

**SPECIFICATIONS**

Electrical Ratings	125mA @ 50VDC / 125VAC
Electrical Life	500,000 cycles
Mechanical Life	1,000,000 cycles
Contact Resistance	≤ 50 mΩ max initial
Dielectric Strength	1,000Vrms min
Actuation Force	300 +/- 100gF
Travel	1.5 +/- .25mm
Insulation Resistance	≥ 1000MΩ min
Internal / External Panel Sealing	IP 67
Operating Temperature	-30°C (-40 without LED) to 85°C
Storage Temperature	-30°C (-40 without LED) to 85°C



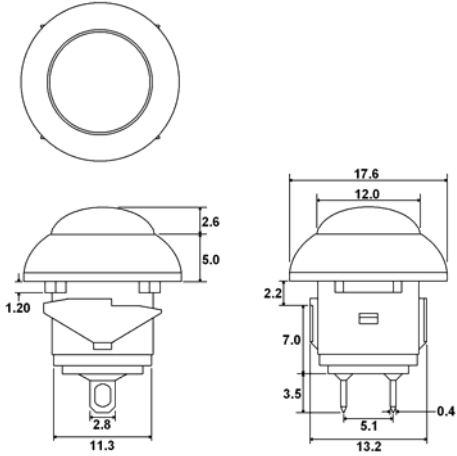
**MATERIALS ←RoHS COMPLIANT**

Actuator	6/6 Nylon
Housing	6/6 Nylon
Base	DAP – Diallyl Phthalate
Contacts	Copper Alloy, Gold over Silver plated
Terminals	Copper Alloy, Gold over Silver plated

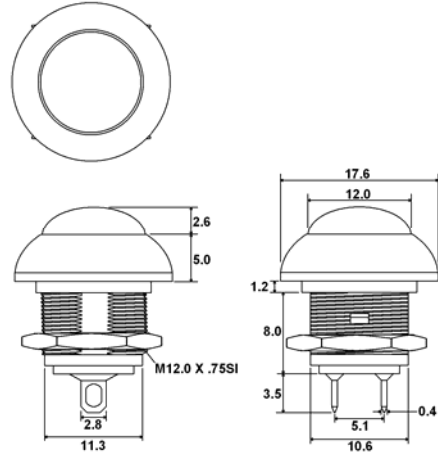
**ORDERING INFORMATION**

<b>Series:</b>	<b>ES</b>	<b>A</b>	<b>N</b>	<b>M</b>	<b>D</b>	<b>3</b>	<b>G</b>	<b>B</b>	<b>B</b>
<b>Contact Configuration:</b>	<p>A = SPST N.O B = SPST N.C. <b>**Not available with LED</b></p>								
<b>Switch Function:</b>	<p>N = Momentary</p>								
<b>Housing / Actuator Finish:</b>	<p>M = Matte finish</p>								
<b>Actuator Style:</b>	<p>D = round (no LED) F = round with flat (no LED) L = round with flat (with LED)</p>								
<b>Actuator Color:</b>	<p>1 = White 2 = Black 3 = Red 4 = Yellow 5 = Green 6 = Orange 7 = Blue 8 = Dark Gray</p>								
<b>Bushing:</b>	<p>G = 12 X 0.75 SI Threaded F = Snap in (0.8 ~ 1.8mm thk. panel)</p>								
<b>Terminals:</b>	<p>B = Solder Lugs</p>								
<b>LED Colors:</b>	<p>RY = Red/Yellow dual LED R = Red RG = Red/Green dual LED Y = Yellow RB = Red/Blue dual LED G = Green YG = Yellow/Green dual LED PG = Pure Green YB = Yellow/Blue dual LED B = Blue GB = Green/Blue dual LED W = White X = No LED</p> <p><b>**White &amp; Pure Green are only available as a single color LED</b></p>								

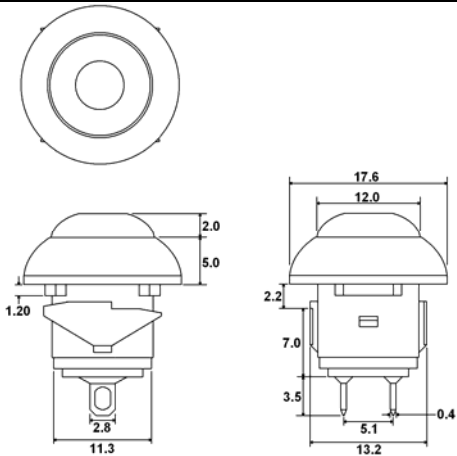
**ACTUATOR STYLES**



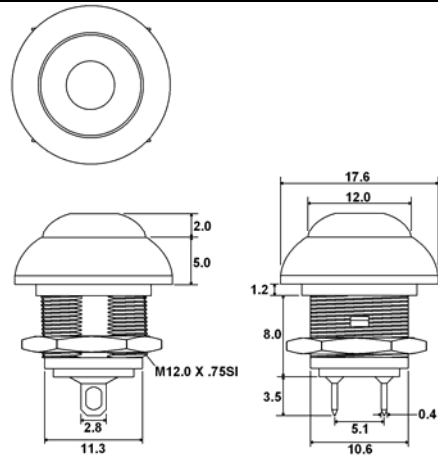
**Round Actuator with no LED – D Snap In Bushing – G**



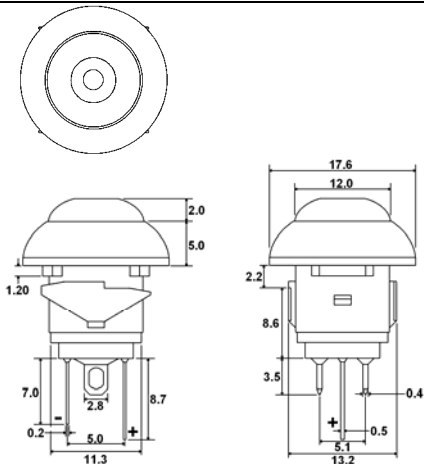
**Round Actuator with no LED – D Threaded Bushing – F**



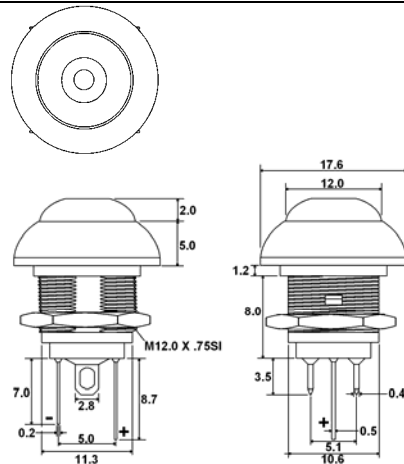
**Round Actuator with Flat, no LED – F Snap In Bushing – G**



**Round Actuator with Flat, no LED – F Threaded Bushing – F**

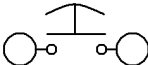
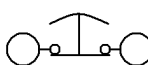
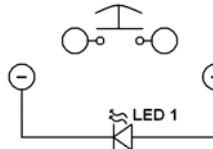
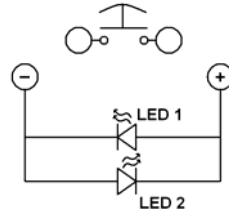


**Round Actuator with Flat, with LED – L Snap In Bushing – G**

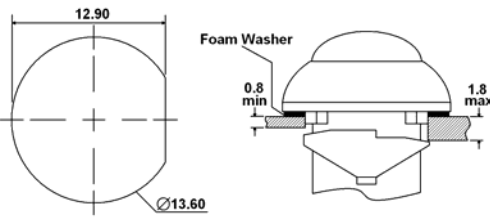
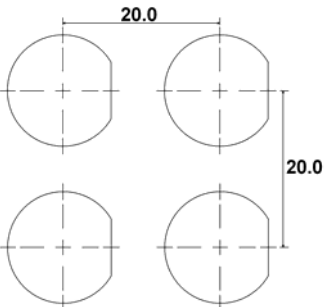
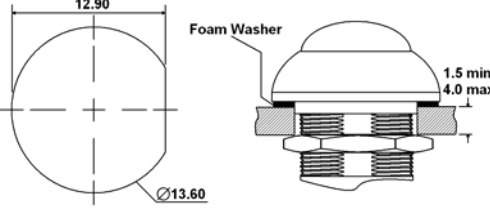
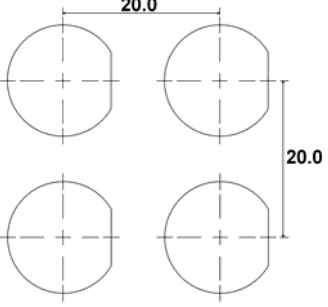


**Round Actuator with Flat, with LED – L Threaded Bushing – F**

**SCHEMATICS**

			
<b>SPST N.O.</b>	<b>SPST N.C.</b>	<b>SPST N.O. with LED</b>	<b>SPST N.O. with Dual Color LED</b>

**PANEL CUT OUTS**

 <p><b>Snap-in Bushing - G</b></p>	
 <p><b>Threaded Bushing - F</b></p>	

**LED CHARACTERISTICS**

LED Ratings		COLORS						Units
		R	Y	G	B	PG	W	
Reverse Voltage	$V_R$	5	5	5	5	5	5	V
Forward Current (avg)	$I_F$	30	30	30	30	30	30	mA
Forward Current (peak)	$I_{FS}$	100	100	100	100	100	100	mA
Reverse Current $V_R = 5V$	$I_R$	100	100	100	100	100	1	$\mu A$
Power Dissipation	$P_T$	80	100	100	120	120	120	mW
Operating & Storage Temperature	$T_A$	-25~ +80						$^{\circ}C$
Forward Voltage (typ.), $I_F = 20mA$	$V_F$	2.1	2.1	2.0	3.2	3.2	3.2	V
Forward Voltage (max.), $I_F = 20mA$	$V_F$	2.6	2.6	2.6	3.6	3.6	3.6	V
Wavelength at Peak Emmission, $I_F = 20mA$	$\lambda_P$	645	590	570	470	525	N/A	nm
Spectral Line Half-Width, $I_F = 20mA$	$\Delta\lambda$	22	15	30	30	30	N/A	nm
Luminous Intensity, $I_F = 20mA$	LI	100	200	100	150	300	250	mcd
Viewing Angle	$\Theta$	35	35	35	35	35	35	Deg