

## SEALED, ILLUMINATED ROCKER SWITCHES

LOW COST, SNAP-IN ROCKER FOR WET &amp; DUSTY ENVIRONMENTS

The K series rockers are rugged, high performance sealed switches designed for use under severe conditions found in marine, appliance, heavy equipment and industrial control applications.

The K1 and K2 series are sealed to IP68S and IP69K and panel sealed with an optional panel gasket.

The K1 series is offered in single pole configuration and the K2 series is available in both single and double pole configurations. Both series offer illuminated models. Illumination can be independent or dependent of the switch position or a combination of both. A choice of red, green, clear or amber colored lenses are offered in illuminated models. Illumination options include incandescent, LED or neon light sources.

Mounting is simple and quick; snaps into panel from the front. The OTTO snap-in design supports a variety of panel thicknesses with just one cutout size.

A choice of models are offered to handle high power levels and logic level electronic switching applications.

Custom colors are available upon request. Value-added assemblies with wire leads are also available. Please contact our factory for assistance.

K1 Series  
Single PoleK2 Series  
Single & Double Pole

## Features:

- Sealed to IP68S and IP69K
- Fits industry standard panel openings for drop-in replacement of panel sealed & unsealed switches
- Snap-in feature accommodates a wide range of panel cutouts
- UV & solvent resistant
- Withstands extreme shock & vibration
- Custom legends available
- 2 & 3-position, momentary & maintained action
- Incandescent, LED & neon illumination with independent & dependent light source options
- UL recognized & CSA certified
- Ignition protected
- Optional one-piece connector
- Optional panel gasket available
- RoHS compliant



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### Standard Characteristics/Ratings:

#### ELECTRICAL RATINGS:

Load	Sea Level @ 28VDC	Sea Level @ 125/250 VAC, 60/400Hz	Cycles
Resistive	16A	5A	25,000
Resistive	10A	N/A	50,000
Inductive	7A	2A	25,000
DVV	1000Vrms except across light terminals		
Logic Level	10mA @ 5VDC, max D.C. logic level ratings (void if logic level load(s) exceeded at any time)		

**Electrical Life:** See Rating Chart

#### LIGHTING:

Light Source	Rating (see appendix for complete voltage/current ratings table)
Incandescent	(VDC) 6V, 12V, 24V
Neon	(VAC) 125V, 250V
LED	(VDC) 2V, 6V, 12V, 24V

**Mechanical Life:** 100,000 cycles

**Seal:** IP68S and IP69K

**Operating Temp Range:** -30°C to +85°C

#### MATERIALS:

<b>Case:</b>	Thermoplastic
<b>Button:</b>	Thermoplastic
<b>Base:</b>	Thermoplastic
<b>Terminals/Contact:</b>	Brass, silver alloy with silver plate, gold flash for logic level
<b>Terminal Hardware:</b>	Screws and lockwashers provided when applicable K1/K2 series recommended Quick Connect terminals: AMP 60253-2 for 12-16 AWG AMP 42100-2 for 14-18 AWG
<b>Mounting Hardware:</b>	None provided

# SEALED, ILLUMINATED ROCKER SWITCHES

LOW COST, SNAP-IN ROCKER FOR WET & DUSTY ENVIRONMENTS

## K1 PART NUMBER CODE

K1

X

X

X

Part Number Code Continued Below

X

### Terminal Style/ Switch Rating

- A. Q.C./Std.
- B. Screw/Std.
- C. Solder/Std.
- D. Q.C./Logic Level
- E. Screw/Logic Level
- F. Solder/Logic Level
- G. PC Pin/Std.
- H. PC Pin/Logic Level

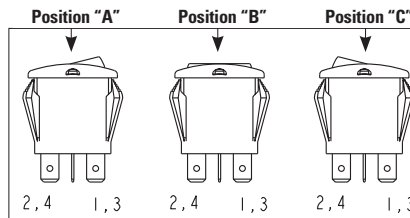
### Actuator Color/Style

- A. Red/Rocker
- B. Black/Rocker
- C. White/Rocker
- D. Red/Paddle
- E. Black/Paddle
- F. White/Paddle
- G. Red/Rocker Pinned
- H. Black/Rocker Pinned
- J. White/Rocker Pinned
- K. Red/Short Paddle Pinned
- L. Black/Short Paddle Pinned
- M. White/Short Paddle Pinned
- N. Red/Standard Paddle Pinned
- P. Black/Standard Paddle Pinned
- R. White/Standard Paddle Pinned
- T. Red/Short Paddle
- U. Black/Short Paddle
- V. White/Short Paddle

### Switch Action/Circuit

	Position "A"	Position "B"	Position "C"	Circuit
A.	1-C	NONE	OFF	SPST
B.	1-C	NONE	2-C	SPDT
C.	(1-C)	NONE	OFF	SPST
D.	(1-C)	NONE	2-C	SPDT
E.	(1-C)	OFF	(2-C)	SPDT
F.	1-C	OFF	2-C	SPDT
G.	(1-C)	OFF	2-C	SPDT
H.	OFF	NONE	2-C	SPST

NOTE: ( ) denotes momentary action.



### Light Type\*

- A. No Light
- B. 6V Incandescent
- C. 12V Incandescent
- D. 24V Incandescent
- E. 125VAC Neon
- F. 250VAC Neon
- G. 2V Red LED
- H. 2V Green LED
- J. 2V Amber LED
- K. 6V Red LED
- L. 6V Green LED
- M. 6V Amber LED
- N. 12V Red LED
- P. 12V Green LED
- Q. 12V Amber LED
- R. 24V Red LED
- S. 24V Green LED
- T. 24V Amber LED

\*See appendix for complete voltage/ratings table

## K1 PART NUMBER CODE CONTINUED FROM ABOVE

K1 Continued

X

X

X

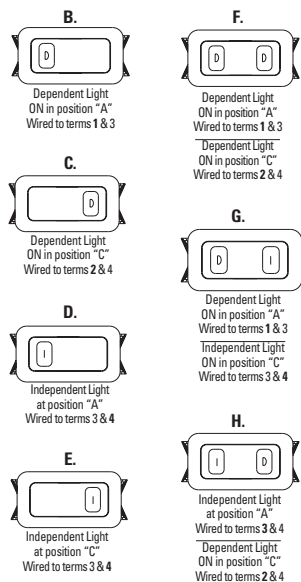
X

### Lens Color

- | Position "A" | Position "C" |
|--------------|--------------|
| A. No Lens   | A. No Lens   |
| B. Red       | B. Red       |
| C. Green     | C. Green     |
| D. Amber     | D. Amber     |
| E. Clear     | E. Clear     |

### Light/Circuit Location

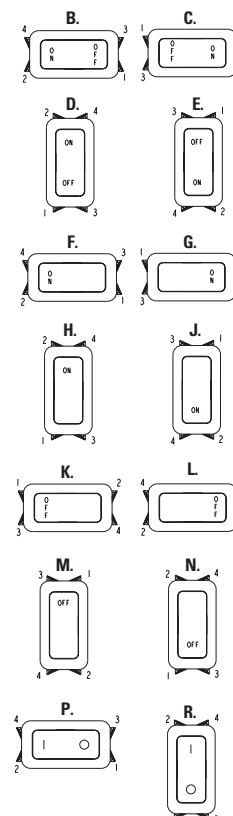
A. No Light



D = Dependent Light  
I = Independent Light

### Legend & Orientation

A. None



### NOTES:

- No momentary switches with dependent lights.
- Neon lamps only to be coded with clear or amber lenses.
- LED lenses must be clear or same color as LED.
- No dependent light in OFF position.
- All legends printed on actuators without lens(es) will be white except actuator codes C, F, J, M & R.
- All legends printed on lenses will be white except on clear lens(es) will be black.

• K1 panel plugs available as shown in Panel Plugs (PP) section.

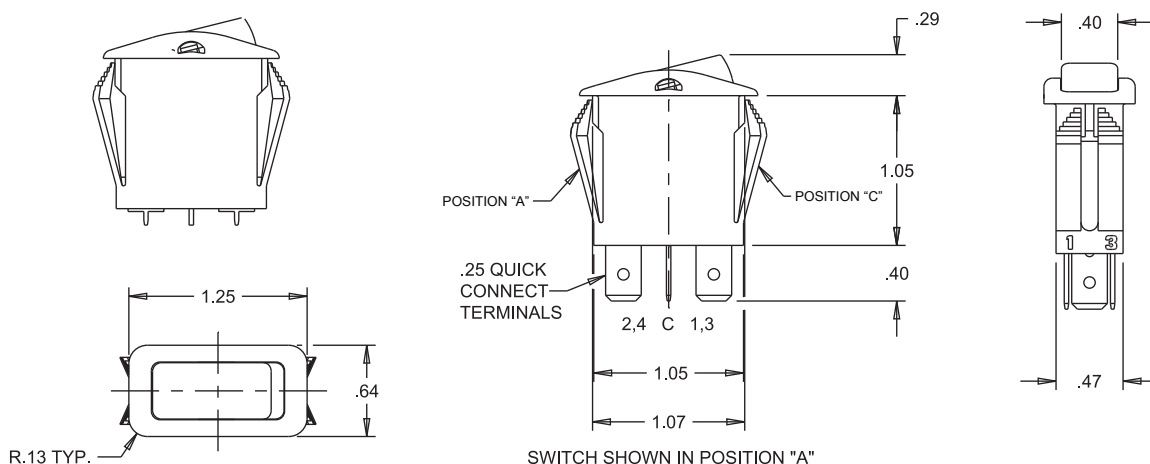
### NOTES:

- LED anode (+) terminal number shown in **bold**.
- Light on OFF side must be independent.
- Contact factory for multiple light types in the same switch.

# SEALED, ILLUMINATED ROCKER SWITCHES

**K1**  
SNAP-IN  
ROCKERS

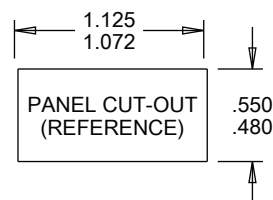
LOW COST, SNAP-IN ROCKER FOR WET & DUSTY ENVIRONMENTS



## PANEL THICKNESS AND MOUNTING OPENING GUIDELINES:

PANEL THICKNESS RANGE OF .025 - .105 (GASKET RECOMMENDED)

PANEL THICKNESS RANGE OF .105 - .187 (GASKET NOT REQUIRED)



P.C. PIN LAYOUT		PADDLE STYLES		TERMINAL STYLES ( .032 THICK)	
		SHORT PADDLE ROCKER		SCREW	QUICK CONNECT
		STANDARD PADDLE ROCKER		SOLDER	P.C. PIN

## K1 CONNECTOR PART NUMBER CODE

C405041 -

XX

XXXX

### Connector Color

- 01. Red
- 02. Black
- 03. Orange\*
- 04. Yellow\*
- 05. Green\*
- 06. Blue\*
- 07. Violet\*
- 08. Gray\*
- 09. White

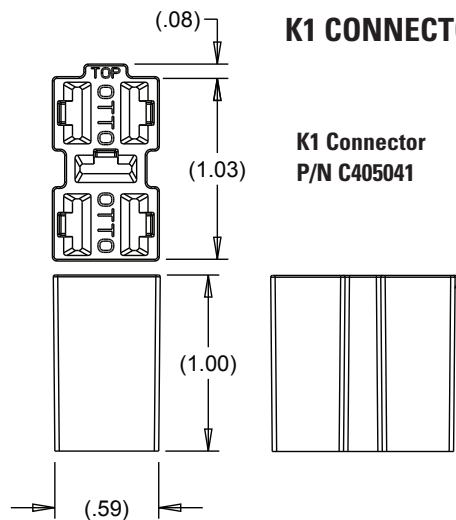
\* Contact Factory

### Packaging Quantity

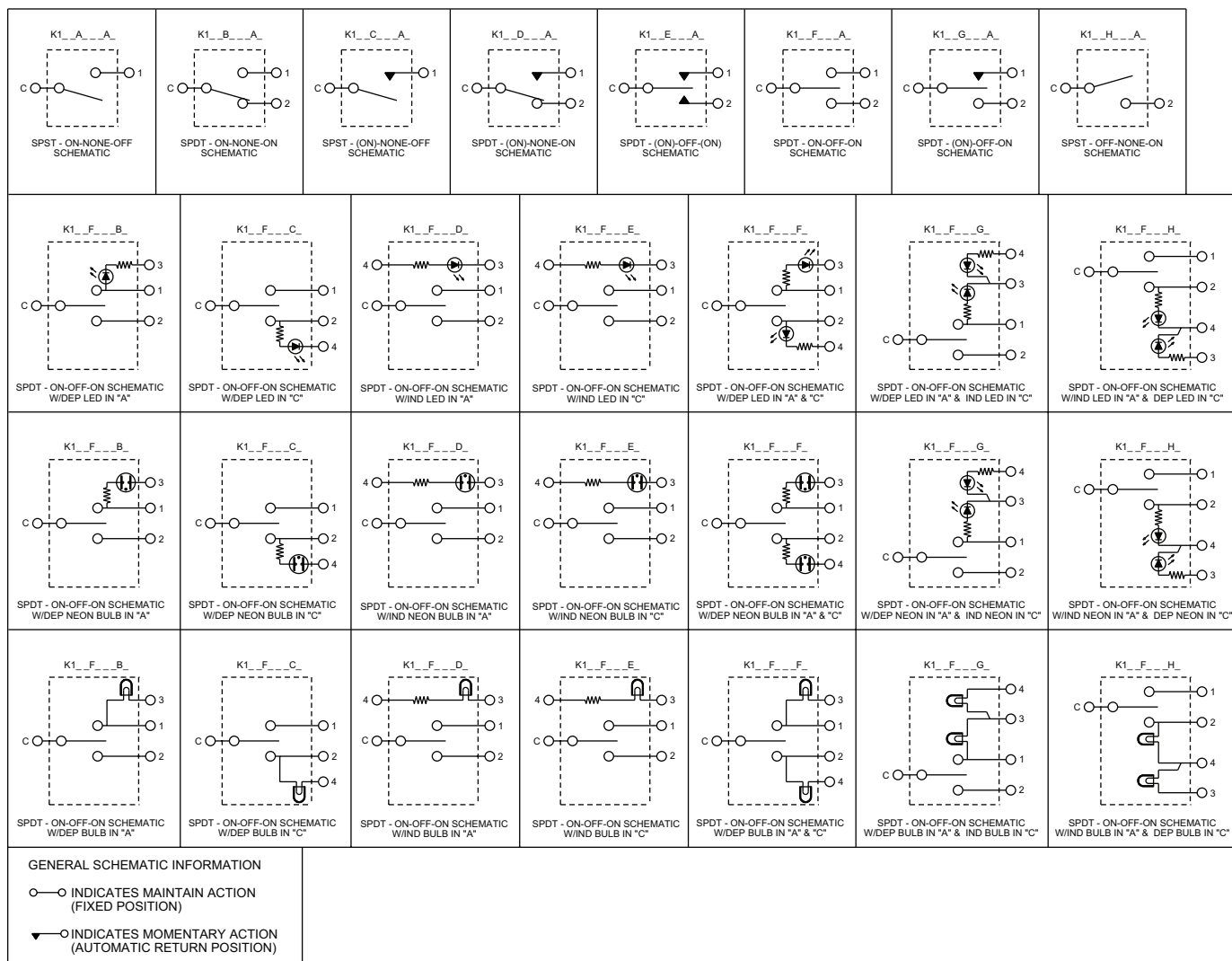
- 0025 - 25 Pcs per Package
- 0050 - 50 Pcs per Package
- 0100 - 100 Pcs per Package

## K1 CONNECTOR

**K1 Connector**  
**P/N C405041**



## LOW COST, SNAP-IN ROCKER FOR WET & DUSTY ENVIRONMENTS



### K1, K2, K3P and K4 LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LIGHT SOURCE COLOR	FORWARD CURRENT	TYPICAL FORWARD/NOMINAL VOLTAGE	MAX. FORWARD VOLTAGE
6 VDC INCANDESCENT	WHITE	.2 AMPS	6 VDC	8 VDC
12 VDC INCANDESCENT	WHITE	.08 AMPS	12 VDC	14 VDC
24 VDC INCANDESCENT	WHITE	.04 AMPS	24 VDC	28 VDC
125 VAC NEON	AMBER	1.9 mA	125 VAC	125 VAC
250 VAC NEON	AMBER	1.9 mA	250 VAC	250 VAC
2 V LED PRODUCTS*	RED	20 mA	1.9 VDC	2.5 VDC
	GREEN	20 mA	2.15 VDC	2.5 VDC
	AMBER	20 mA	1.95 VDC	2.5 VDC
	BLUE	20 mA	3.5 VDC	4.0 VDC
6 V LED PRODUCTS	SEE CHART	20 mA	6 VDC	8 VDC
12 V LED PRODUCTS	SEE CHART	20 mA	12 VDC	14 VDC
24 V LED PRODUCTS	SEE CHART	20 mA	24 VDC	28 VDC

\* See Appendix for complete Voltage/Ratings Table.

## K1 THROUGH K5 & R2 PANEL PLUGS

### K1-PA Panel Plug One Piece Molded

#### OPTIONAL PANEL GASKET:

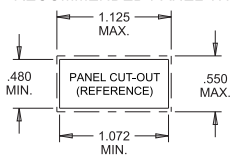
**0.062" THICKNESS =**  
P/N 807039-1

**0.031" THICKNESS =**  
P/N 807039-2

#### MOUNTING HOLE

RECOMMENDED PANEL THICKNESS:

RANGE 0.025 - 0.105 OPTIONAL PANEL  
GASKET RECOMMENDED  
RANGE 0.105 - 0.187 WITHOUT GASKET



Panel Opening:	Min.	Typ.	Max.
Width	0.480	0.515	0.550
Length	1.072	1.099	1.125

### K2-PB Panel Plug Assembled Plug

#### OPTIONAL PANEL GASKET:

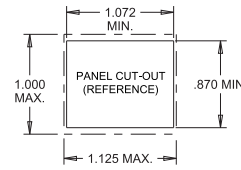
**0.062" THICKNESS =**  
P/N 807038-1

**0.031" THICKNESS =**  
P/N 807038-2

#### MOUNTING HOLE

RECOMMENDED PANEL THICKNESS:

RANGE 0.025 - 0.105 OPTIONAL PANEL  
GASKET RECOMMENDED  
RANGE 0.105 - 0.187 WITHOUT GASKET



Panel Opening:	Min.	Typ.	Max.
Width	0.870	0.937	1.00
Length	1.072	1.099	1.125

### K4-PB Panel Plug Assembled Plug

#### OPTIONAL PANEL GASKET:

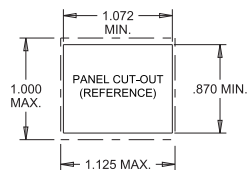
**0.062" THICKNESS =**  
P/N 807038-1

**0.031" THICKNESS =**  
P/N 807038-2

#### MOUNTING HOLE

RECOMMENDED PANEL THICKNESS:

RANGE 0.025 - 0.105 OPTIONAL PANEL  
GASKET RECOMMENDED  
RANGE 0.105 - 0.187 WITHOUT GASKET



Panel Opening:	Min.	Typ.	Max.
Width	0.870	0.937	1.00
Length	1.072	1.099	1.125

### K3-PB Panel Plug Assembled Plug

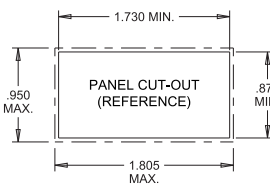
#### OPTIONAL PANEL GASKET:

P/N C807037

#### MOUNTING HOLE

RECOMMENDED PANEL THICKNESS:

RANGE 0.025 - 0.105 OPTIONAL PANEL  
GASKET RECOMMENDED  
RANGE 0.102 - 0.187 WITHOUT GASKET



Panel Opening:	Min.	Typ.	Max.
Width	0.870	0.937	0.950
Length	1.730	1.768	1.805

### K5-PA / R2-PA Panel Plug One Piece Molded

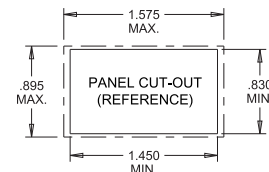
#### OPTIONAL PANEL GASKET:

P/N C807109

#### MOUNTING HOLE

RECOMMENDED PANEL THICKNESS:

RANGE 0.025 - 0.105 OPTIONAL PANEL  
GASKET RECOMMENDED  
RANGE 0.105 - 0.187 WITHOUT GASKET



Panel Opening:	Min.	Typ.	Max.
Width	0.830	0.863	0.895
Length	1.450	1.513	1.575

## PANEL PLUG PART NUMBER CODE

Series	Plug	Style	Plug Color ③	Button Insert ③
K1 ①	P	A. One Piece Molded	1. Red	1. Red*
K2 ②		B. Assembled Plug	2. Black	2. Black*
K3 ②			9. White	9. White*
K4 ②				Z. NONE**
K5 ①				
R2 ①				

\*K3 series only.

\*\*Molded plug only.

① Available in Style A only.

② Available in Style B only.

③ Additional colors available. Contact factory.

# LED VOLTAGE/CURRENT RATINGS TABLE

## ROCKER AND ROTARY SWITCH VOLTAGE/CURRENT RATINGS TABLES

### K1, K2, K3P and K4 LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LIGHT SOURCE COLOR	FORWARD CURRENT	TYPICAL FORWARD/ NOMINAL VOLTAGE	MAX. FORWARD VOLTAGE
6 VDC INCANDESCENT	WHITE	.2 AMPS	6 VDC	8 VDC
12 VDC INCANDESCENT	WHITE	.08 AMPS	12 VDC	14 VDC
24 VDC INCANDESCENT	WHITE	.04 AMPS	24 VDC	28 VDC
125 VAC NEON	AMBER	1.9 mA	125 VAC	125 VAC
250 VAC NEON	AMBER	1.9 mA	250 VAC	250 VAC
2 V LED PRODUCTS*	RED	20 mA	1.9 VDC	2.5 VDC
	GREEN	20 mA	2.15 VDC	2.5 VDC
	AMBER	20 mA	1.95 VDC	2.5 VDC
	BLUE	20 mA	3.5 VDC	4.0 VDC
6 V LED PRODUCTS	SEE CHART	20 mA	6 VDC	8 VDC
12 V LED PRODUCTS	SEE CHART	20 mA	12 VDC	14 VDC
24 V LED PRODUCTS	SEE CHART	20 mA	24 VDC	28 VDC

### K3/K5 LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LIGHT SOURCE COLOR	FORWARD CURRENT	TYPICAL FORWARD/ NOMINAL VOLTAGE	MAX. FORWARD VOLTAGE
6 VDC INCANDESCENT	WHITE	.2 AMPS	6 VDC	8 VDC
12 VDC INCANDESCENT	WHITE	.08 AMPS	12 VDC	14 VDC
24 VDC INCANDESCENT	WHITE	.04 AMPS	24 VDC	28 VDC
125 VAC NEON	AMBER	1.9 mA	125 VAC	125 VAC
250 VAC NEON	AMBER	1.9 mA	250 VAC	250 VAC
2 V LED PRODUCTS*	RED	20 mA	2.0 VDC	2.5 VDC
	GREEN	20 mA	2.2 VDC	2.6 VDC
	AMBER	20 mA	2.1 VDC	2.5 VDC
6 V LED PRODUCTS	SEE CHART	20 mA	6 VDC	8 VDC
12 V LED PRODUCTS	SEE CHART	20 mA	12 VDC	14 VDC
24 V LED PRODUCTS	SEE CHART	20 mA	24 VDC	28 VDC

### R2 LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LIGHT SOURCE COLOR	FORWARD CURRENT	TYPICAL FORWARD/ NOMINAL VOLTAGE	MAX. FORWARD VOLTAGE
2 V LED PRODUCTS*	RED	20 mA	2.0 VDC	2.5 VDC
	GREEN	20 mA	2.2 VDC	2.6 VDC
	AMBER	20 mA	2.1 VDC	2.5 VDC
6 V LED PRODUCTS	SEE CHART	20 mA	6 VDC	8 VDC
12 V LED PRODUCTS	SEE CHART	20 mA	12 VDC	14 VDC
24 V LED PRODUCTS	SEE CHART	20 mA	24 VDC	28 VDC

\*Intended for use with external resistor. The "2 volt" switches are intended to have a resistor added in series into the lighting circuit by the customer. To determine the approximate value of the resistor, use the equation below:

$$\text{RESISTOR SIZE} = \frac{\text{POWER SUPPLY VOLTAGE} - \text{LED FORWARD VOLTAGE}}{\text{LED FORWARD CURRENT}}$$

# LED VOLTAGE/CURRENT RATINGS TABLE

## ILLUMINATED PUSHBUTTON SWITCH & INDICATOR LIGHTS VOLTAGE/CURRENT RATINGS TABLES

### LP3, LP5 AND LPL SERIES

#### LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LED COLOR	FORWARD CURRENT	TYP. FORWARD VOLTAGE (DC)	MAX. FORWARD VOLTAGE DC
2V* PRODUCTS	RED	20 mA	1.9V	2.5V
	GREEN	20 mA	2.2V	2.6V
	AMBER			
	BLUE	20 mA	3.3V	4V
	DEEP GREEN			
6V PRODUCTS	ALL COLORS	20 mA	6V	8V
12V PRODUCTS	ALL COLORS	20 mA	12V	14.5V
24V PRODUCTS	ALL COLORS	20 mA	24 V	28.6 V

### LP3S

#### LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LED COLOR	FORWARD CURRENT	TYP. FORWARD VOLTAGE	MAX. FORWARD VOLTAGE
2V* PRODUCTS	RED	20 mA	2 V	2.5 V
	GREEN			
	AMBER			
	BLUE	20 mA	3.2 V	4 V
	DEEP GREEN			
12V PRODUCTS	ALL COLORS	20 mA	12V	14V
24V PRODUCTS	ALL COLORS	20 mA	24 V	28.6 V

### LP7-D and LP9 SERIES

#### LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LED COLOR, WAVELENGTH (nm)	FORWARD CURRENT	TYP. FORWARD VOLTAGE	MAX. FORWARD VOLTAGE
2V LIGHTPIPE STYLE	RED (631)	20 mA	2V	2.4V
	GREEN (525)	20 mA	3.2V	3.6V
	AMBER (591)	20 mA	2.1V	2.4V
	BLUE (470)	20 mA	3.3V	3.8V
	WHITE	5 mA	2.9V	3.15V
2V, TRANSLUCENT FULLY ILLUMINATED STYLE	RED (630)	20 mA	1.95V	2.5V
	GREEN (525)	20 mA	3.3V	4.1V
	AMBER (601)	20 mA	2.1V	2.5V
	BLUE (465)	20 mA	3.3V	4V
	WHITE	5 mA	2.85V	3.1V
12V ALL PRODUCTS	ALL COLORS, SAME AS 2V	(20 mA)	12.0V	14.0V

### LP9L SERIES

#### LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LED COLOR, WAVELENGTH (nm)	FORWARD CURRENT	TYP. FORWARD VOLTAGE	MAX. FORWARD VOLTAGE
2V PRODUCTS	RED (631)	20 mA	2V	2.4V
	GREEN (525)	20 mA	3.2V	3.6V
	AMBER (591)	20 mA	2.1V	2.4V
	BLUE (470)	20 mA	3.3V	3.8V
	WHITE	5 mA	2.9V	3.15V
12V PRODUCTS	ALL COLORS, SAME AS 2V	(20 mA)	12.0V	14.0V

\*Intended for use with external resistor. The "2 volt" switches are intended to have a resistor added in series into the lighting circuit by the customer. To determine the approximate value of the resistor, use the equation below:

$$\text{RESISTOR SIZE} = \frac{\text{POWER SUPPLY VOLTAGE} - \text{LED FORWARD VOLTAGE}}{\text{LED FORWARD CURRENT}}$$