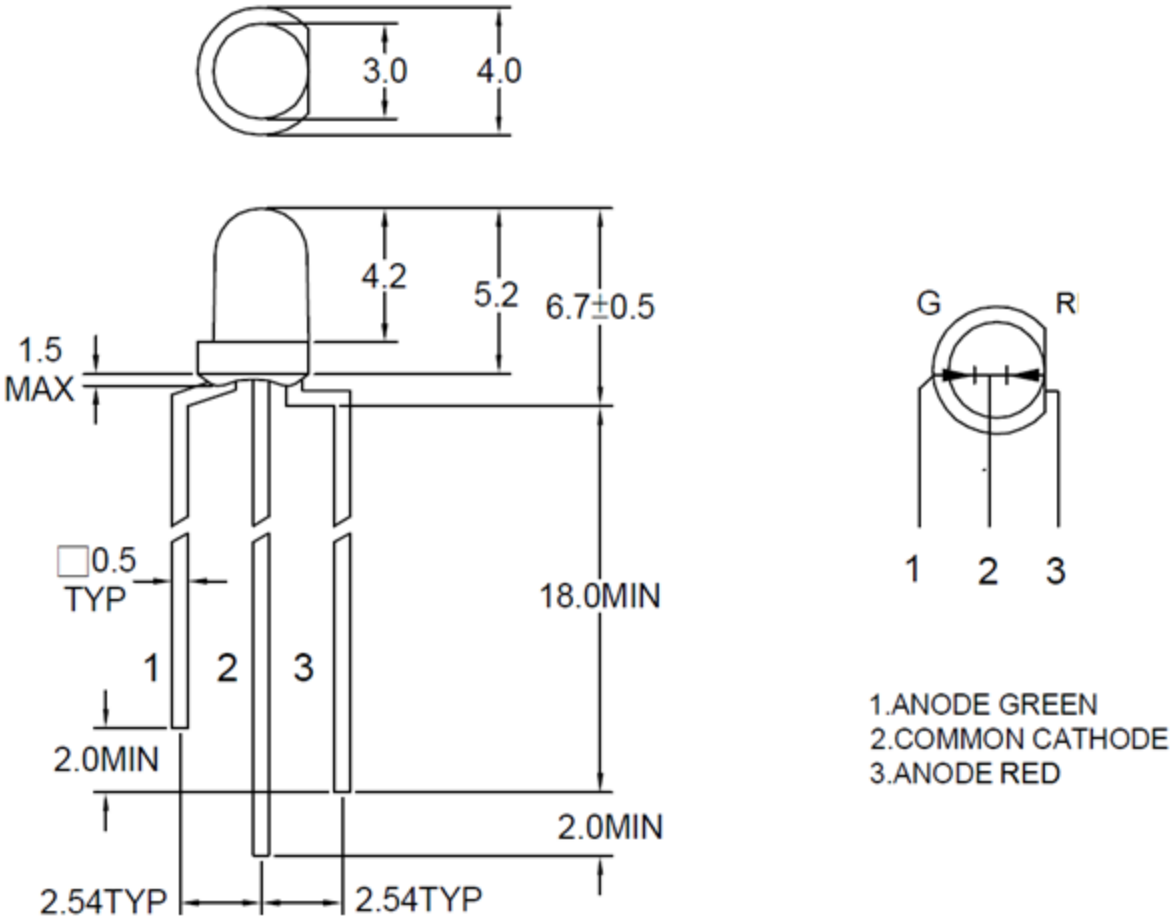
American Opto Plus LED Corp.
L319L-EGW-60D

3mm Red Green Bi-Color LED Lamp

PACKAGE DIMENSIONS



Note: all dimensions are in millimeters; tolerance: ±0.25mm unless otherwise noted.

