



## TYPICAL SWITCH ORDERING EXAMPLE

**G3T** **1** **2** **A** **H** —

POLES	
1	SPDT
2	DPDT

ACTUATOR	
A	3.8mm Column Toggle


MOUNTING	
P	Upright
B	Upright with Bracket
H	Right Angle

PACKAGING	
R	Tape-Reel for Right Angle Only 500 Pieces/Reel
S	Stick-Tube for Upright Mount 50 Pieces/Stick
No Code	Partitioned Tray for Upright & Right Angle Any Quantity
Packaging details on pages A62 & A63.	

CIRCUITS			
2	ON	NONE	ON
3	ON	OFF	ON
5	ON	NONE	(ON)
8	(ON)	OFF	(ON)
9	ON	OFF	(ON)
( ) = Momentary			

**DESCRIPTION FOR TYPICAL ORDERING EXAMPLE**  
**G3T12AH**

SPDT ON-NONE-ON Circuit

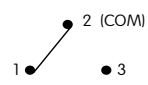
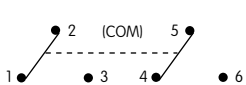


3.8mm Column Toggle

Surface Mount Right Angle Terminals

■ General Specifications ■ Dimensions

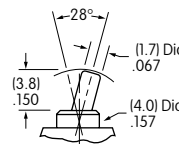
## POLES & CIRCUITS

Pole	Model	Toggle Position ( ) = Momentary			Connected Terminals			Throw & Schematics
		Up	Center	Down	Up	Center	Down	
SP	G3T12 G3T13 G3T15 G3T18 G3T19	ON	NONE	ON	2-3	OPEN	2-1	SPDT 
DP	G3T22 G3T23 G3T25 G3T28 G3T29	ON	NONE	ON	2-3 5-6	OPEN	2-1 5-4	DPDT 

Note: Terminal numbers are not actually on the switch.

## ACTUATOR

**A** 3.8mm Column Toggle





## GENERAL SPECIFICATIONS

### Electrical Capacity (Resistive Load)

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

Note: See [Supplement Index](#) to find explanation of operating range.

### Other Ratings

**Contact Resistance:** 80 milliohms maximum  
**Insulation Resistance:** 500 megohms minimum @ 500V DC  
**Dielectric Strength:** 500V AC minimum  
**Mechanical Life:** 50,000 operations minimum  
**Electrical Life:** 50,000 operations minimum  
**Nominal Operating Force:** Toggles: 95 grams for momentary & 122 grams for maintained  
Pushbuttons: 183 grams  
**Toggle Angle of Throw:** 28°  
**Pushbutton Travel:** Pretravel 0.6mm (.024") Overtravel 0.5mm (.019") Total 1.1mm (.043")

### Materials & Finishes

**Actuator for Toggles:** Glass fiber reinforced polyamide  
**Actuator for Pushbuttons:** Polyacetal  
**Case:** Glass fiber reinforced polyamide  
**Sealing Rings:** Nitrile butadiene rubber  
**Movable Contacts:** Phosphor bronze with gold plating over nickel  
**Stationary Contacts:** Phosphor bronze with gold plating over nickel  
**Base:** Glass fiber reinforced polyamide  
**Terminals:** Phosphor bronze with gold plating over nickel

### Environmental Data

**Operating Temp Range:** -30°C through +85°C (-22°F through +185°F)  
**Humidity:** 90 ~ 95% humidity for 96 hours @ 40°C (104°F)  
**Vibration:** 10 ~ 500Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range and returning in 1 minute; 3 right angled directions for 2 hours  
**Shock:** 50g acceleration (tested in 6 right angled directions, with 5 shocks in each direction)

### Installation

**Mounting:** It is recommended that the body of models for upright mounting without bracket be fastened to a panel or similar support for protection of solder joints from mechanical stress.

**Soldering Time & Temperature:** Vapor Phase Reflow Soldering: 60 seconds @ 150°C + 60 seconds @ 215°C (120 seconds total). Switches should be left in unheated state at least 10 minutes after soldering before they are washed.  
Infrared Reflow Soldering: Preheat for 60 seconds @ 150°C (heat rise 1-5°C/second)  
Soldering for 10 seconds @ 220°C  
Manual Soldering: 3 seconds @ 350°C or 5 seconds @ 260°C  
Eutectic solder is recommended.

