



LED Panel Dot Indicators

LTL-1214A	Bright Red
LTL-1234A	Green
LTL-1254A	Yellow
LTL-1294A	Red Orange

Features

- Low power consumption.
- Suitable for pulsed operation.
- Most suitable for use like audio panel indicator.
- Fits 2mm hole in panels up to 4.5mm(0.177") thick.
- Long life solid state reliability.

Description

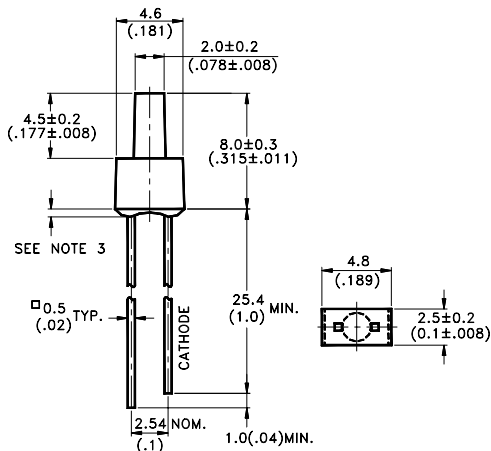
The Bright Red source color devices are made with Gallium Phosphide on Gallium Phosphide Red Light Emitting Diode.

The Red Orange source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.

The Green source color devices are made with Gallium Phosphide on Gallium Phosphide Green Light Emitting Diode.

The Yellow source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Yellow Light Emitting Diode.

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25\text{mm}$ (.010") unless otherwise noted.
3. Protruded resin under flange is 1.0mm (.04") max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.

Devices

Part No. LTL-	Lens	Source Color
1214A	Red Diffused	Bright Red
1234A	Green Diffused	Green
1254A	Yellow Diffused	Yellow
1294A	Orange Diffused	Red Orange

Absolute Maximum Ratings at Ta=25°C

Parameter	Bright Red	Green	Yellow	Red Orange	Unit
Power Dissipation	40	100	60	100	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	60	120	80	120	mA
Continuous Forward Current	15	30	20	30	mA
Derating Linear From 25°C	0.2	0.4	0.25	0.4	mA/°C
Reverse Voltage	5	5	5	5	V
Operating Temperature Range	-55°C to +100°C				
Storage Temperature Range	-55°C to +100°C				
Lead Soldering Temperature [1.6mm (0.063 in.) from body]	260°C for 5 Seconds				

