

# General Specifications

## Electrical Capacity (Resistive Load)

**Logic Level:** 0.4VA maximum @ 28V AC/DC maximum  
(Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)  
Note: Find additional explanation of operating range in Supplement section.

## Other Ratings

**Contact Resistance:** 80 milliohms maximum  
**Insulation Resistance:** 500 megohms minimum @ 500V DC  
**Dielectric Strength:** 500V AC minimum for 1 minute minimum  
**Mechanical Life:** 100,000 operations minimum for On-None-On & On-Off-On  
50,000 operations minimum for other circuits  
**Electrical Life:** 100,000 operations minimum for On-None-On & On-Off-On  
50,000 operations minimum for other circuits  
**Nominal Operating Force:** 0.93N for momentary & 1.20N for maintained  
**Angle of Throw:** 28°

## Materials & Finishes

**Actuator:** Glass fiber reinforced polyamide  
**Case:** Glass fiber reinforced polyamide  
**Sealing Rings:** Nitrile butadiene rubber  
**Movable Contacts:** Phosphor bronze with gold plating  
**Stationary Contacts:** Phosphor bronze with gold plating  
**Base:** Glass fiber reinforced polyamide  
**Terminals:** Phosphor bronze with gold plating  
**Support Bracket:** Phosphor bronze with tin plating

## Environmental Data

**Operating Temperature Range:** -25°C through +85°C (-13°F through +185°F)  
**Humidity:** 90 ~ 95% humidity for 96 hours @ 40°C (104°F)  
**Vibration:** 10 ~ 55Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range & returning in 1 minute; 3 right angled directions for 2 hours  
**Shock:** 50G (490m/s<sup>2</sup>) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)

## PCB Processing

**Soldering:** Wave Soldering recommended: See Profile A in Supplement section.  
Manual Soldering: See Profile A in Supplement section.  
**Cleaning:** Automated cleaning. See Cleaning specifications in Supplement section.

## Standards & Certifications

The G Series toggles have not been tested for UL recognition or CSA certification. These switches are designed for use in a low-voltage, low-current, logic-level circuit. When used as intended in a logic-level circuit, the results do not produce hazardous energy.

# Distinctive Characteristics

Ultra-miniature size allows high density mounting, and extremely light weight of 0.25 gram makes these switches ideal for handheld equipment.

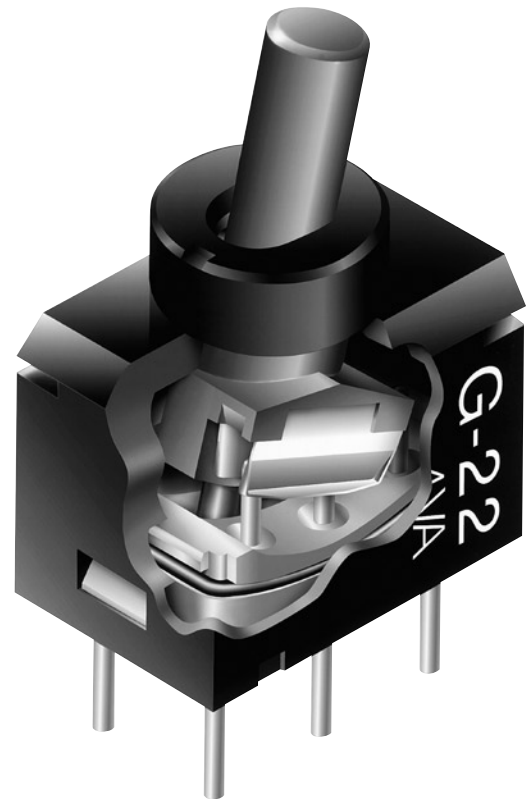
Totally sealed body construction prevents contact contamination and allows time- and money-saving automated soldering and cleaning.

Molded-in, epoxy sealed terminals lock out flux, solvents, and other contaminants.

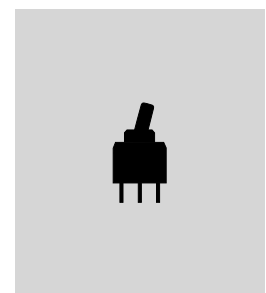
Award-winning STC contact mechanism with benefits unavailable in conventional mechanisms: smooth, positive detent actuation, increased contact stability, and unparalleled logic-level reliability. (Additional STC details in Terms & Acronyms; see Supplement section.)

.100" x .100" (2.54mm x 2.54mm) terminal spacing conforms to standard PC board grid spacing. Round terminals facilitate easier through-hole mounting on PC boards.

Matching indicators available.



Actual Size



- A Toggles
- Rockers
- Pushbuttons
- Illuminated PB
- Programmable
- Keylocks
- Rotaries
- Slides
- Tactiles
- Tilt
- Touch
- Indicators
- Accessories
- Supplement

### TYPICAL SWITCH ORDERING EXAMPLE

**G**      **1**      **3**      **A**      **H**

Poles		Circuits			Actuator		PC Terminals		
1	SPDT	2	ON	NONE	ON	A	.150" (3.8mm) Column Toggle	P	Straight
2	DPDT	3	ON	OFF	ON			H	Right Angle
		5	ON	NONE	(ON)			V	Vertical
		8	(ON)	OFF	(ON)				
		9	ON	OFF	(ON)				
			( ) = Momentary						

### DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

#### G13AH



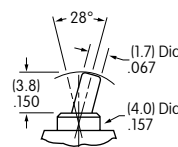
### POLES & CIRCUITS

Pole	Model	Toggle Position ( ) = Momentary			Connected Terminals			Throw & Schematics
		Up	Center	Down	Up	Center	Down	
SP	G12 G13 G15 G18 G19	ON ON ON (ON) ON	NONE OFF NONE OFF OFF	ON ON (ON) (ON) (ON)	5-6	OPEN	5-4	SPDT 
DP	G22 G23 G25 G28 G29	ON ON ON (ON) ON	NONE OFF NONE OFF OFF	ON ON (ON) (ON) (ON)	5-6 2-3	OPEN	5-4 2-1	DPDT 

Note: Terminal numbers are not actually on the switch.

### ACTUATOR

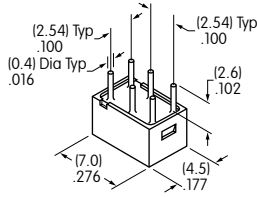
**A** .150" (3.8mm) Column Toggle



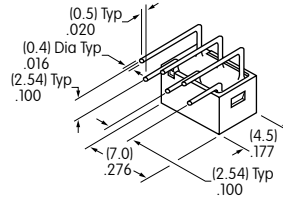
## PC TERMINALS

A  
Toggles

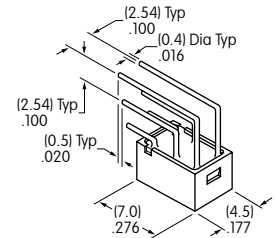
**P** Straight



**H** Right Angle



**V** Vertical

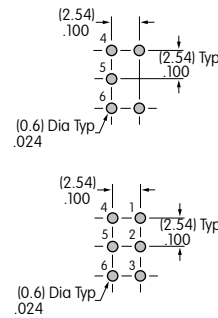
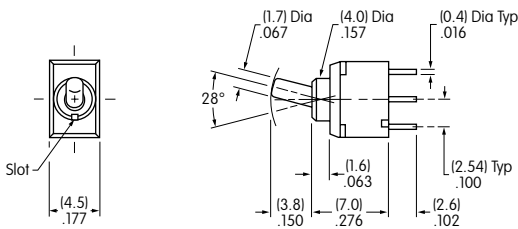


Rockers

Pushbuttons

## TYPICAL SWITCH DIMENSIONS

### Single & Double Pole



### Straight PC



**G19AP**

Illuminated PB

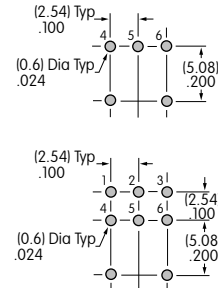
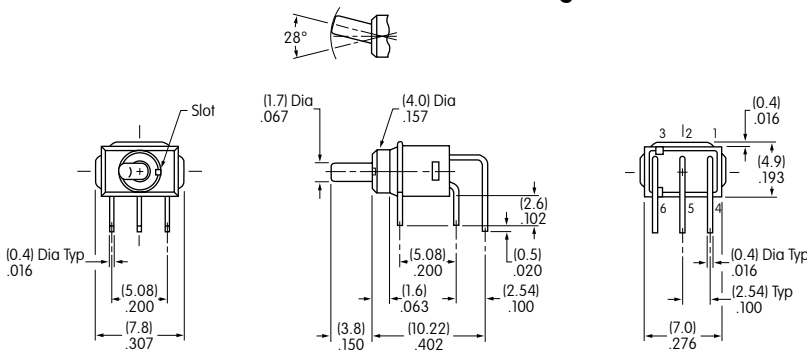
Programmable

Keylocks

Rotaries

On single pole models, locations 1 & 3 are for support pins.

### Single & Double Pole



### Right Angle PC



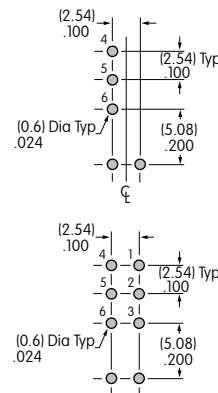
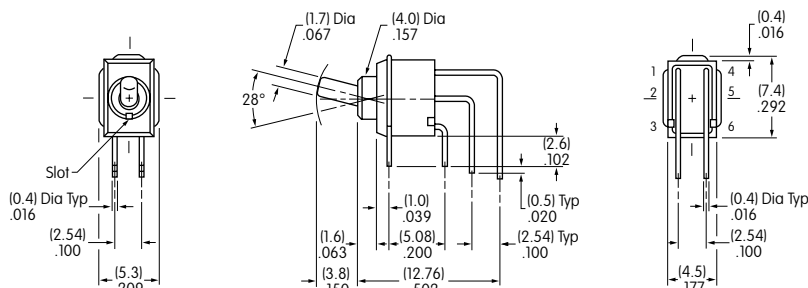
**G19AH**

Slides

Tactiles

Tilt

### Single & Double Pole



### Vertical PC



**G22AV**

Touch

Indicators

Accessories

Supplement