



American Opto Plus LED Corp.

L314ET

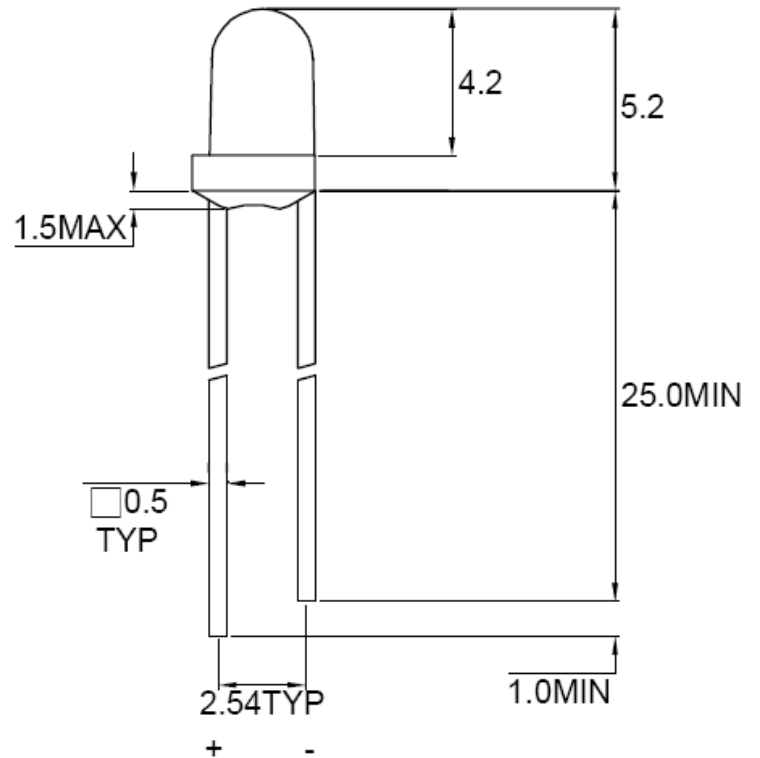
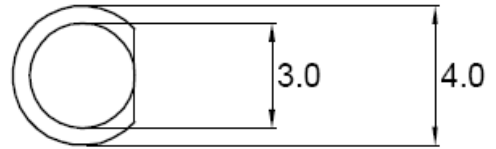
3mm Red Lamp LED

DESCRIPTION

- Round type
- T1 (3mm) diameter
- Lens color: Red Transparent
- With flange
- Solder leads without stand-off

FEATURES

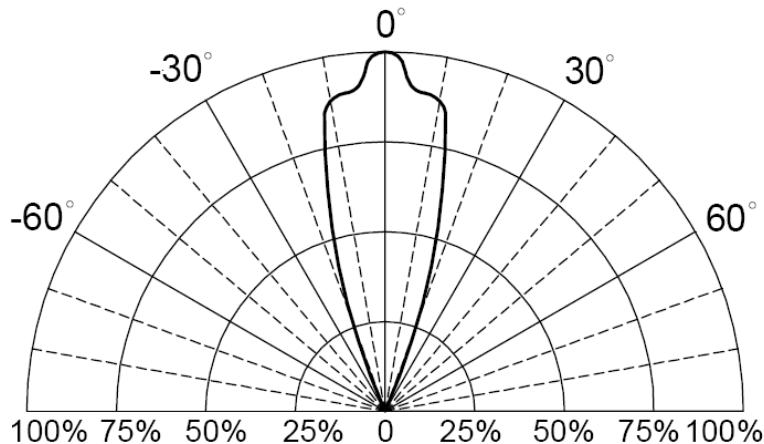
- Emitted color: Red
- Technology: GaAsP/GaP
- Viewing angle: 30°
- Peak wavelength $\lambda_p = 635\text{nm}$



NOTES:

1. All dimensions are in millimeters tolerance is $\pm 0.25\text{mm}$ unless otherwise noted;

Directivity Radiation





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ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I _f	30	mA
Peak Forward Current Duty (1/10@10KHz)	I _{fp}	120	mA
Power Dissipation	P _D	100	mW
Reverse Current @ 5V	I _r	10	μA
Operating temperature range	T _{opr}	-40~+85	°C
Storage temperature range	T _{stg}	-40~+100	°C

OPTICAL-ELECTRICAL CHARACTERISTICS

(Ta=25°C)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Luminous Intensity	I _v	I _F =20mA	20	45	--	mcd
Peak Wavelength	λ _D		--	635	--	nm
Spectral Line Half-Width	Δλ		--	45	--	nm
Forward Voltage	V _f		1.7	--	2.6	V
Viewing angle	2θ ½		--	30	--	Deg

- *Note: 1. The forward voltage data did not include ±0.1V testing tolerance.
 2. The luminous intensity data did not include ±15% testing tolerance.



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TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES

Fig.1 Forward current vs. Forward Voltage

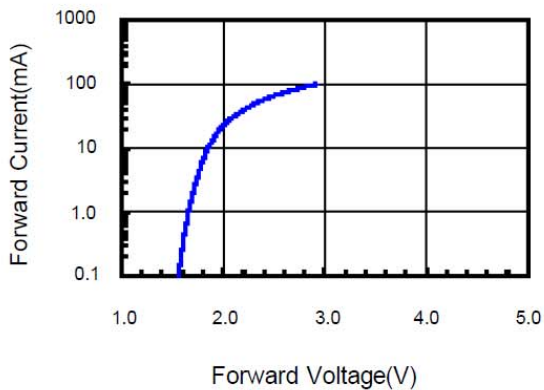


Fig.2 Relative Intensity vs. Forward Current

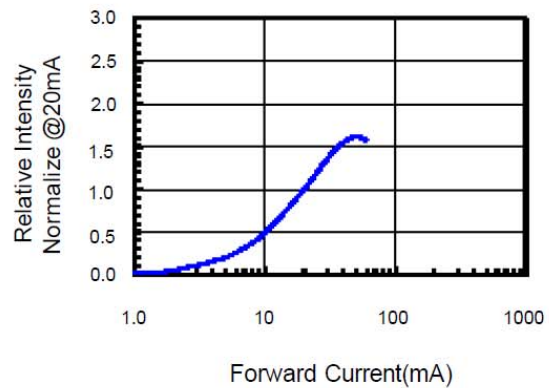


Fig.3 Forward Voltage vs. Temperature

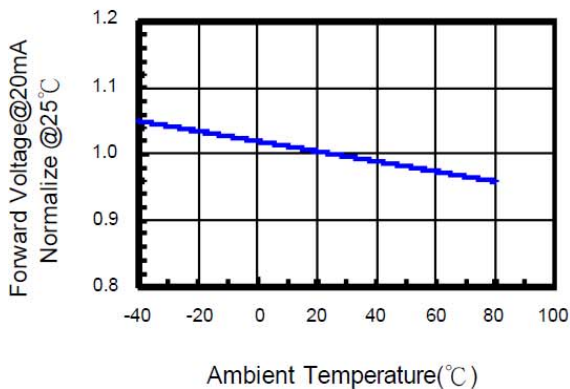


Fig.4 Relative Intensity vs. Temperature

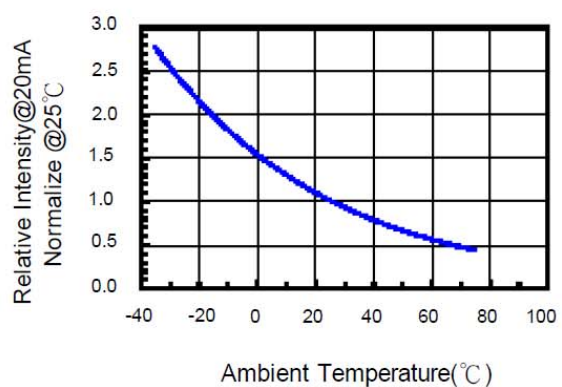
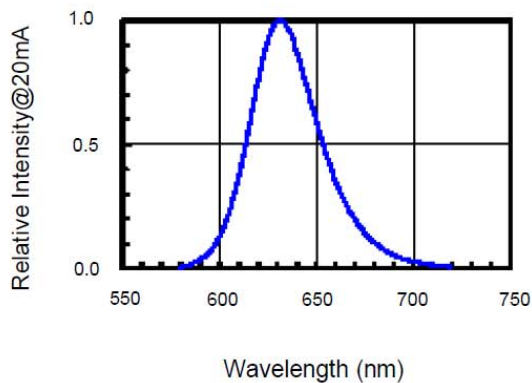