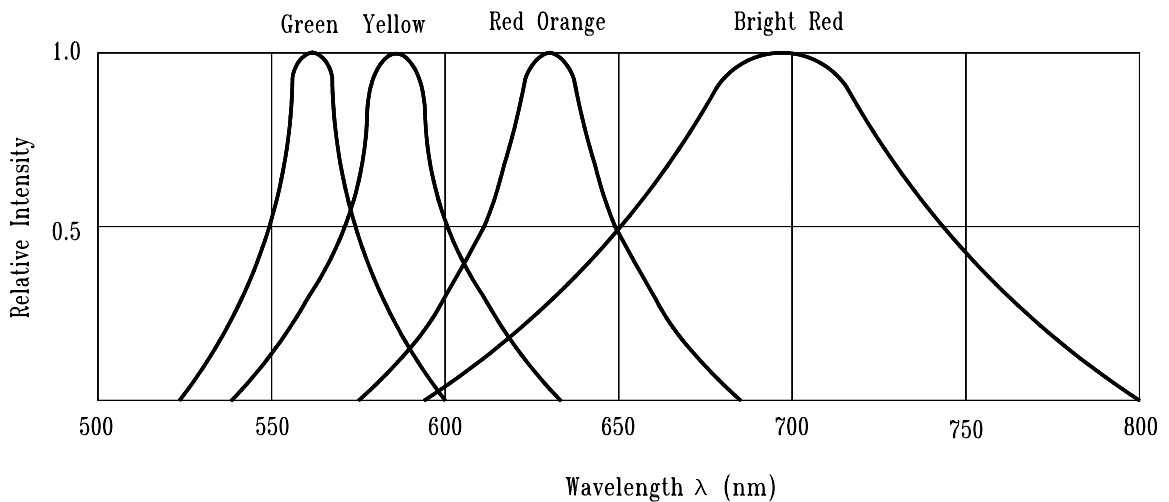


Fig.1 Relative Intensity vs. Wavelength

Electrical/Optical Characteristics at Ta=25°C

Parameter	Symbol	Part No. LTL-	Min.	Typ.	Max.	Unit.	Test Condition.
Luminous Intensity	I_v	1214A 1234A 1254A 1294A	0.4 0.7 1.1 0.7	1.1 1.7 3.7 2.5		mcd	$I_F=10$ mA Note 1,4
Viewing Angle	$2\theta_{1/2}$	12x4A		120		deg	Note 2 (Fig.6)
Peak Emission Wavelength	λ_P	1214A 1234A 1254A 1294A		697 565 585 630		nm	Measurement @Peak (Fig.1)
Dominant Wavelength	λ_d	1214A 1234A 1254A 1294A		657 569 588 621		nm	Note 3
Spectral Line Half Width	$\Delta\lambda$	1214A 1234A 1254A 1294A		90 30 35 40		nm	
Forward Voltage	V_F	1214A 1234A 1254A 1294A		2.1 2.1 2.1 2.0	2.6 2.6 2.6 2.6	V	$I_F=20$ mA
Reverse Current	I_R	12x4A			100	μ A	$V_R=5$ V
Capacitance	C	1214A 1234A 1254A 1294A		55 35 15 20		pF	$V_F=0$, $f=1$ MHz

Notes:1.Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.

2. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

3.The dominant wavelength, λ_d is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

4. I_v needs $\pm 15\%$ additional for guaranteed limits.

Typical Electrical/Optical Characteristic Curves (25°C Ambient Temperature Unless Otherwise Noted)

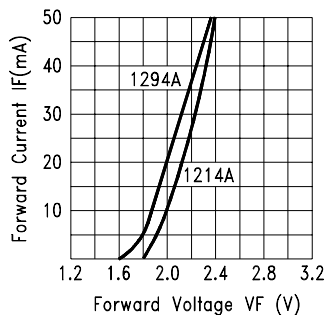


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

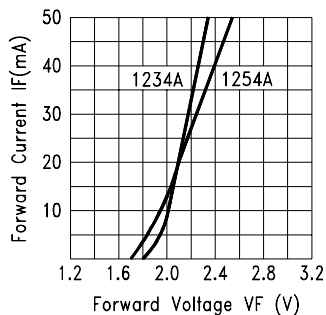


Fig.3 FORWARD CURRENT VS. FORWARD VOLTAGE

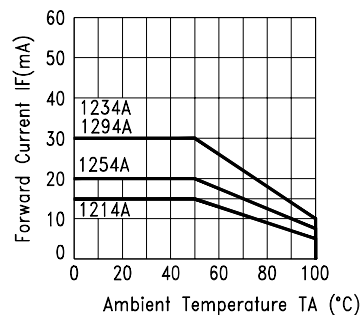


Fig.4 FORWARD CURRENT DERATING CURVE

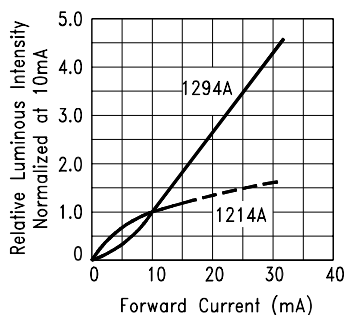


Fig.5 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

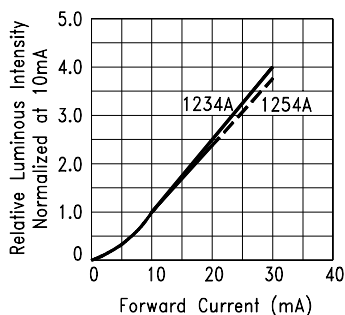


Fig.6 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

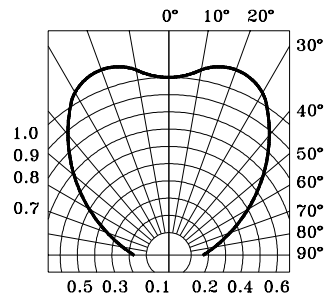


Fig.7 SPATIAL DISTRIBUTION

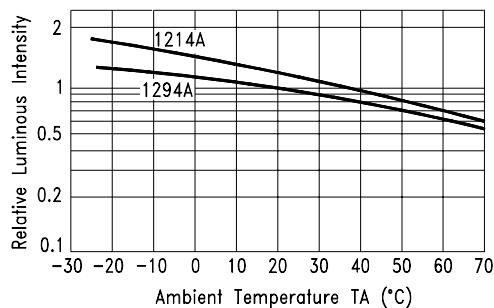


Fig.8 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

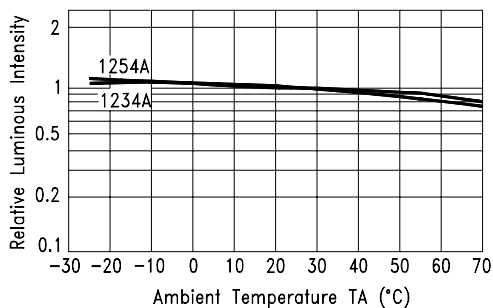


Fig.9 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE