T-1 3/4 (5mm) Low Profile LED Lamps

LTL-5203 Red
LTL-5223 High Efficiency Red
LTL-5233 Green
LTL-5253 Yellow

Features

- High intensity light source with two lenses effects.
- Red, green and yellow clors available.
- Low profile.
- Low power consumption.
- General purpose leads.
- I.C compatible/low current requirements.
- Reliable and rugged.

Description

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

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

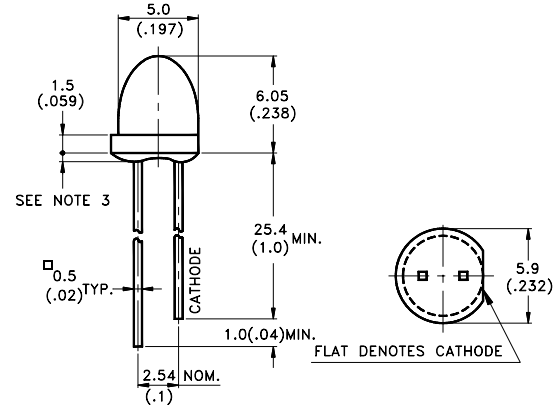
The Green source color devices are made with Gallium Phosphide on Gallium Phosphide Green Light Emitting Diode.

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

Devices

Part No. LTL-	Lens	Source Color
5203	Red Diffused	Red
5223	Red Diffused	Hi. Eff. Red
5233	Green Diffused	Green
5253	Yellow Diffused	Yellow

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25mm (.010") unless otherwise noted.
3. Protruded resin under flange is 1.5mm (.059") max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.

Absolute Maximum Ratings at Ta=25℃

Parameter	Red	Hi.Eff.Red	Green	Yellow	Unit
Power Dissipation	80	100	100	60	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	200	120	120	80	mA
Continuous Forward Current	40	30	30	20	mA
Derating Linear From 25℃	0.5	0.4	0.4	0.25	mA/℃
Reverse Voltage	5	5	5	5	V
Operating Temperature Range	-55℃ to +100℃				
Storage Temperature Range	-55℃ to +100℃				
Lead Soldering Temperature [1.6mm (.063 in.) from body]	260℃ for 5 Seconds				

