twin sliding contact mechanism with self-cleaning action results in smooth actuation and high contact reliability
- Gold plated contacts prevent oxidation and sulfide effect while providing stable contact resistance
- Slanted terminals establish secure PCB mounting and prevent dislodging during wave soldering
- Terminal spacing conforms to standard 0.100" (2.54mm) PC board grid
- Use of self-extinguishing UL94V-0 certified material in cover and base provides high arc resistance and high insulation resistance



- End-to-end stackable
- Packaging in stick-tubes with 24 or 46 pieces, depending on model

Resistive Load

Switching Rating: 25mA @ 24V DC

Nonswitching Rating: 0.1A @ 50V DC

Contact Resistance: 50 milliohms max

Insulation Resistance: 100 megohms min @ 500V DC

Dielectric Strength: 500V AC min for 1 minute min

Mechanical Life: 2,000 operations min

Electrical Life: 2,000 operations min

Total Travel: 0.031" (0.8mm)

Operating Temperature Range: -25°C ~ +70°C (-13°F ~ +158°F)

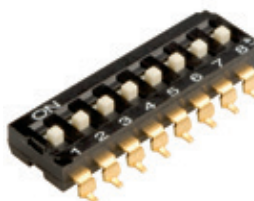
EXTENDED ACTUATOR SMT DIP SLIDE

Characteristics & Specifications

JS02 Series Slides

JS02 Series Ultra-Miniature Slide

- Extended actuators in 4 or 8 positions
- Twin sliding contact mechanism with self-cleaning action results in smooth actuation and high contact reliability
- Gold plated contacts prevent oxidation and sulfide effect and provide stable contact resistance
- Gull-wing terminals ensure secure PCB mounting and prevent dislodging during vapor phase and infrared convection reflow soldering
- Terminal spacing conforms to standard 0.100" (2.54mm) PC board grid
- Use of self-extinguishing UL94V-0 certified material in cover and base provides high arc resistance and high insulation resistance



- End-to-end stackable
- Packaging in tape-reel or stick-tube. Tape reel packaging meets EIA-481-D Standard.
- Coplanarity: all considered surfaces must lie between two parallel planes that are a maximum distance apart of .0059" (0.15mm)

Resistive Load

Switching Rating: 25mA @ 24V DC

Nonswitching Rating: 0.1A @ 50V DC

Contact Resistance: 50 milliohms max

Insulation Resistance: 100 megohms min @ 500V DC

Dielectric Strength: 500V AC min for 1 minute min

Mechanical Life: 2,000 operations min

Electrical Life: 2,000 operations min

Total Travel: 0.031" (0.8mm)

Operating Temperature Range: -25°C ~ +70°C (-13°F ~ +158°F)

PIANO ACTUATOR DIP SLIDE

Characteristics & Specifications

JS03 Series Slides

JS03 Series Ultra-Miniature Slide

- Through-hole with piano actuator and 4 or 8 positions
- Single pole single throw switch with OFF-ON circuit
- Gold plated contacts prevent oxidation and sulfide effect and provide stable contact resistance
- Slanted terminals ensure secure PCB mounting and prevent dislodging during wave soldering
- Terminal spacing conforms to standard PCB grid: 0.100" (2.54mm)



- Use of self-extinguishing UL94V-0 certified material in cover and base provides high arc resistance and high insulation resistance
- End-to-end stackable
- Packaging in stick-tubes with 23 or 44 pieces, depending on model

Resistive Load

Switching Rating: 25mA @ 24V DC

Nonswitching Rating: 0.1A @ 50V DC

Contact Resistance: 50 milliohms max

Insulation Resistance: 100 megohms min @ 500V DC

Dielectric Strength: 500V AC min for 1 minute min

Mechanical Life: 2,000 operations min

Electrical Life: 2,000 operations min

Total Travel: 0.114" (2.9mm)

Operating Temperature Range: -25°C ~ +70°C (-13°F ~ +158°F)

ULTRA-THIN SLIDE

Characteristics & Specifications

SM Series Slides

SM Series Ultra-Miniature Slide

- Very compact dimensions ideal for high density, side-by-side or end-to-end mounting within restrictive dimensional applications
- Positive actuation indicating circuit status provided by detent mechanism
- Visible indication of position by spot on top of red actuator and through window on side of switch
- Single pole double throw switch with ON-NONE-ON circuit
- Smooth actuation and high contact reliability credited to twin sliding contact mechanism with self-cleaning action



- Standard PC board mounting with .100" x .100" (2.54mm x 2.54mm) center-to-center inch terminal spacing in side-by-side-mounting or end-to-end arrangements
- Insert molded terminals prohibit entry of flux, solvents, and other contaminants

Resistive Load

Maximum Level: 500mA @ 12V DC

Minimum Level: 1.0mA max @ 10mV AC/DC max

Contact Resistance: 30 milliohms max

Insulation Resistance: 100 megohms min @ 500V DC

Dielectric Strength: 500V AC min for 1 minute min

Mechanical Life: 1,000 operations min

Electrical Life: 1,000 operations min

Nominal Operating Force: 2.0N

Contact Timing: Nonshorting (Break-before-make)

Total Travel: 0.063" (1.6mm)

Operating Temperature Range: -40°C ~ +85°C (-40°F ~ +185°F)

TOP OR SIDE ACTUATED SLIDE

Characteristics & Specifications

SS Series Slides

SS Series Ultra-Miniature Slide

- Board design flexibility with the options of top or side actuated slide switch
- High density mounting and close stacking of PC boards credited to compact dimensions and low profile
- Crisp actuation positively indicates circuit status
- Smoother, positive detent actuation, increased contact stability, and unparalleled logic-level reliability benefits of sliding twin contact (STC) mechanism
- Double molded thermoset base and thermoplastic housing prevent loosening of terminals due to high soldering temperatures



- Insert molded terminals prohibit entry of flux, solvents, and other contaminants
- Metric 2.0mm x 2.0mm or inch .100" x .100" terminal spacing for standard PC board grid

Resistive Load

Power Level for Silver: 0.1A @ 30V DC
 Logic Level for Gold: 0.4VA max @ 28V AC/DC max
 (Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)

Contact Resistance: 20 milliohms max for power lever;
 40 milliohms max for logic level

Insulation Resistance: 100 megohms min @ 500V DC

Dielectric Strength: 500V AC min for 1 minute min

Mechanical Life: 10,000 operations min

Electrical Life: 10,000 operations min

Contact Timing: SS12S & SS22S - Shorting (make-before-break)

Total Travel: 0.079" (2.0mm)

Operating Temperature Range: -15°C ~ +60°C (+5°F ~ +140°F)

SIDE ACTUATED SMT SLIDE

Characteristics & Specifications

SS3 Series Slides

SS3 Series Ultra-Miniature Slide

- High density mounting and close stacking of PC boards credited to compact dimensions and low profile
- Crisp actuation positively indicates circuit status
- Smoother, positive detent actuation, increased contact stability, and unparalleled logic-level reliability benefits of sliding twin contact (STC) mechanism
- Housing and base meet UL94V-0 flammability standards
- Heat resistant resin permits vapor phase and infrared convection reflow soldering
- Gull-wing terminals provide mechanical stability during soldering and simplified solder joint inspection
- Insert molded terminals, with metric spacing for standard PC board grid (2.0mm x 2.0mm), lock out flux and contaminants
- Tape-reel or partitioned tray packaging. Tape reel packaging meets EIA-481-D Standard.



- Coplanarity: all considered surfaces must lie between two parallel planes that are a maximum distance apart of 0.0059" (0.15mm)

Resistive Load

Logic Level: 0.4VA max @ 28V AC/DC max
 (Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)

Contact Resistance: 50 milliohms max

Insulation Resistance: 100 megohms min @ 500V DC

Dielectric Strength: 500V AC min for 1 minute min

Mechanical Life: 10,000 operations min

Electrical Life: 10,000 operations min

Contact Timing: SS312S - Shorting (make-before-break)

Total Travel: 0.079" (2.0mm)

Operating Temperature Range: -25°C ~ +85°C (-13°F ~ +185°F)

TACTILES

6mm PROCESS SEALED TACTILE

Characteristics & Specifications

CB Series Tactiles

CB Series 6mm Ultra-Miniature Tactile

- Sealed construction prevents contact contamination and allows automated soldering and cleaning
- Compact body dimension of 0.244" (6.2mm) square benefits high density mounting
- Heat tolerant resin for actuator and base meets flammability rating of UL94V-0 and maintains switch reliability through vapor phase and infrared convection reflow soldering
- Dome contact delivers crisp tactile feedback, positively indicating circuit transfer and assuring high reliability and long life of over 100,000 operations



- Crimped PC terminals provide spring type action, ensuring secure mounting and preventing dislodging during wave soldering
- Insert molded terminals lock out flux, solvents and other contaminants
- Stick-tube or partitioned tray packaging

Resistive Load

Low/Logic Level: 50mA @ 24V DC max

Contact Resistance: 100 milliohms max

Insulation Resistance: 100 megohms min @ 250V DC

Dielectric Strength: 250V AC min between contacts & between contacts & case for 1 minute min

Mechanical Life: 100,000 operations min

Electrical Life: 100,000 operations min

Nominal Operating Force: 1.57N

Total Travel: 0.010" (0.25mm)

Operating Temperature Range: -25°C ~ +70°C (-13°F ~ +158°F)

PROCESS SEALED SMT TACTILE

Characteristics & Specifications

CB3 Series Tactiles

CB3 Series 6mm Ultra-Miniature Tactile

- Sealed construction prevents contact contamination and allows automated soldering and cleaning
- 0.244" (6.2mm) square body facilitates compact mounting
- Heat tolerant resin for actuator and base meets flammability rating of UL94V-0 and maintains switch reliability through vapor phase and infrared convection reflow soldering
- Dome contact delivers crisp tactile feedback, positively indicating circuit transfer and assuring high reliability and long life of over 100,000 operations
- Gull-wing terminals ensure mechanical stability during soldering and simplify solder joint inspection
- Insert molded terminals lock out flux, solvents and contaminants



- Packaging in tape-reel or partitioned tray. Tape reel packaging meets EIA-481-D Standard.
- Coplanarity: all considered surfaces must lie between two parallel planes that are a maximum distance apart of 0.0059" (0.15mm)

Resistive Load

Low/Logic Level: 50mA @ 24V DC max

Contact Resistance: 100 milliohms max

Insulation Resistance: 100 megohms min @ 250V DC

Dielectric Strength: 250V AC min between contacts & between contacts & case for 1 minute min

Mechanical Life: 100,000 operations min

Electrical Life: 100,000 operations min

Nominal Operating Force: 1.57N

Total Travel: 0.010" (0.25mm)

Operating Temperature Range: -25°C ~ +70°C (-13°F ~ +158°F)

6mm STRAIGHT PC TACTILE

Characteristics & Specifications

HP02 Series Tactiles

HP02 Series 6mm Ultra-Miniature Tactile

- Compact body dimension of 0.244" (6.2mm) square benefits high density mounting
- Heat resistant resin body meets lead-free solder processing requirements and flammability rating for UL94V-0
- Gold plated contacts option for very low voltage/current applications offers advantages of little or no oxidization or sulfurization and stable contact resistance
- High reliability and long life of over 500,000 operations
- Crimped PC terminals provide spring type action, ensuring secure mounting and preventing dislodging during automated soldering



- Insert molded terminals lock out flux, solvents and other contaminants
- Stick-tube packaging promotes rapid automated placement of switches

Resistive Load

Power Level for Silver: 3VA max @ 28V DC max
 (Applicable Range 10mA ~ 125mA @ 0.1V ~ 28V)
 Logic Level for Gold: 0.4VA max @ 28V AC/DC max
 (Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)

Contact Resistance: 100 milliohms max

Insulation Resistance: 100 megohms min @ 100V DC

Dielectric Strength: 250V AC min for 1 minute min between contacts & between contacts & case

Mechanical Life: 500,000 operations min

Electrical Life: 500,000 operations min

Nominal Operating Force: 1.60N

Total Travel 0.008" (0.2mm)

Operating Temperature Range: -20°C ~ +70°C (-4°F ~ +158°F)

6mm SMT TACTILE

Characteristics & Specifications

HP03 Series Tactiles

HP03 Series 6mm Ultra-Miniature Tactile

- Compact body dimension of 0.244" (6.2mm) square benefits high density mounting
- Heat resistant resin body meets lead-free solder processing requirements and flammability rating for UL94V-0
- Gold plated contacts option for very low voltage/current applications offers advantages of little or no oxidization or sulfurization and stable contact resistance
- High reliability and long life with over 500,000 operations
- Gull-wing terminals provide mechanical stability during soldering and simplified solder joint inspection
- Insert molded terminals lock out flux, solvents and other contaminants, and allow automated soldering



- Stick-tube and tape-reel packaging promote rapid automated placement. Tape reel packaging meets EIA-481-D Standard.
- Coplanarity: all considered surfaces must lie between two parallel planes that are a maximum distance apart of 0.0039" (0.10mm)

Resistive Load

Power Level for Silver: 3VA max @ 28V DC max
 (Applicable Range 10mA ~ 125mA @ 0.1V ~ 28V)
 Logic Level for Gold: 0.4VA max @ 28V AC/DC max
 (Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)

Contact Resistance: 100 milliohms max

Insulation Resistance: 100 megohms min @ 100V DC

Dielectric Strength: 250V AC min for 1 minute min between contacts & between contacts & case

Mechanical Life: 500,000 operations min

Electrical Life: 500,000 operations min

Nominal Operating Force: 1.60N

Total Travel 0.008" (0.2mm)

Operating Temperature Range: -20°C ~ +70°C (-4°F ~ +158°F)