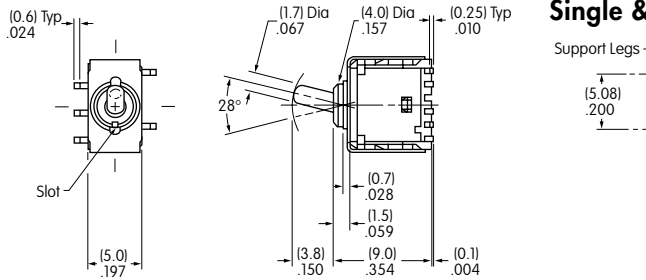
**Process Seal:** See [Supplement Index](#) for specific processing data.



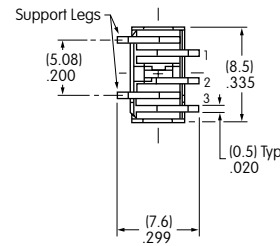
# Series G

Washable Ultra-Miniature Switches

## TYPICAL SWITCH DIMENSIONS

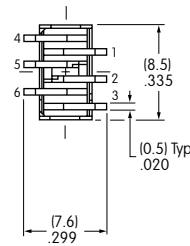


### Single & Double Pole

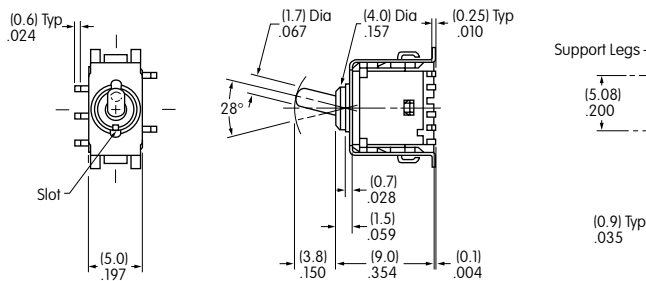


### Upright Mounting

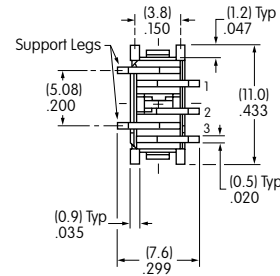
P



G3T12AP

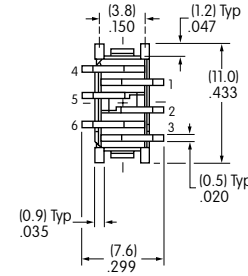


### Single & Double Pole

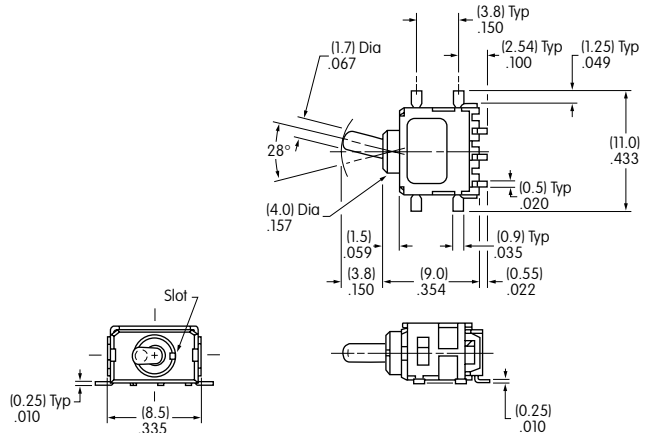


### Upright Mounting with Bracket

B



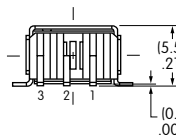
G3T22AB



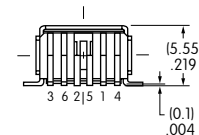
### Right Angle Mounting

H

### Single Pole



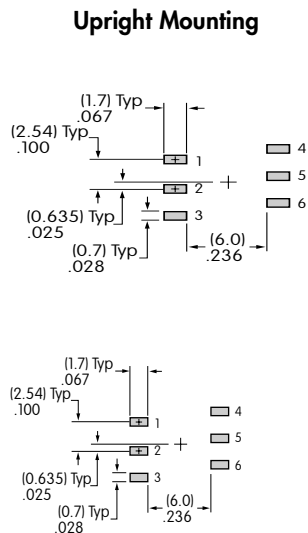
### Double Pole



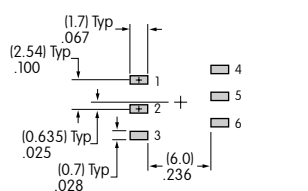
G3T12AH