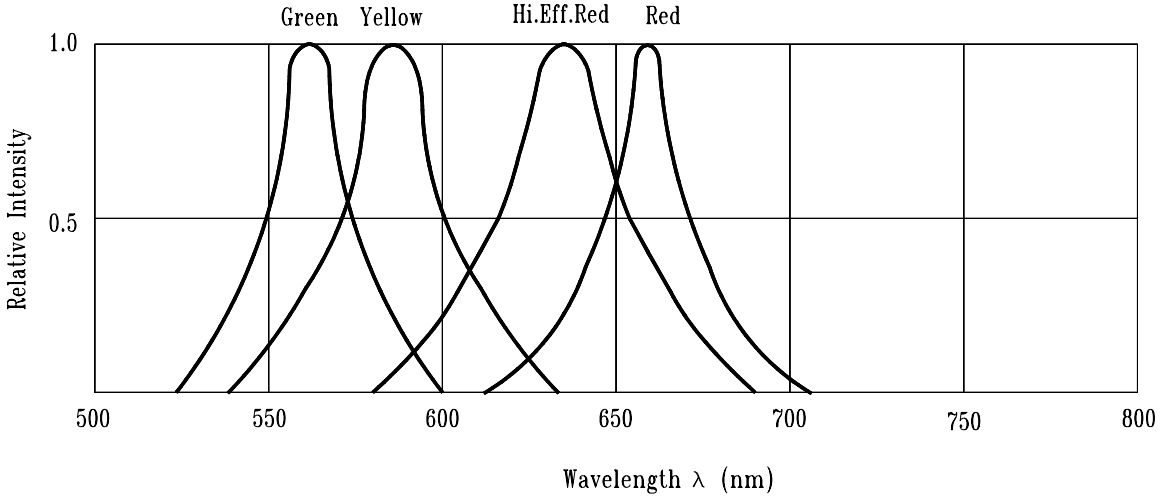


Fig.1 Relative Intensity vs. Wavelength

Electrical/Optical Chrarcteristics at Ta=25℃

Parameter	Symbol	Part No. LTL-	Min.	Typ.	Max.	Unit.	Test Condition.
Luminous Intensity	I_V	5203 5223 5233 5253	0.2 1.7 1.7 1.0	0.5 5.6 5.6 4.0		mcd	I_F=10 mA Note 1,4
Viewing Angle	$2\theta_{1/2}$	52x3		64		deg	Note 2 (Fig.7)
Peak Emission Wavelength	λP	5203 5223 5233 5253		655 635 565 585		nm	Measurement @Peak (Fig.1)
Dominant Wavelength	λd	5203 5223 5233 5253		651 623 569 588		nm	Note 3
Spectral Line Half Width	$\triangle\lambda$	5203 5223 5233 5253		24 40 30 35		nm	
Forward Voltage	V_F	5203 5223 5233 5253		1.7 2.0 2.1 2.1	2.0 2.6 2.6 2.6	V	I_F=20mA
Reverse Current	I_R	52x3			100	μA	V_R=5V
Capacitance	C	5203 5223 5233 5253		30 20 35 15		pF	V_F=0 , f=1MHz

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% additionary for guaranteed limits.

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

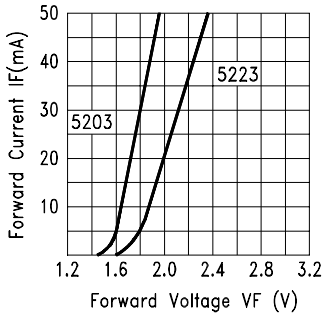


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

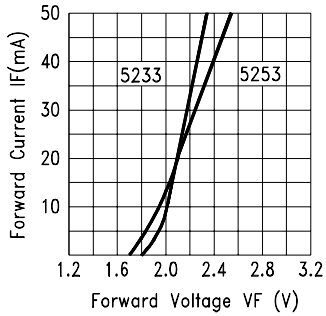


Fig.3 FORWARD CURRENT VS. FORWARD VOLTAGE

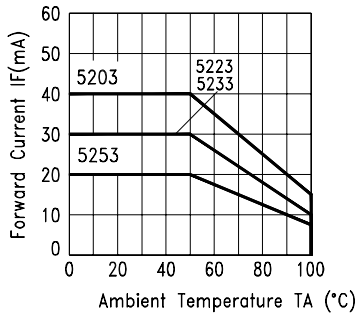


Fig.4 FORWARD CURRENT DERATING CURVE

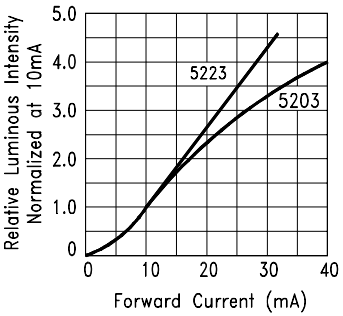


Fig.5 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

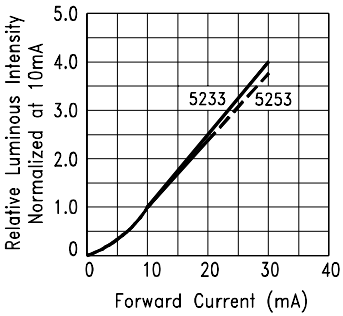


Fig.6 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

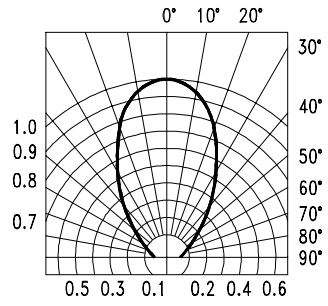


Fig.7 SPATIAL DISTRIBUTION

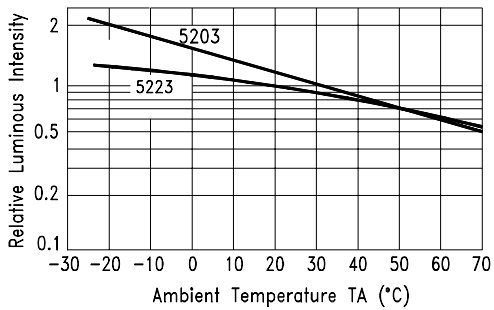


Fig.8 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

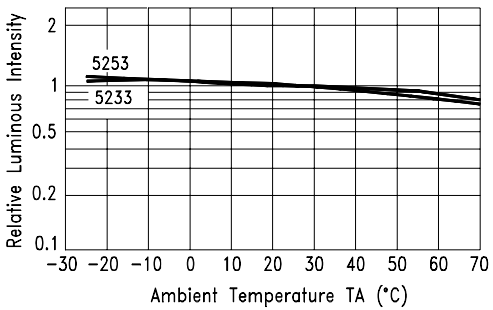


Fig.9 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE