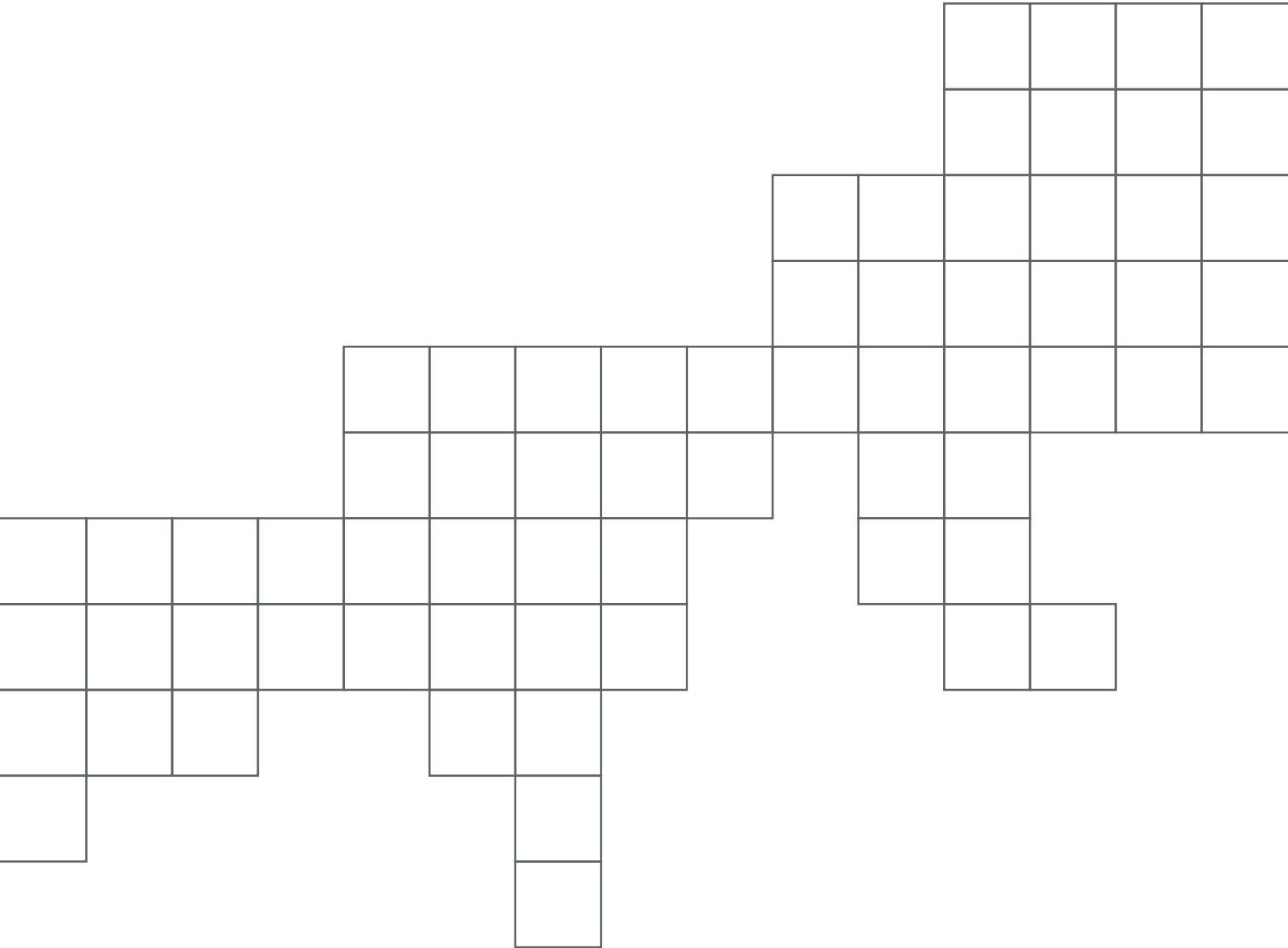


Switches



Switches

CTS Corporation offers a variety of switches to accommodate the needs of manufacturers in an assortment of industries. These switches include DIP switches, rotary DIP switches, rotary selector switches and tactile switches. As a pioneer of modern DIP switch technology, CTS provides high quality, affordable products paired with exceptional customer service to remain at the forefront of the industry. CTS aims to offer value beyond the physical product, and is committed to being your partner in smart solutions.





PROG
MAN

SET

PROG/MAN

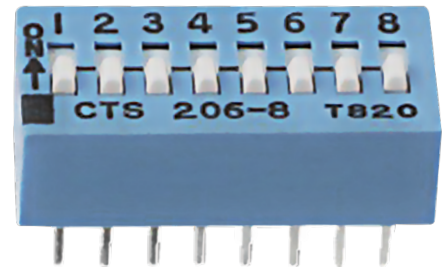
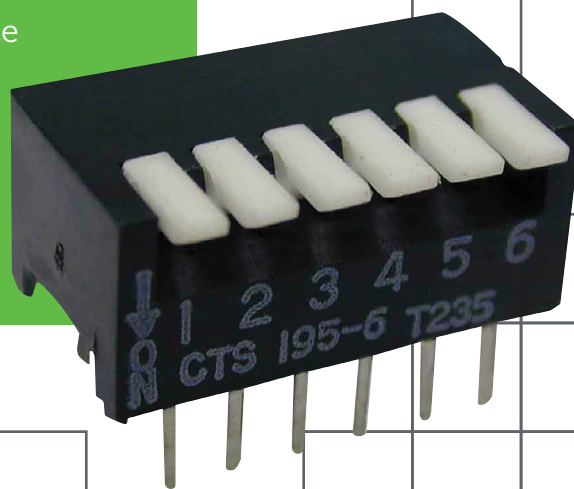
COOL - OFF - HEAT

POWERED - INSTRUCT

Switches

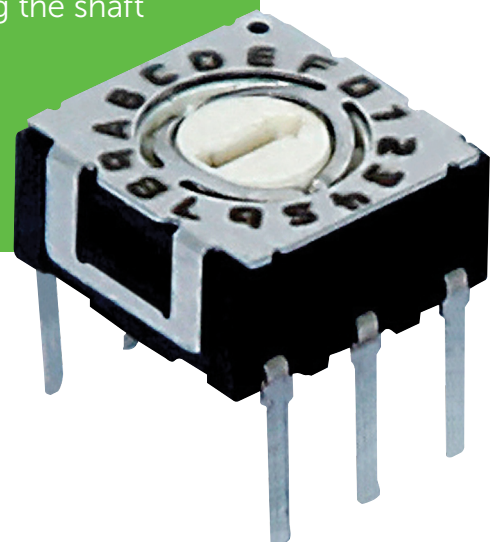
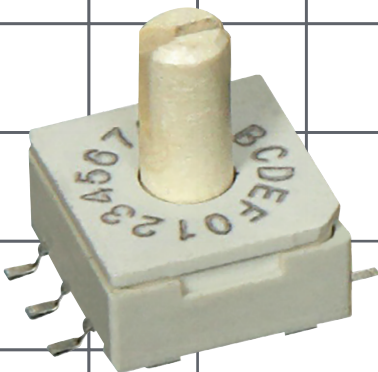
DIP Switches

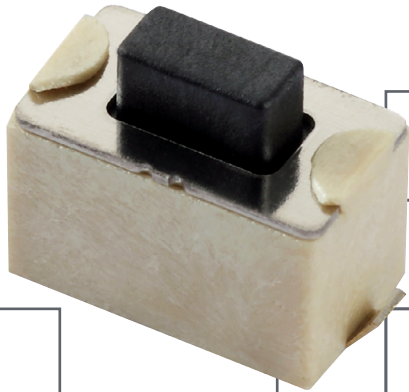
For use on PCBs along with other components to customize and/or configure the behavior of an electronic device via the use of slide or lever-style actuators.



Rotary DIP Switches

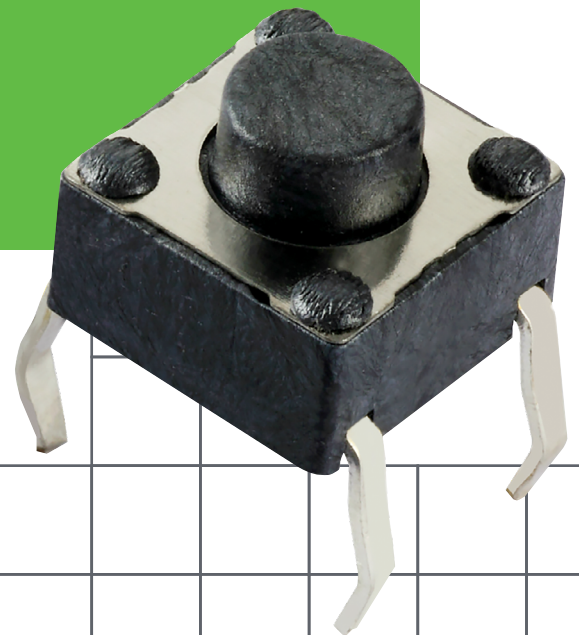
For use on PCBs along with other components to customize and/or configure the behavior of an electronic device by rotating the shaft through multiple positions.





Tactile Switches

A momentary on/off mechanical switch that turns on when the actuator or button is pressed, and off when released.



Rotary Selector Switches

Used to control one or more circuits with a single switch. These devices have advantages over other switches when a robust product or custom switching pattern is required.



DIP Switches

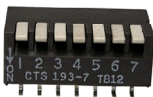

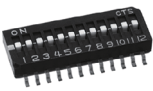
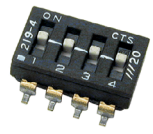
Typical Applications

Telecommunications, computer motherboards, remote controls and HVAC

A broad range of options are available for CTS slide- and lever-style DIP switches, including low-profile, half-pitch (.05 inch), standard-pitch (.1 inch), and through-hole and surface mount options. We offer top, right angle or side actuation styles. Our unique design and construction allows for superior ESD protection in many of our DIP switch products.

The CTS DIP switch product line includes SPST, SPDT, DPST and 3PST circuit switching options. Some styles are available with a choice of gold-plated or economical tin-plated contacts. An optional bottom epoxy seal and removable tape seal on the actuator side protects the switches during soldering and board washing. Custom marking is available.

Surface Mount DIP Switches

Series	Description	Actuation	Plating	Options	Life	Operating Temperature
193	 Side Actuated, Gull Wing, .100" Pitch Terminal Spacing, Bottom Epoxy Seal	SPST	Contacts — Gold, Terminals — Tin	Custom Marking, ON or OFF Shipping Position, Tape and Reel Packaging	7,000 Cycles	-40°C to +85°C
204	 Top Actuated, Gull Wing, .100" Pitch Terminal Spacing, ESD Protection	SPST, SPDT, DPST, 3PST	Contacts — Gold, Terminals — Tin	Top Tape Seal, 3 Actuator Heights, Custom Marking, ON or OFF Shipping Position, Tape and Reel Packaging	5,000 Cycles	-55°C to +85°C
218	 Low Profile, Top Actuated, .050" Pitch Terminal Spacing, Bottom Seal	SPST	Contacts — Gold, Terminals — Gold Flash	Top Tape Seal, J-Bend or Gull Wing, ON or OFF Shipping Position, Tape and Reel Packaging	1,000 Cycles	-55°C to +85°C
219	 Low Profile, Top Actuated, .100" Pitch Terminal Spacing, Bottom Seal	SPST	Contacts — Gold, Terminals — Tin	Top Tape Seal, 3 Actuator Heights, J-Bend or Gull Wing, Custom Marking, ON or OFF Shipping Position, Tape and Reel Packaging	2,000 Cycles	-55°C to +85°C

