



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# 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  
**Electrical Life:** 100,000 operations minimum  
10,000 operations minimum @ 0.1A @ 28V AC/DC  
**Nominal Operating Force:** 1.30N  
**Angle of Throw:** 28°

## Materials & Finishes

**Actuator:** 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  
**Power Terminals:** Phosphor bronze with gold plating  
**Lamp Terminals:** Phosphor bronze with gold plating

## Environmental Data

**Operating Temperature Range:** -25°C through +55°C (-13°F through +131°F)  
**Humidity:** 90 ~ 95% humidity for 240 hours @ 40°C (104°F)  
**Vibration:** 10 ~ 500Hz 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

Fully illuminated toggle for highly visible status indication with LED in red, green, or amber for single color and red/green for bicolor.

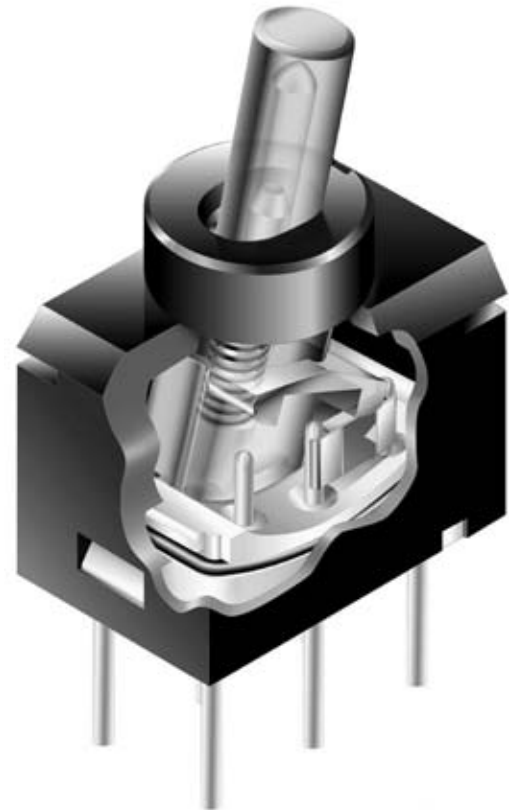
Ultra-miniature size allows high density mounting, and extremely light weight makes these switches ideal for handheld equipment.

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

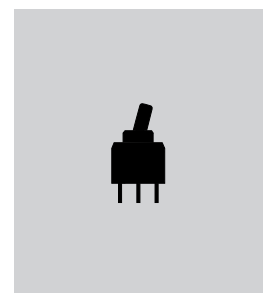
Molded-in, epoxy sealed terminals lock out flux, solvents, and other contaminants.

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.



Actual Size





### TYPICAL SWITCH ORDERING EXAMPLE

<b>G</b>	<b>1</b>	<b>2</b>	<b>J</b>	<b>H</b>	<b>C</b>	
<b>Pole</b>	<b>Circuits</b>			<b>Actuator</b>	<b>PC Terminals</b>	<b>LEDS</b>
1   SPDT	2   ON   NONE   ON	Clear			P   Straight	<b>Single Color</b>
	Combines with single color or bicolor LEDs				H   Right Angle	C   Red
	3   ON   OFF   ON				V   Vertical	D   Amber
	Combines with bicolor LED only					F   Green
						ON-NONE-ON only
						<b>Bicolor</b>
						CF   Red/Green
						ON-NONE-ON & ON-OFF-ON

**DESCRIPTION FOR TYPICAL ORDERING EXAMPLE**  
**G12JHC**

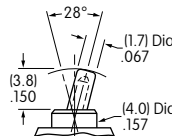
SPDT — ON-NONE-ON Circuit — Clear Toggle, Red LED — Right Angle PC Terminals

### POLES & CIRCUITS

Pole Throw	Model	Toggle Position			Connected Terminals			Schematics
		Up	Center	Down	Up	Center	Down	
SPDT	G12 G13	ON ON	NONE OFF	ON ON	2-3 2-3	NONE OPEN	2-1 2-1	<p>Note: Terminal numbers are not actually on the switch. LED circuit is isolated and requires an external power source.</p> <p>Single Color</p> <p>Bicolor</p>

### ACTUATOR

**J** Clear Toggle



### LED COLORS & SPECIFICATIONS

	Colors	Single Color			Bicolor
		<b>C</b> Red	<b>D</b> Amber	<b>F</b> Green	<b>CF</b> Red/Green
LEDs are an integral part of the switch and not available separately. The electrical specifications shown are determined at a basic temperature of 25°C.					
Forward Peak Current	$I_{FM}$	30mA	30mA	25mA	30mA/25mA
Typical Forward Current	$I_F$	20mA	20mA	20mA	20mA/20mA
Forward Voltage	$V_F$	2.0V	2.0V	2.1V	2.0V/2.1V
Reverse Peak Voltage	$V_{RM}$	5V	5V	5V	5V/5V
Current Reduction Rate Above 25°C	$\Delta I_F$	0 - No current Reduction Rate within Ambient Temperature Range			
Ambient Temperature Range		-25° ~ +55°C			

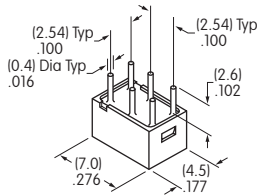
If the source voltage exceeds the rated voltage, a ballast resistor is required.