### Pad Layouts for Surface Mount Terminals

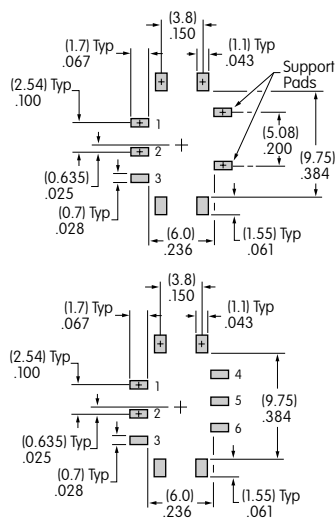
#### Single Pole Double Throw



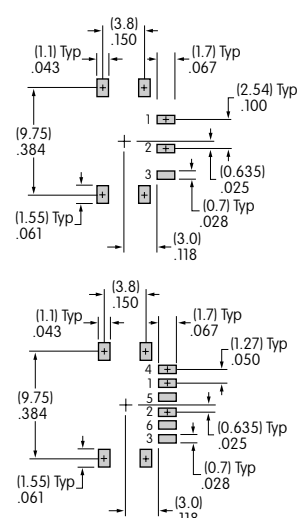
#### Double Pole Double Throw



#### Upright Mounting with Bracket



#### Right Angle Mounting





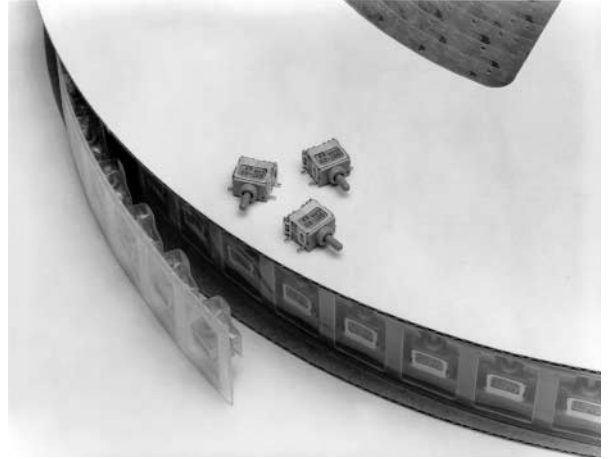
## PACKAGING FOR SURFACE MOUNT DEVICES

### Tape-Reel Packaging

**R** **Tape-Reel  
for Right Angle Only 500 Pieces/Reel**

Switches must be ordered in 500-piece increments when tape-reel packaging is selected.

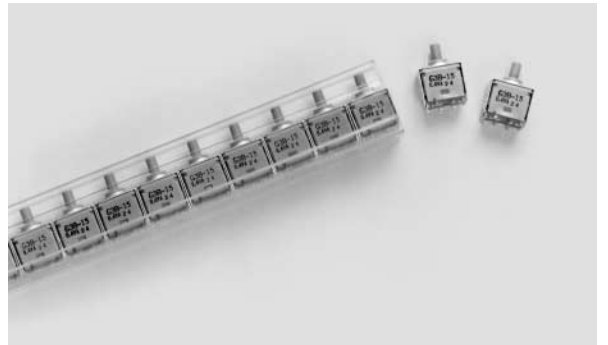
This packaging meets EIA-481-2 Standard for "16mm and 24mm Embossed Carrier Taping of Surface Mount Components for Automatic Handling."



### Stick-Tube Packaging

**S** **Stick-Tube  
for Upright Mount 50 Pieces/Stick**

Switches must be ordered in 50-piece increments when stick-tube packaging is selected.