Part No.	Material	Color	
		Emitted	Lens
L319L-EGW-60D	GaAsP/GaP	Red	White Diffused
	GaP	Green	

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Parameter	Symbol	Ratings		Unit
		R	G	
Forward Current	I_F	30	30	mA
Peak Forward Current (Duty 1/10@10KHz)	I_{FP}	120	120	mA
Power Dissipation	P_D	100	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	Color	Min	Typ	Max	Unit
Forward Voltage	V_F	I_F=20mA	Red	1.7	--	2.6	V
			Green	1.7	--	2.6	
Luminous Intensity (I_F@10mA)	I_V		Red	8.0	12	--	mcd
			Green	8.0	15	--	
Peak Wavelength	λ_P		Red	--	635	--	nm
			Green	--	565	--	
Spectral Halfwidth	$\Delta\lambda$		Red	--	45	--	nm
			Green	--	30	--	
Viewing Angle	$2\Theta_{1/2}$		All	--	60	--	deg

Notes:
1. Forward voltage data tolerance: ±0.1V.
2. Luminous intensity data tolerance: ±15%.

TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES (Red)

Fig.1 Forward current vs. Forward Voltage

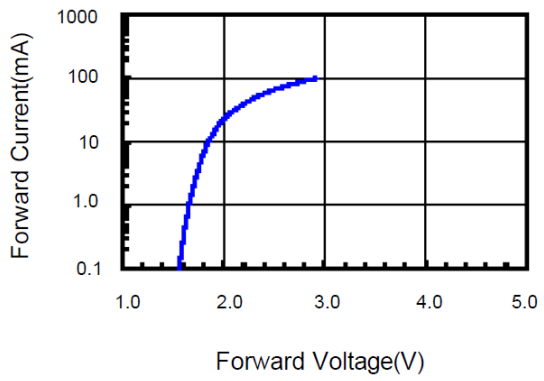


Fig.2 Relative Intensity vs. Forward Current

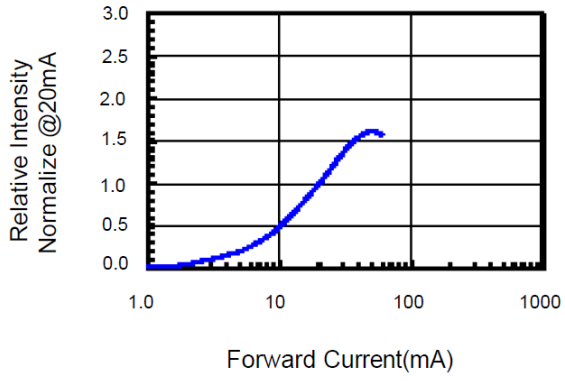


Fig.3 Forward Voltage vs. Temperature

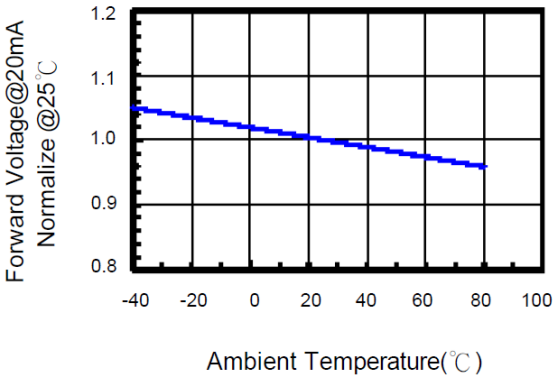


Fig.4 Relative Intensity vs. Temperature

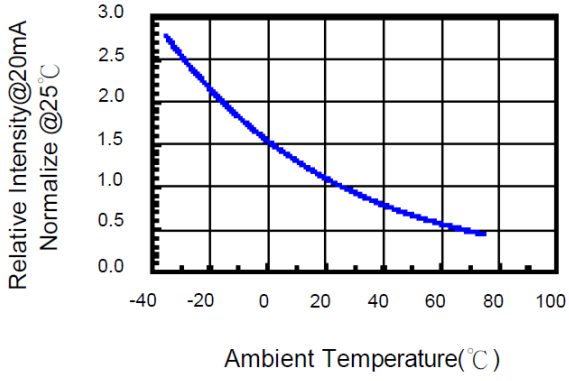
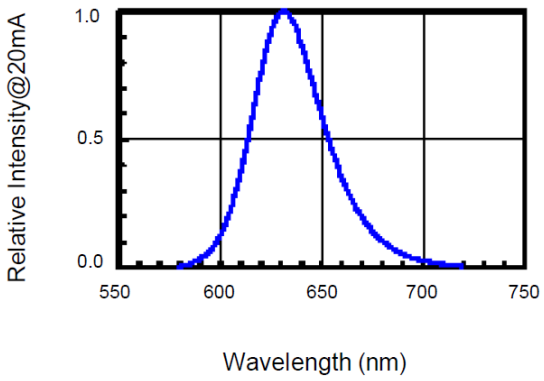


Fig.5 Relative Intensity vs. Wavelength



TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES (Green)