Through-Hole DIP Switches

Series	Description	Actuation	Plating	Options	Life	Operating Temperature
194	 Side Actuated, .100" x .300" Terminal Spacing, Bottom Epoxy Seal	SPST	Contacts — Gold, Terminals — Tin	Top Tape Seal, Shipping Position, Custom Marking, ON or OFF Shipping Position	7,000 Cycles	-40°C to +85°C
195	 Side Actuated, .100" x .300" Terminal Spacing, Bottom Epoxy Seal	SPST	Contacts — Gold, Terminals — Tin	Top Tape Seal, Shipping Position, Custom Marking, ON or OFF Shipping Position	2,000 Cycles	-40°C to +85°C
206	 Top Actuated, .100" x .300" Terminal Spacing, ESD Protection	SPST, SPDT, DPST, 3PST	Contacts — Gold, Terminals — Tin	Bottom Epoxy Seal, Top Tape Seal, 3 Actuator Heights, Custom Marking, ON or OFF Shipping Position	10,000 Cycles	-55°C to +85°C
206RA 208RA	 Right Angle Actuated, .100" x .100" Terminal Spacing, ESD Protection	SPST, SPDT, DPST, 3PST	206RA: See 206, 208RA: See 208	Bottom Epoxy Seal, Top Tape Seal, 3 Actuator Heights, Custom Marking, ON or OFF Shipping Position	206: 10K Cycles, 208: 2K Cycles	-55°C to +85°C
208	 Top Actuated, .100" x .300" Terminal Spacing, ESD Protection	SPST, SPDT, DPST, 3PST	Contacts — Tin, Terminals — Tin	Bottom Epoxy Seal, Top Tape Seal, 3 Actuator Heights, Custom Marking, ON or OFF Shipping Position	2,000 Cycles	-55°C to +85°C
209	 Auto Insertable, Low Profile, Top Actuated, .100" Pitch Terminal Spacing, Bottom Seal	SPST	Contacts — Gold, Terminals — Tin	Bottom Epoxy Seal, Top Tape Seal, 3 Actuator Heights, Custom Marking, ON or OFF Shipping Position	2,000 Cycles	-40°C to +85°C
210	 Auto Insertable, Low Profile, Top Actuated, .100" Pitch Terminal Spacing, Bottom Seal	SPST	Contacts — Gold Flash, Terminals — Tin	Top Tape Seal, 3 Actuator Heights, Terminal Forming, Custom Marking, ON or OFF Shipping Position	1,000 Cycles	-40°C to +85°C



Rotary DIP Switches

Typical Applications

Navigation and communication equipment, sound mixing and editing consoles, automotive climate control and entertainment systems, military radios, transmitters and receivers

CTS's robust design features precise detents, clockwise or counterclockwise rotation, binary-coded decimal (BCD) and hexadecimal output, high-temperature resistance, gold-plated beryllium copper contacts and

tin-coated terminals. Rotary DIP switches can be used in many of the same applications that use slide-type DIP switches, as well as those that require less space on the PCB or require simple adjustments.

Series	Typical Applications	Rating	Code	Options	Rotation
220 7x7 mm	 Servers, Circuit Breakers, HVAC, Video, Industrial Communications, Security Systems	100 mA @ 50 VDC 10,000 Steps	BCD and Hexadecimal	4, 10, or 16 Positions, Shaft Style, Through-Hole, SMT-Gullwing	360° Continuous
221 10x10 mm	 Servers, Circuit Breakers, HVAC, Video, Industrial Communications, Security Systems	100 mA @ 50 VDC 10,000 Steps	BCD and Hexadecimal	10 or 16 Positions, Shaft Style, Through-Hole, SMT-Gullwing or J-bend	360° Continuous

Rotary Selector Switches

Typical Applications

Heavy equipment, major and small appliances, test and medical equipment, emergency lighting, siren, and HVAC controls

CTS's rotary switch product line offers both durable construction and versatility. The robust hill-and-valley detent system of these switches allows crisp and sure connections, while the molded stator prevents solder

from flowing into the circuit during the assembly process. This reliable construction combined with an assortment of options provide a product that meets the needs of your application.

Series	Description	Actuation	Plating	Options	Life	Operating Temperature
212	 1-1/8" Diameter Steel Construction Hill-and-Valley Detent Glass Thermoset Molded Wafer	Up to 12 Positions/Pole, Shorting or Non-Shorting	Silver-Plated Brass Contacts and Terminals	Adjustable Stop Terminal Styles, Custom Switching, IP 67 Panel Seal	25,000 Cycles Minimum	-20°C to +110°C
227	 1-1/8" Diameter Die Cast Construction Hill-and-Valley Detent Glass Thermoset Molded Wafer	Up to 12 Positions/Pole, Shorting or Non-Shorting	Silver-Plated Brass Contacts and Terminals	Terminal Styles, Custom Switching	25,000 Cycles Minimum	-20°C to +110°C

Tactile Switches



Typical Applications

Home appliance, control panels for security systems and HVAC, mobile devices and automotive

CTS's tactile switches combine reliability with superior tactile feedback in multiple sizes, operating forces, actuator heights and life cycles to meet the demands of your application. These tactile switches are used for


human interface applications in which the user applies force to the momentary push button switch for selection and control.

