



RoHS Compliant

Illuminated Pushbutton

## Specifications

Electrical Ratings	125mA @ 50VDC 125mA @ 125VAC
Electrical Life	500,000 cycles
Mechanical Life	1,000,000 cycles
Contact Resistance	≤ 50mΩ initial
Dielectric Strength	1,000Vrms min

Actuation Force	300 ± 100gF
Actuation Travel	1.5 ± .25mm
Insulation Resistance	≥ 1000MΩ min
Sealing	IP67
Operating Temperature	-30°C (-40°C without LED) to 85°C
Storage Temperature	-30°C (-40°C without LED) to 85°C

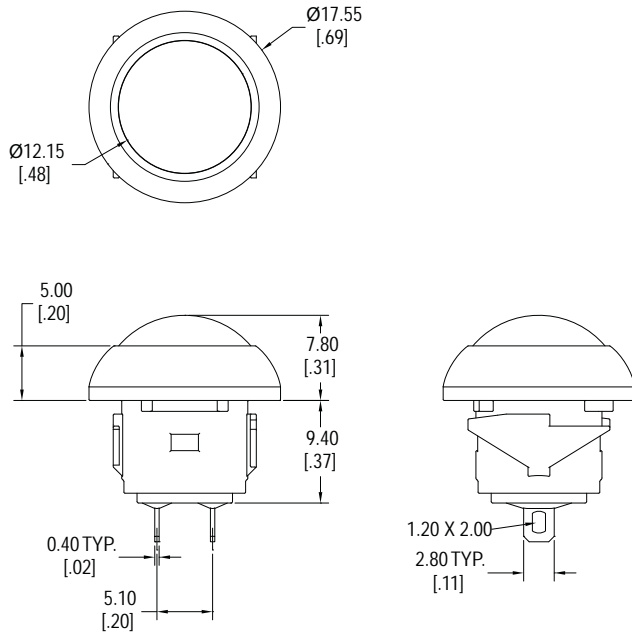
## Materials

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

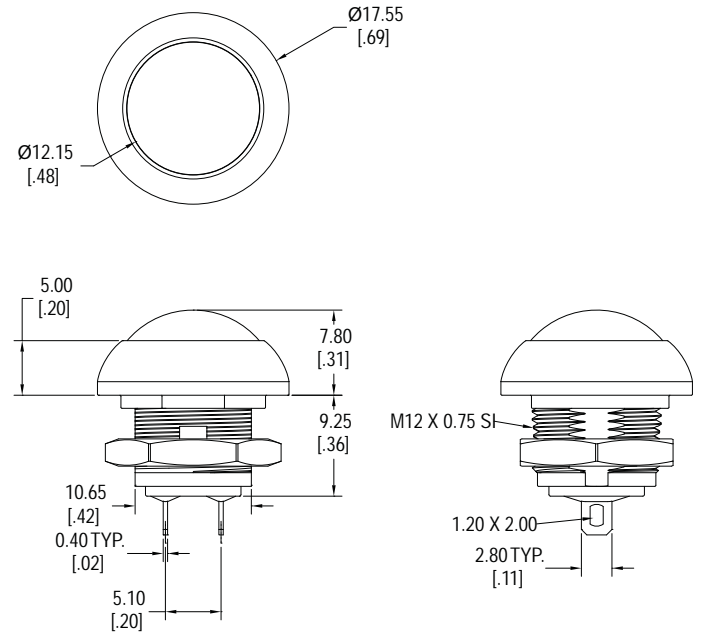
## Ordering Information

	ES	A	N	M	L	2	G	B	GB
1. Series ES									
2. Contact Configuration A = SPST N.O. B = SPST N.C. **Not available with Led									
3. Switch Function N = Momentary									
4. Housing / Actuator Finish M = Matte									
5. Actuator Style D = Round, no LED F = Round with flat, no LED L = Round with flat, LED									
6. Actuator Color 1 = White 2 = Black 3 = Red 4 = Yellow 5 = Green 6 = Orange 7 = Blue 8 = Dark Gray									
7. Bushing F = Snap-In (0.8 ~ 1.8mm thick panel) G = 12 x 0.75 SI Threaded									
8. Terminals B = Solder Lug									
9. LED Color X = no LED R = Red Y = Yellow G = Green PG = Pure Green B = Blue W = White RY = Red/Yellow dual LED RG = Red/Green dual LED RB = Red/Blue dual LED YG = Yellow Green dual LED YB = Yellow/Blue dual LED GB = Green/Blue dual LED									

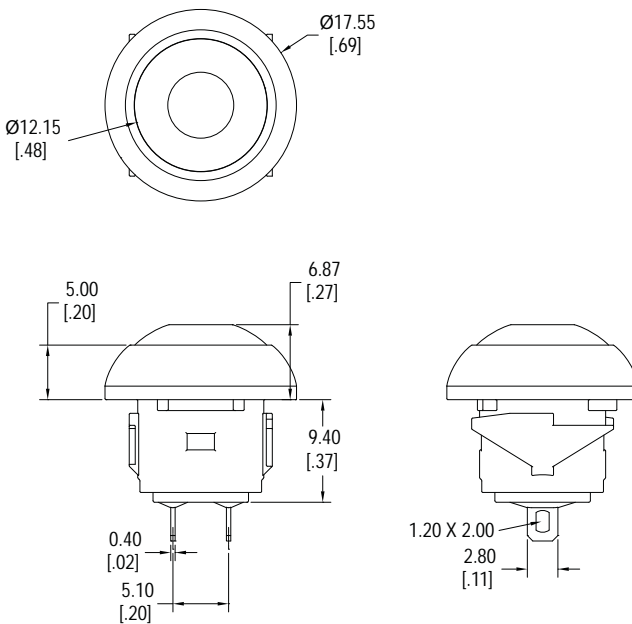
### Actuator Styles



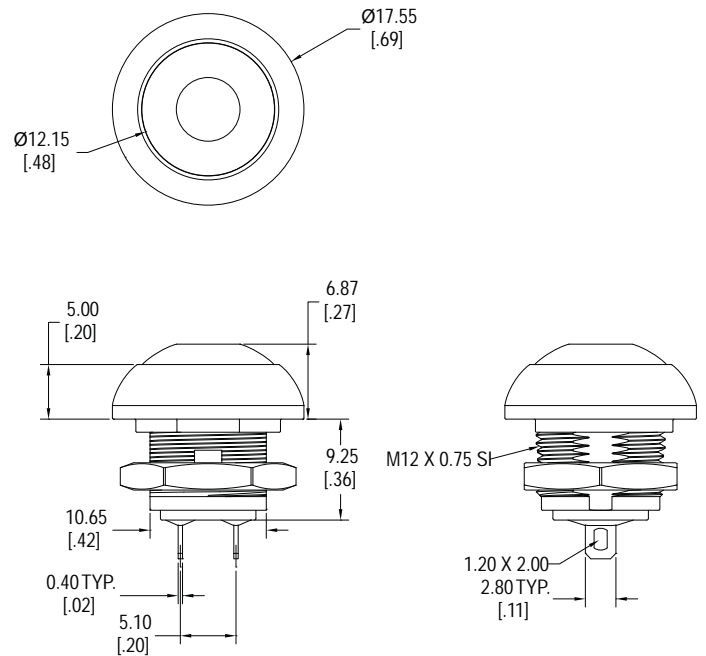
**D = Round Actuator with no LED**  
**F = Snap-In Bushing**



**D = Round Actuator with no LED**  
**G = Threaded Bushing**

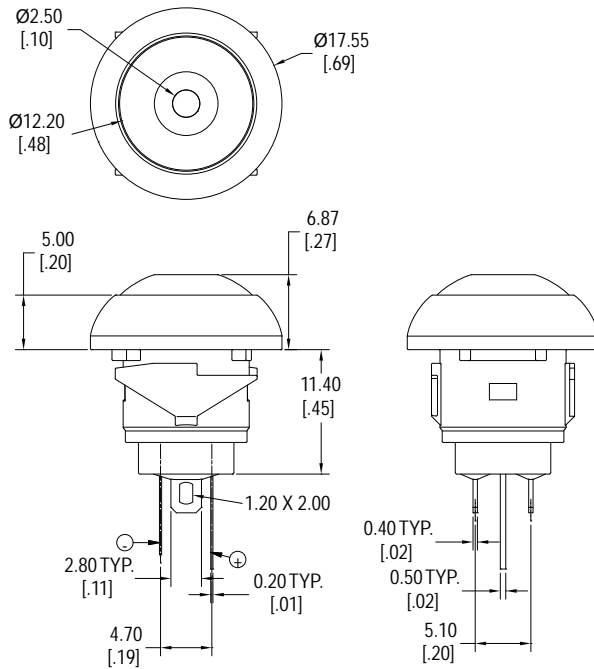


**F = Flat, Round Actuator with no LED**  
**F = Snap-In Bushing**

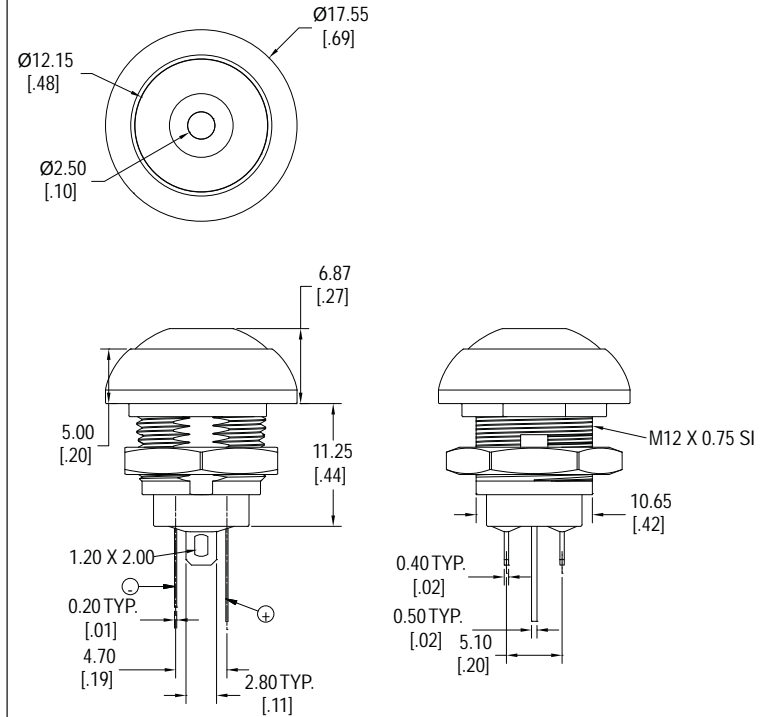


**F = Flat, Round Actuator with no LED**  
**G = Threaded Bushing**

## Actuator Styles

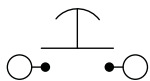


**L = Flat, Round Actuator with LED**  
**F = Snap-In Bushing**

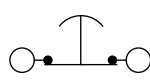


**L = Flat, Round Actuator with LED**  
**G = Threaded Bushing**

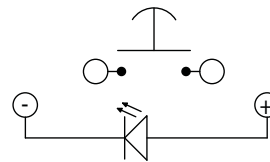
## Schematics



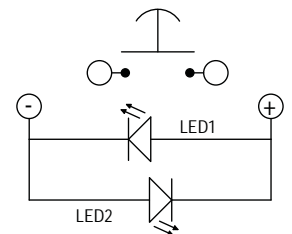
**SPST N.O.**



**SPST N.C.**



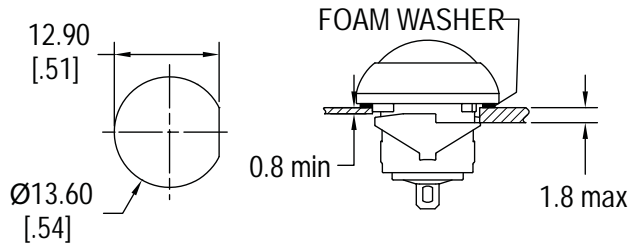
**SPST N.O. with LED**



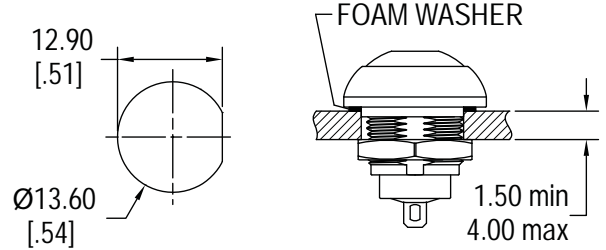
**SPST N.O. with Dual LED**

## Illuminated Pushbutton

### Panel Cut Out



**F = Snap-In Bushing**



**G = Threaded Bushing**

### LED Characteristics

LED Ratings		Color						
		R	Y	G	B	O	W	Units
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	$T_A$	-30 ~ +85						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