Fig.1 Forward current vs. Forward Voltage

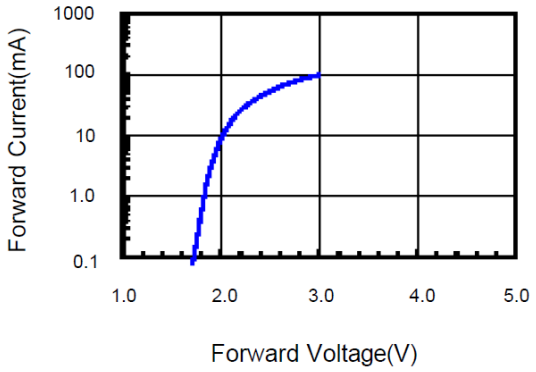


Fig.2 Relative Intensity vs. Forward Current

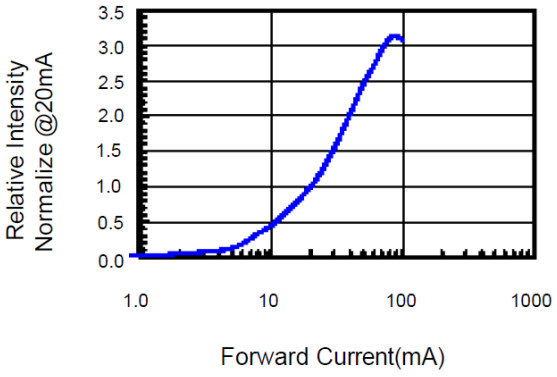


Fig.3 Forward Voltage vs. Temperature

