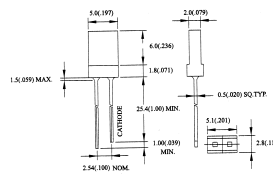


PANEL LAMPS & LED's

Rectangular LED's

2 mm X 5 mm X 7 mm

Part Number	Forward Current (I _f) ma	Max Forward Voltage	Typical Voltage	LED Color	Viewing Angle
11-642	20 ma	2.0V	1.7V	Red	120°
11-643	20 ma	2.6V	2.0V	Orange	120°
11-644	20 ma	2.6V	2.1V	Yellow	120°
11-645	20 ma	2.6V	2.2V	Green	120°



Infrared Emitting Diodes

These diodes are used in remote controls, photo detectors, smoke detectors, etc.

3 mm (T-1) @ 50ma

Part Number	Max Forward Voltage	Typical Voltage	Viewing Angle
11-680	1.6V	1.4V	30°

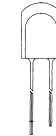
5 mm (T-1 3/4) @ 50 ma

Part Number	Max Forward Voltage	Typical Voltage	Viewing Angle
11-681	1.6V	1.4V	45°

Square LED's

8 mm X 8 mm X 12 mm

Part Number	Forward Current (I _f) ma	Max Forward Voltage	Typical Voltage	LED Color	Viewing Angle
11-632	20 ma	2.6V	2.2V	Bright Red	140°
11-633	20 ma	2.6V	2.0V	Bright Orange	140°
11-635	20 ma	2.6V	2.2V	Bright Green	140°



Silicon Photo Transistors

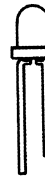
These devices are an electronic switch. When this unit is activated current is allowed to flow through the device. These items are used in Optical encoders, Automatic Control Systems, Photo Detectors and other applications where an optical switch is needed.

3 mm (T-1)

Part Number	Max Breakdown Voltage	Typical Voltage	Typical Carry Current	Viewing Angle
11-690	30V	5V	20 ma	30°

5 mm (T-1 3/4)

Part Number	Max Breakdown Voltage	Typical Voltage	Typical Carry Current	Viewing Angle
11-691	30V	5V	20 ma	35°



Press in Holders

Press to fit holders, hold flangeless LED's snugly into mounting hole.

No. 11-400

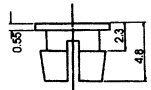
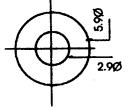
3 mm LED (5.5 mm hole)

No. 11-401

5 mm LED (6.2 mm hole)

No. 11-404

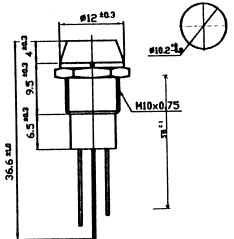
5 mm LED (6.2 mm hole) with lamp support



Bi-Polar 8 mm LED

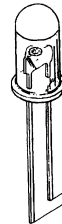
Lamps are in a recessed chrome bezel which holds a 8 mm LED that operates at 2V. The LED glows Red if current is applied in one direction and Green if applied in the other direction, mounting hole 9.8mm (25/64")

No. 11-352 Red / Green



LED's

The LED (light emitting diode) offered in this section are without mounting hardware, or discrete devices. The LED consists of four components: a lead frame, a dice (or LED chip), and a fine wire bond which is encapsulated in an epoxy base. (see Below) Depending on the chip used, the observer will see a monochromatic red, green, orange, yellow or blue light. There are no moving parts, so these devices are considered a "solid state device". The LED's operate on from 1.7V-2.5V if you need the lamp to operate at a higher voltage a current limiting resistor is needed. The value of the resistor will vary depending upon the desired voltage and whether it is AC or DC volts. Each color of LED works at a different operating current which will change the value of the resistor.



3 mm (T-1) Round LED's

Part Number	Forward Current (I _f) ma	Max Forward Voltage	Typical Voltage	LED Color	Viewing Angle
11-602	20 ma	2.0V	1.7V	Red	35°
11-604	20 ma	2.6V	2.1V	Yellow	35°
11-605	20 ma	2.6V	2.2V	Green	35°



5 mm (T-1 3/4) Round LED's

Part Number	Forward Current (I _f) ma	Max Forward Voltage	Typical Voltage	LED Color	Viewing Angle
11-611	20 ma	2.0V	1.7V	Red	35°
11-612	20 ma	2.6V	2.2V	Bright Red	35°
11-614	20 ma	2.6V	2.1V	Yellow	35°
11-615	20 ma	2.6V	2.2V	Green	35°



12 mm Round LED's

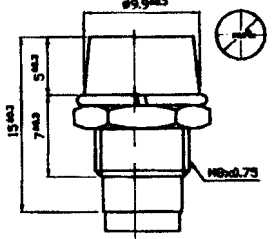
Part Number	Forward Current (I _f) ma	Max Forward Voltage	Typical Voltage	LED Color	Viewing Angle
11-662	20 ma	2.6V	2.2V	Bright Red	50°
11-663	20 ma	2.6V	2.0V	Orange	50°
11-664	20 ma	2.6V	2.1V	Yellow	50°
11-665	20 ma	2.6V	2.2V	Green	50°



5 mm LED Lamp Holder

The holders hold a 5 mm LED (T-1 3/4). They are a chrome recessed style holder which mounts into a 7.9mm (5/16") hole with a hex nut.

No. 11-480

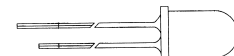


Blinking LED's

The blinking LED operates on 3 - 10 VDC at 25 milliamps. This series of LED's have internal CMOS (or TTL circuits to drive the LED blinking and no external or additional circuitry is required.

5mm (T-1 3/4)

Part Number	Pulse Rate (VDD=5V)Hz	LED Color	Viewing Angle	Luminous Intensity
11-672	2.4Hz	Bright Red	45°	12.0
11-674	2.4Hz	Yellow	45°	35.0
11-675	2.4Hz	Green	45°	40.0



90° Surface Mt. Holders

Mount LED's at 90° to PCBoards

No. 11-409

3 mm Single

No. 11-410

5 mm Single

No. 11-412

5 mm Dual

