



Bi-Colored SMT Illuminated Tactile

## Specifications

Electrical Ratings	50mA @ 24VDC	Dielectric Strength	1000Vrms min
Electrical Life	500,000 cycles typical	Insulation Resistance	>100MΩ min
Contact Resistance	<50mΩ initial	Operating Temperature	-40°C to 85°C
Actuation Force	160 ± 100gF	Storage Temperature	-40°C to 85°C
Actuation Travel	0.5 ± .2mm		

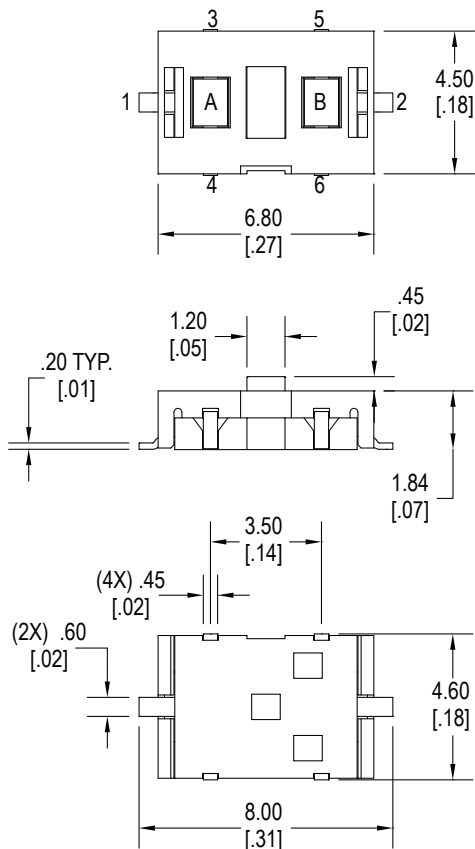
## Materials

Actuator	Liquid Crystal Polymer (LCP)
Housing	Nylon 9T
Base	Liquid Crystal Polymer (LCP)
Contacts	Phosphor Bronze, Silver Plated
Terminals	Brass, Silver Plated

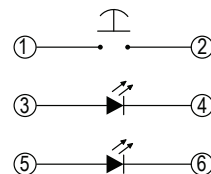
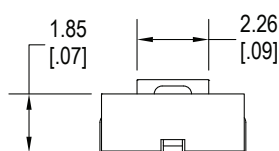
## Ordering Information

1. Series	NL	R	G		
NL					
2. First LED Color					
R = Red					
G = Green	W = White				
Y = Yellow	O = Orange				
B = Blue	PG = Pure Green				
3. Second LED Color					
R = Red					
G = Green	W = White				
Y = Yellow	O = Orange				
B = Blue	PG = Pure Green				
4. Cap Options					
A = Round					
B = Rectangle					
5. Cap Colors					
0 = Clear Semi-Transparent					
10 = White Opaque, for use with Laser Etching					
20 = Black Opaque, for use with Laser Etching					
MS = Misty Silver, for use with Laser Etching					
5. Laser Etching Styles					
Blank = No laser etching					
A	F				
B	G				
C	H				
D	I				
E	J				

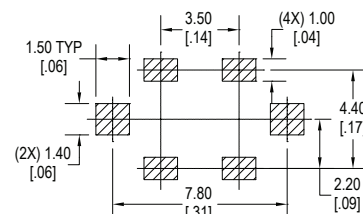
## Dimensions



**A = 1st LED Color**  
**B = 2nd LED Color**

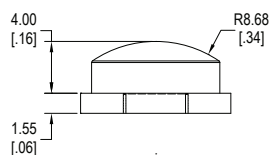
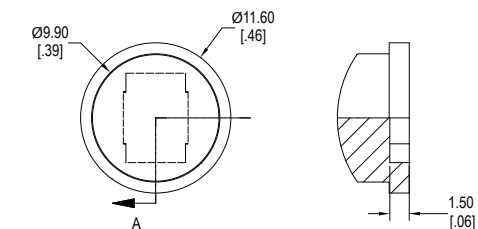


**Schematic**

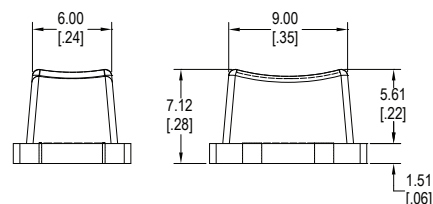
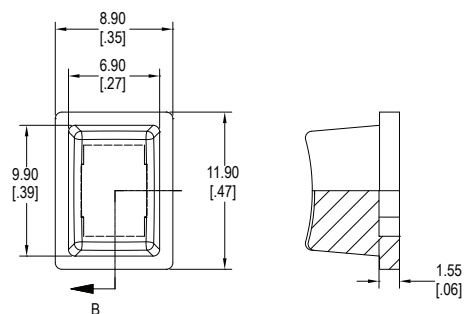


**PCB Layout**

## Caps

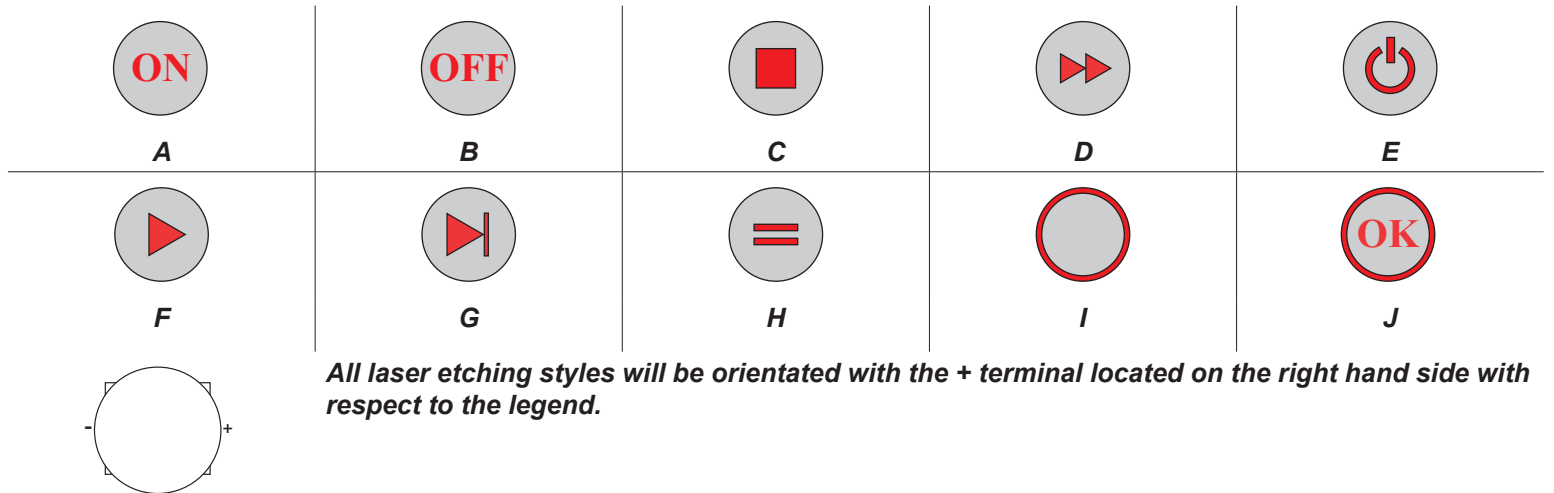


**A**



**B**

## Laser Etching Styles



## LED Characteristics

LED Ratings		Color							
		R	G	Y	B	W	O	PG	Units
Reverse Voltage	$V_R$	5	5	5	5	5	5	5	V
Forward Current (avg / peak)	$I_F$	30 / 125	30 / 125	30 / 125	30 / 125	30 / 125	30 / 125	30 / 195	mA
Reverse Current $V_R = 5V$	$I_R$	10	10	10	10	10	10	10	$\mu A$
Power Dissipation	$P_T$	69	81	81	81	120	120	75	mW
Forward Voltage (typ / max) $I_F = 20mA$	$V_F$	1.8 / 2.3	2.2 / 2.7	2.2 / 2.7	3.5 / 3.8	3.5 / 4.0	3.2 / 4.0	2.1 / 2.5	V
Wavelength at Peak Emmission, $I_F = 20mA$	$\lambda_P$	660	565	585	470	n/a	525	601	nm
Spectral Line Half-Width, $I_F = 20mA$	$\Delta\lambda$	24	30	35	25	40	35	29	nm
Luminous Intensity, $I_F = 20mA$	LI	4	6	6	110	180	150	320	mcd
Viewing Angle	$\Theta$	150	150	150	150	150	150	150	deg