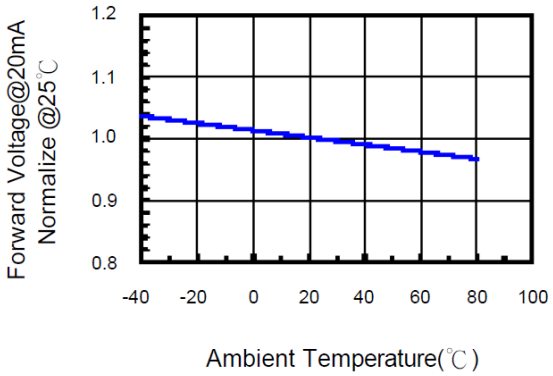


Fig.4 Relative Intensity vs. Temperature

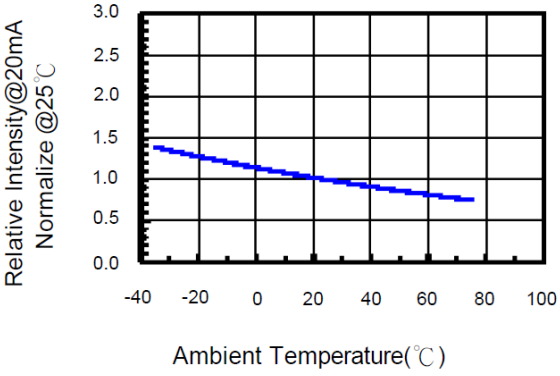
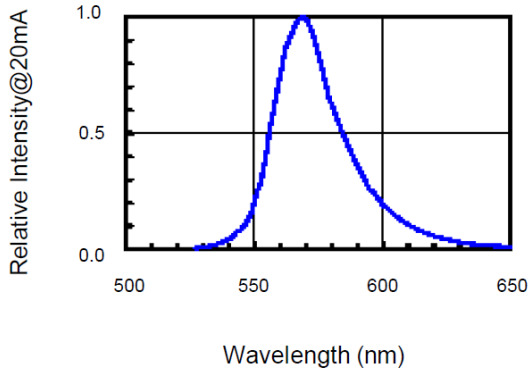
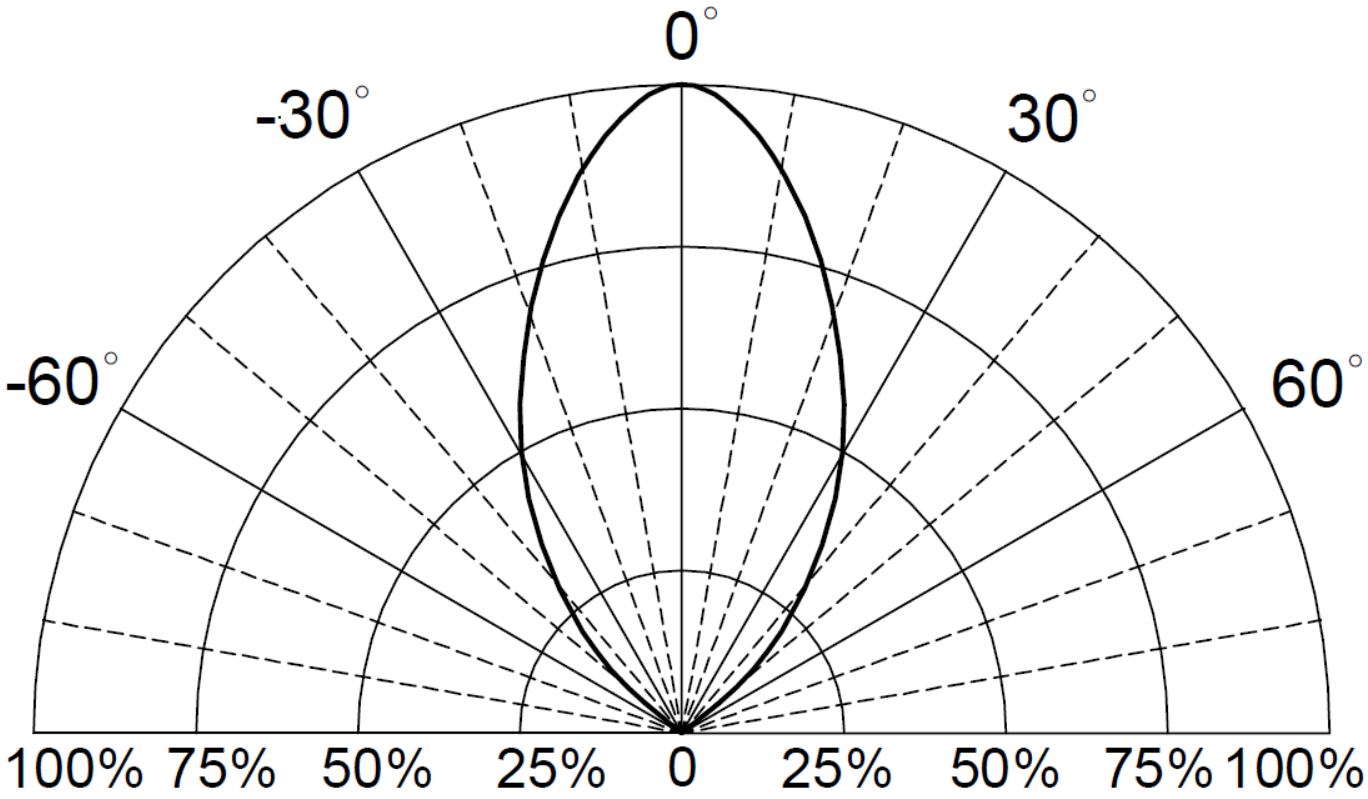


Fig.5 Relative Intensity vs. Wavelength



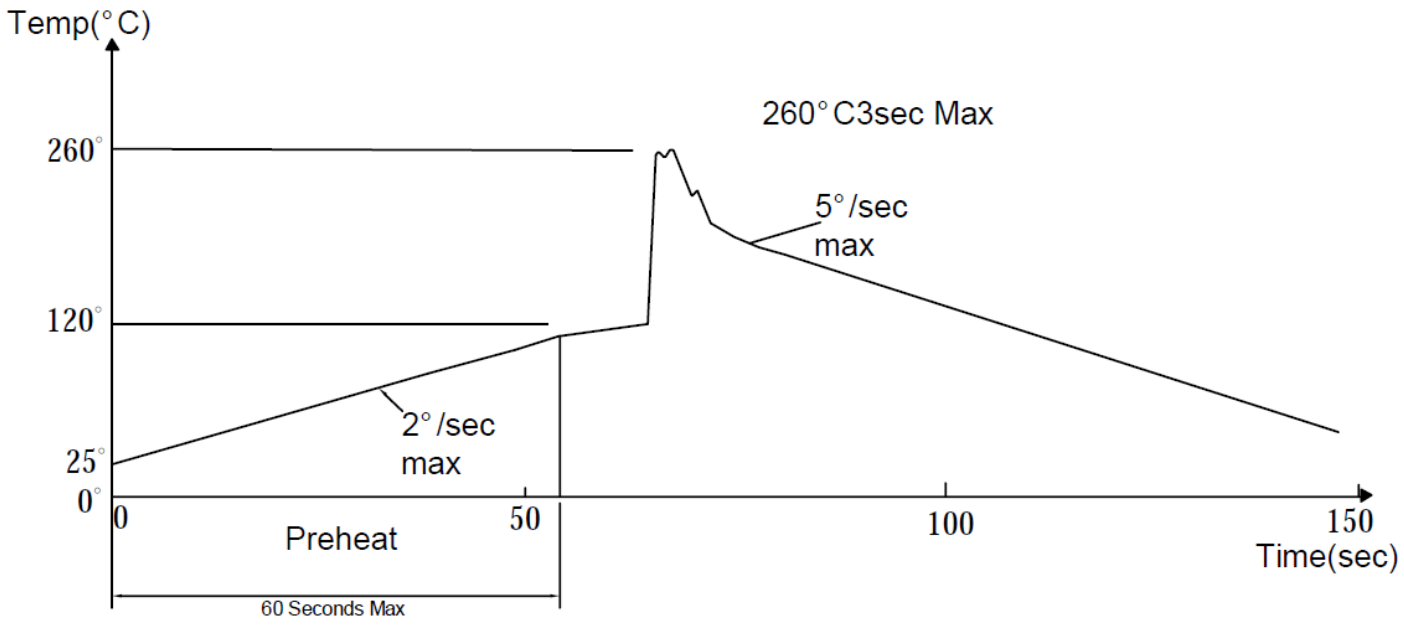
DIRECTIVE RADIATION



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)



Notes:
1. Wave solder should not be made more than one time.
2. Only select one of the soldering conditions as above.

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 detemining the resistance of a part in electrical and themal stressed.	MIL-STD-750: 1026 MIL-STD-883: 1005 JIS C 7021: B-1
High Temperature Storage Test	1.Ta=105℃±5℃ 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℃±5℃ 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℃±5℃ 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℃±5℃&-40℃±5℃ (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℃±5℃ 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℃±5℃ 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