### Partitioned Tray

**No  
Code** **Partitioned Tray  
for Upright & Right Angle  
Any Quantity**

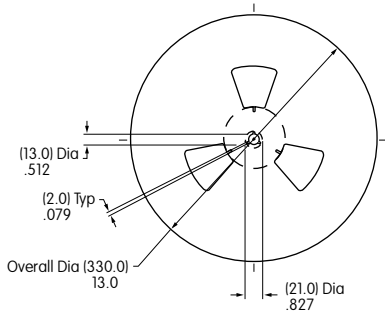
If the G3 upright models are ordered in less than 50-piece increments or the right angled models in less than 500-piece increments, the switches are packaged in a partitioned tray. No code is required.



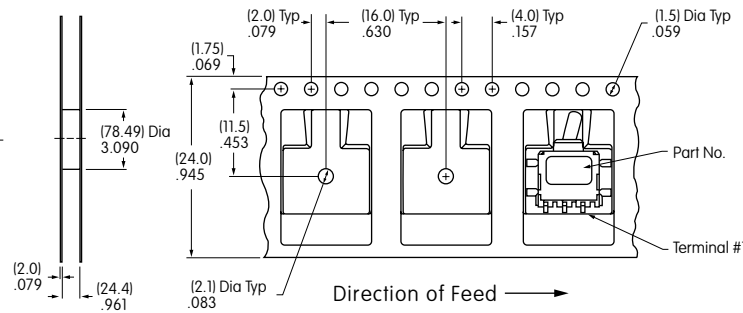
## PACKAGING FOR SURFACE MOUNT DEVICES (CONTINUED)

### Tape Reel Packaging for G3T Toggle Switches (Right Angle Mount)

Each tape-reel of 550 pockets contains 500 switches.  
 Minimum Leader Length: 200mm (7.87") Minimum Trailer Length: 50mm (1.97")



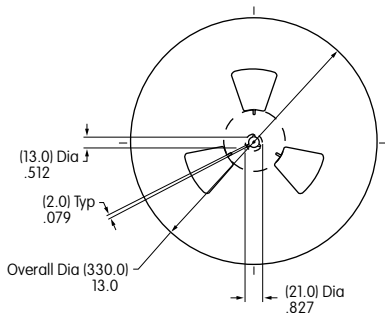
Reel Dimensions



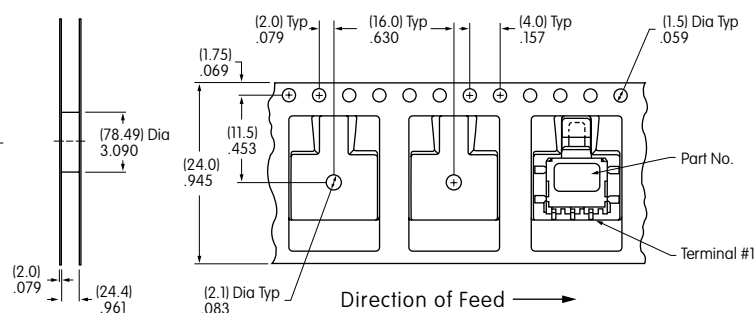
Tape Dimensions

### Tape Reel Packaging for G3B Pushbutton Switches (Right Angle Mount)

Each tape-reel of 550 pockets contains 500 switches.  
 Minimum Leader Length: 200mm (7.87") Minimum Trailer Length: 50mm (1.97")



Reel Dimensions



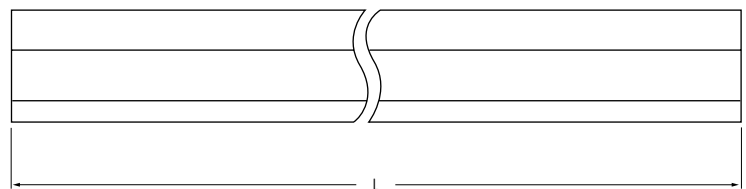
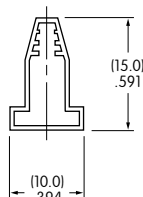
Tape Dimensions

### Stick-tube Packaging for G3T Toggle & G3B Pushbutton Switches (Upright Mount)

Each stick-tube contains 50 switches.

Length

- G3T Upright (code P):  
450mm (17.72")
- G3T Upright with Bracket (code B):  
520mm (20.47")
- G3B Upright (code P):  
450mm (17.72")
- G3B Upright with Bracket (code B):  
525mm (20.67")



Stick-tube Dimensions