Fig.5 Relative Intensity vs. Wavelength





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SOLDERING CONDITION (Pb-Free)

1. Iron:

Soldering Iron: 30W Max

Temperature 350°C Max

Soldering Time: 3 Seconds Max (One Time)

Distance: 2mm Min (From solder joint to body)

2. Wave Soldering Profile

Dip Soldering

Preheat: 120°C Max

Preheat time: 60 seconds Max

Ramp-up

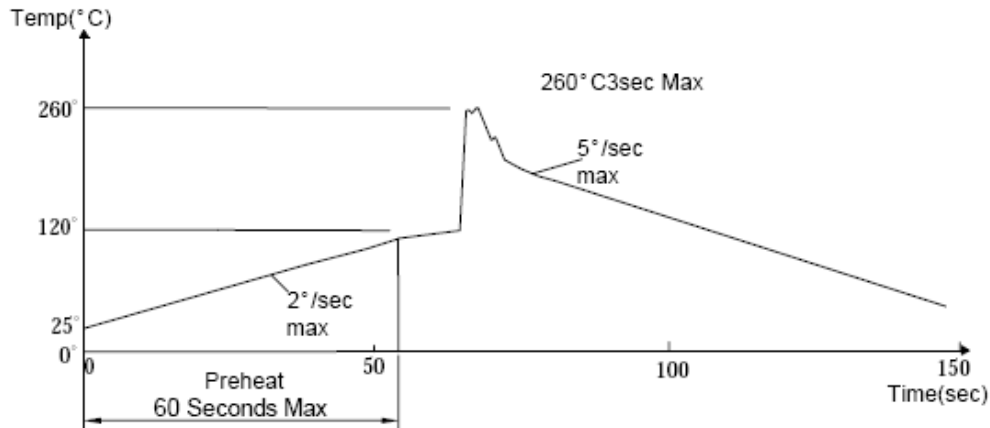
2°C/sec (Max)

Ramp-Down: -5°C/sec (Max)

Solder Bath: 260°C Max

Dipping Time: 3 seconds Max

Distance: 2mm Min (from solder joint to body)





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RELIABILITY TEST:

Test Item	Test Condition	Description	Reference Standard
Operating Life Test	1.Under Room Temperature 2.If=20mA 3.t=1000 hrs (-24hrs, +72hrs)	This test is conducted for the purpose of determining the resistance of a part in electrical and thermal stressed.	MIL-STD-750: 1026 MIL-STD-883: 1005 JIS C 7021: B-1
High Temperature Storage Test	1.Ta=105 °C±5°C 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under condition of high temperature for hours.	MIL-STD-883:1008 JIS C 7021: B-10
Low Temperature Storage Test	1.Ta=-40 °C±5°C 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under condition of low temperature for hours.	JIS C 7021: B-12
High Temperature High Humidity Test	1.Ta=65 °C±5°C 2.RH=90%~95% 3.t=240hrs ±2hrs	The purpose of this test is the resistance of the device under tropical for hours.	MIL-STD-202:103B JIS C 7021: B-11
Thermal Shock Test	1.Ta=105 °C±5°C & -40°C±5°C (10min) (10min) 2.total 10 cycles	The purpose of this is the resistance of the device to sudden extreme changes in high and low temperature.	MIL-STD-202: 107D MIL-STD-750: 1051 MIL-STD-883: 1011
Solder Resistance Test	1.T.Sol=260 °C±5°C 2.Dwell time= 10 ±1sec.	This test intended to determine the thermal characteristic resistance of the device to sudden exposures at extreme changes in temperature when soldering the lead wire.	MIL-STD-202: 210A MIL-STD-750: 2031 JIS C 7021: A-1
Solderability Test	1.T.Sol=230 °C±5°C 2.Dwell time=5 ±1sec	This test intended to see soldering well performed or not.	MIL-STD-202: 208D MIL-STD-750: 2026 MIL-STD-883: 2003 JIS C 7021: A-2