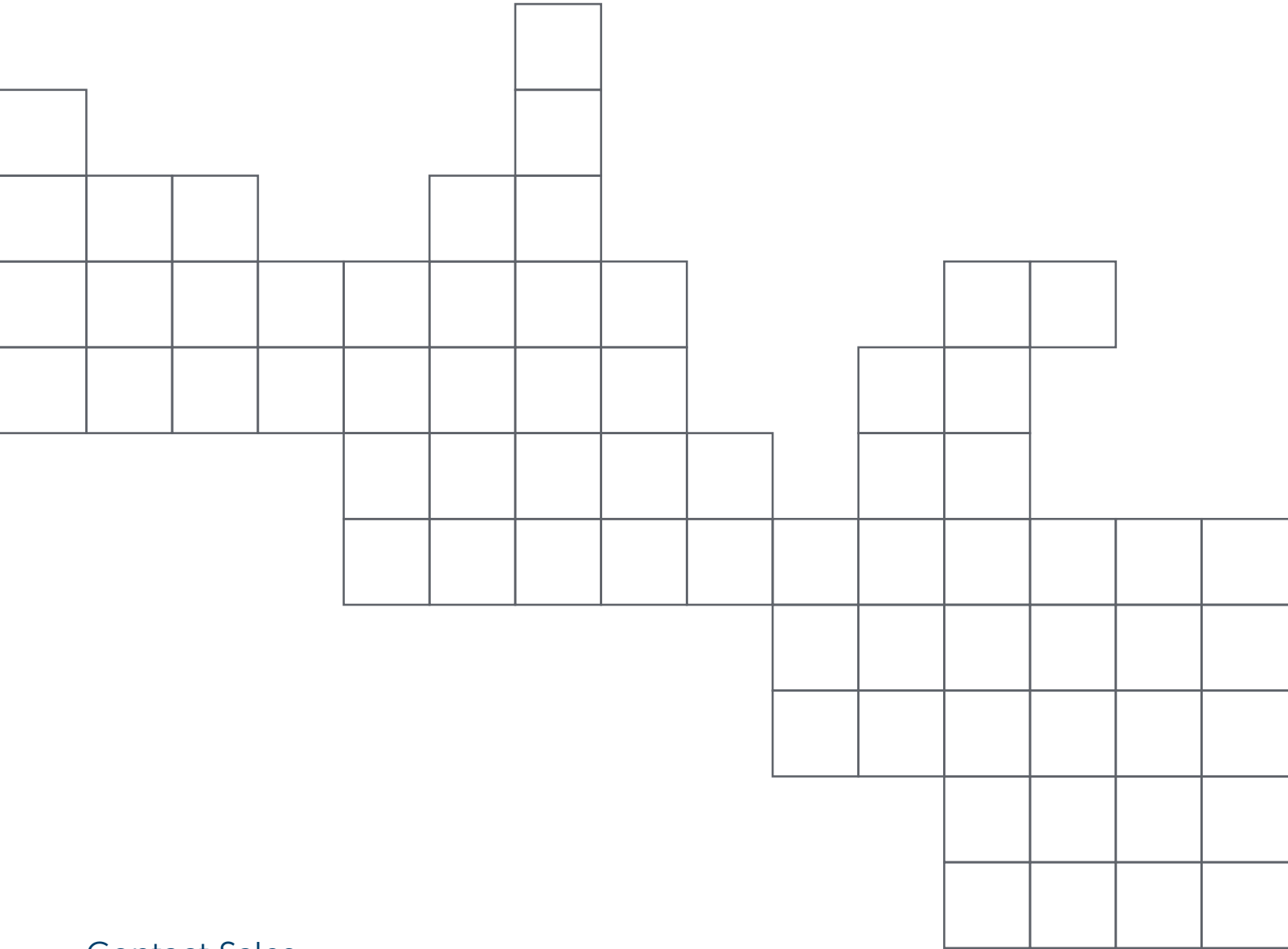
Series		Rating	Force	Options	Actuation Direction
222A 6.2x6.2 mm		12 VDC @ 50 mA 200,000 Cycles, 1 Million Cycles	100 gf 160 gf 260 gf	Actuator Height, Through-Hole and SMT	Vertical Side
222B 6x3.5 mm		12 VDC @ 50 mA 30,000 Cycles, 50,000 Cycles	160 gf 260 gf	Actuator Height, IP67, SMT Gullwing or J-Bend	Vertical
222C 6.2x6.2 mm		12 VDC @ 50 mA 500,000 Cycles, 1 Million Cycles	160 gf 260 gf	Actuator Height, SMT Gullwing or J-Bend	Vertical
222D 6.2x6.2 mm		12 VDC @ 50 mA 200,000 Cycles, 500,000 Cycles, 1 Million Cycles	160 gf 260 gf 360 gf	Actuator Height, SMT Gullwing or J-Bend	Vertical
222E 5.0x5.0 mm		12 VDC @ 50 mA 200,000 Cycles, 1 Million Cycles	160 gf 260 gf	Actuator Height, SMT Gullwing or J-Bend	Vertical
222G 6.0x3.8 mm		12 VDC @ 50 mA 100,000 Cycles	160 gf 260 gf	SMT Gullwing or J-Bend, Travel	Vertical
222H 6.2x2.55 mm		12 VDC @ 50 mA 500,000 Cycles, 1 Million Cycles	120 gf 160 gf 240 gf	Mounting Bracket	Side
222J (IP67) 6.2x6.2 mm		32 VDC @ 50 mA 32 VDC @ 10 mA 300,000 Cycles, 500,000 Cycles, 1 Million Cycles	160 gf 200 gf 350 gf	SMT Gullwing or J-Bend, Contact and Terminal Plating	Vertical
222K (IP67) 6.2x6.2 mm		32 VDC @ 50 mA 300,000 Cycles, 500,000 Cycles 5 Million Cycles	145 gf 200 gf 360 gf	SMT Gullwing or J-Bend	Vertical
222L (IP67) 6.2x6.2 mm		32 VDC @ 50 mA 300,000 Cycles,	225 gf	SMT Gullwing or J-Bend	Vertical

Tactile Switches (Continued)

Series		Rating	Force	Options	Actuation Direction
222M (IP57) 6.2x6.2 mm		32 VDC @ 50 mA 300,000 Cycles, 500,000 Cycles 5 Million Cycles	145 gf 200 gf 360 gf	SMT Gullwing or J-Bend	Vertical
222P (IP57) 6.2x6.2 mm		32 VDC @ 50 mA 32 VDC @ 10 mA 100,000 Cycles	200 gf	SMT Gullwing or J-Bend	Vertical
222S (IP57) 6.2x3.8 mm		12 VDC @ 50 mA 200,000 Cycles	200 gf 300 gf	Contact and Terminal Plating	Vertical
222U 6.1 x 6.1 mm		12 VDC @ 50 mA 50,000 cycles	260 gf	N/A	Vertical
222V 6.0x6.0 mm		12 VDC @ 50 mA 60,000 Cycles 80,000 Cycles 100,000 Cycles	100 gf 160 gf 260 gf	N/A	Vertical
222W 6.0x6.0 mm		16 VDC @ 50 mA 100,000 cycles	160 gf 230 gf	N/A	Vertical
223A 4.7x3.5 mm		12 VDC @ 50 mA 100,000 Cycles, 300,000 Cycles	160 gf 260 gf	SMT Gullwing or J-Bend	Vertical
223B 4.2x4.5 mm		12 VDC @ 50 mA 200,000 Cycles, 500,000 Cycles, 1 Million Cycles	100 gf 160 gf 260 gf	Actuator Height, SMT Gullwing Types	Vertical
223C 4.5x4.5 mm		12 VDC @ 50 mA 1 Million Cycles	160 gf	Actuator Height	Vertical
223D 5.6x4.0 mm		12 VDC @ 50 mA 50,000 Cycles	180 gf 220 gf 350 gf	SMT Gullwing Types, Boss	Vertical
223E 4.2x3.2 mm		16 VDC @ 50 mA 50,000 Cycles, 100,000 Cycles	160 gf 260 gf	N/A	Vertical
223G 4.8x2.2 mm		12 VDC @ 50 mA 200,000 Cycles	160 gf	Mounting Bracket	Side
223H 4.7x3.5 mm		12 VDC @ 50 mA 100,000 Cycles, 200,000 Cycles	160 gf 220 gf	SMT Gullwing or J-Bend, Boss, Ground Terminal	Side
223J (IP67) 4.2x2.8 mm		32 VDC @ 50 mA 150,000 Cycles, 200,000 Cycles	200 gf 300 gf	Ground Terminal	Vertical

Series		Rating	Force	Options	Actuation Direction
223L 5.5 x 3.1 mm		12 VDC @ 50 mA 100,000 cycles	200 gf	Contact and Terminal plating	Side
224A 12x12 mm		12 VDC @ 50 mA 300,000 Cycles, 500,000 Cycles	160 gf 260 gf	Through-Hole and SMT, Actuator Height, Boss	Vertical
225A 7.3x3.8 mm		12 VDC @ 50 mA 50,000 Cycles, 100,000 Cycles	180 gf	SMT J-Bend Types, Travel, Actuator Height	Side
225F 7.2 x 7.2 mm		12 VDC @ 50 mA 100,000 cycles	110 gf	N/A	Vertical
226A 3.0x2.6 mm		12 VDC @ 50 mA 200,000 Cycles, 500,000 Cycles	160 gf 400 gf	N/A	Vertical
226B 3.5x2.9 mm		12 VDC @ 50 mA 100,000 Cycles, 200,000 Cycles, 1 Million Cycles	100 gf 160 gf 200 gf 350 gf 500 gf	Ground Terminal	Vertical
226E 3.5x2.9 mm		12 VDC @ 50 mA 100,000 Cycles	160 gf 220 gf	SMT Gullwing Types, Boss, Ground Terminal	Side
226H 3.9x2.9 mm		12 VDC @ 50 mA 100,000 Cycles, 200,000 Cycles	160 gf 250 gf	SMT J-Bend Type, Boss, Actuator Length	Vertical
228A 6.8 x 7.2 mm 7.2 x 7.0 mm		12 VDC @ 50 mA 100,000 cycles	160 gf	SMT Gullwing or Through-hole, Single or Bi-LED	Vertical Side
228B 6.0 x 6.6 mm		12 VDC @ 50 mA 100,000 cycles	160 gf	SMT Gullwing or Through-hole, Single or Bi-LED	Vertical
228C 7.2x6.8 mm		12 VDC @ 50 mA 100,000 Cycles	160 gf	SMT Gullwing or Through-hole, Single, Bi or Tri-LED	Vertical
228D 6.8 x 5.0 mm		12 VDC @ 50 mA 100,000 cycles	220 gf	SMT Gullwing or Through-hole, Single or Bi-LED	Vertical Side
228E 6.8 x 7.2 mm 7.4 x 7.9 mm		12 VDC @ 50 mA 100,000 cycles	200 gf	SMT Gullwing or SMT J-Bend or Through-hole, Single, Bi or Tri-LED	Vertical Side
228F 6.2 x 7.0 mm 7.4 x 8.5 mm		12 VDC @ 50 mA 228FMV/FDS: 100,000 cycles 228FDV: 500,000 cycles	160 gf	12 VDC @ 50 mA 228FMV/FDS: 100,000 cycles 228FDV: 500,000 cycles	vertical Side

Series	Image	Rating	Force	Options	Actuation Direction
228G 5.0 x 6.0 mm		12 VDC @ 50 mA 100,000 cycles	160 gf	SMT Gullwing Single LED	Vertical
228H 5.2 x 8.0 mm 8.0 x 5.6 mm		12 VDC @ 50 mA 100,000 cycles	160 gf	SMT Gullwing or Through-hole, Single or Bi-LED	Vertical Side



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