The resistor value can be calculated by using the formula in the Supplement; see Supplement Index.

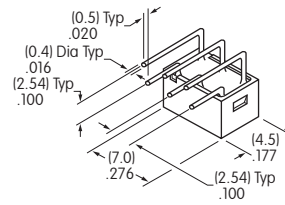
## PC TERMINALS

A  
Toggles

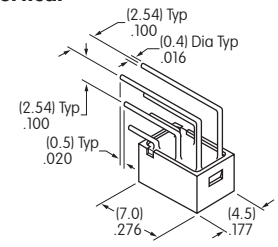
**P** Straight



**H** Right Angle



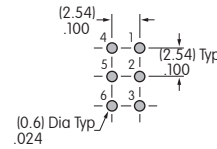
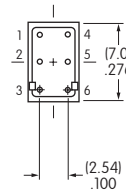
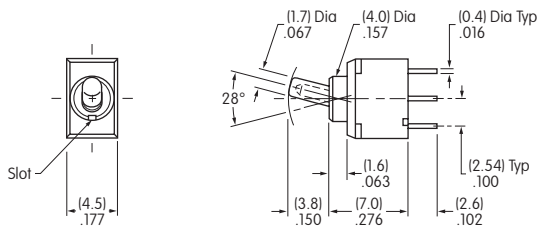
**V** Vertical



Rockers

Pushbuttons

## TYPICAL SWITCH DIMENSIONS



**Straight PC**



5 & 6 are LED terminals; 4 is a support pin on single color models & an LED terminal on bicolor models.

**G12JPC**

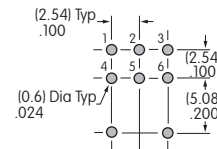
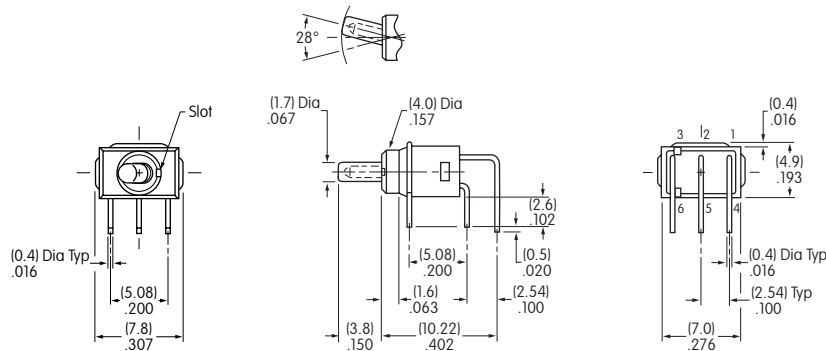
Illuminated PB

Programmable

Keylocks

Rotaries

**Right Angle PC**



5 & 6 are LED terminals; 4 is a support pin on single color models & an LED terminal on bicolor models.

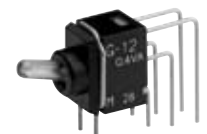
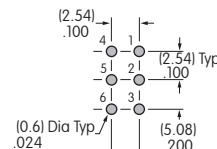
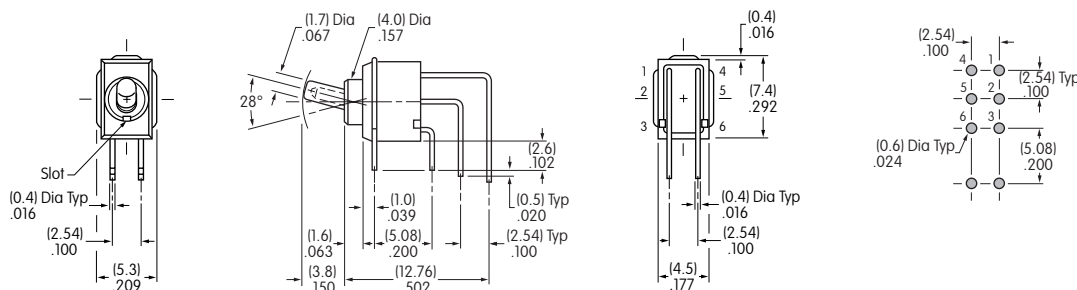
**G12JHD**

Slides

Tactiles

Tilt

**Vertical PC**



5 & 6 are LED terminals; 4 is a support pin on single color models & an LED terminal on bicolor models.

**G12JVCF**

Touch

Indicators

Accessories

Supplement