

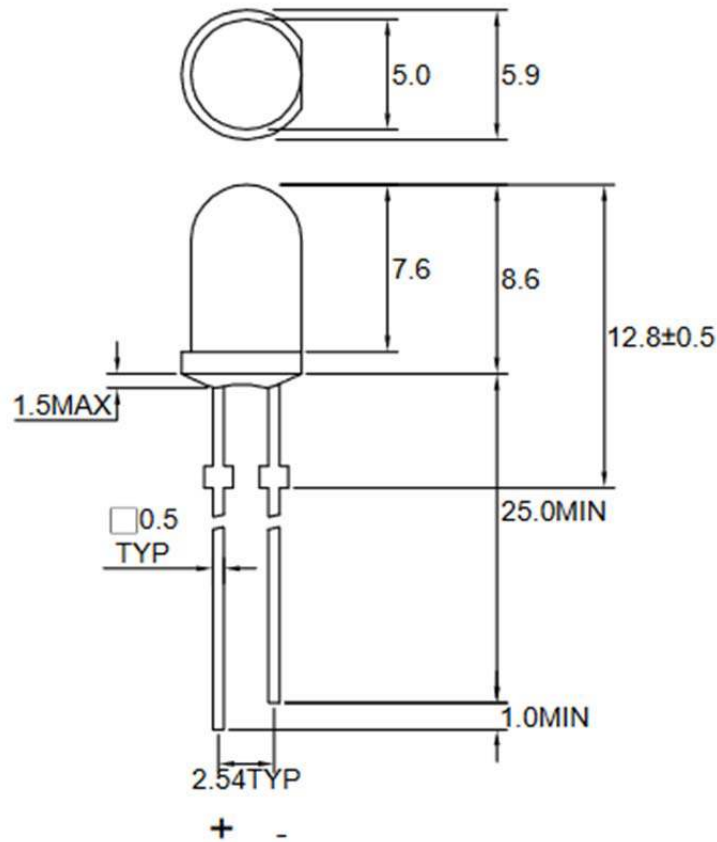


American Opto Plus LED Corp.

L513L-LWD10K34D

5mm White Diffused LED Lamp

PACKAGE DIMENSION



Notes:

1. All dimension are in millimeter tolerance is ± 0.25 mm unless otherwise noted.
2. Specifications are subject to change without notice.

Material	Color	
	Emitted	Lens
InGaN	White	White Diffused



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ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

Parameter	Symbol	Value	Unit
Forward Current	If	30	mA
Peak Forward Current Duty 1/10 @ 10KHz	Ifp	100	mA
Power Dissipation	Pd	120	mW
Reverse Current @ 5V	Ir	50	µA
Electrostatic Discharge	ESD	500	V
Operating Temperature Range	Topr	-20~+80	°C
Storage Temperature Range	Tstg	-30~+100	°C

Note: Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrostatic glove is recommended when handling these LEDs. All device, equipment and machinery must be properly grounded.

OPTICAL-ELECTRICAL CHARACTERISTICS

(Ta=25°C)

Parameter	Symbol	Test Condition	Value			Unit
			Min	Typ	Max	
Luminous intensity	Iv	IF = 20mA	1100	1800	--	mcd
Chromaticity Coordinates	x		--	0.28	--	--
	y		--	0.28	--	--
Forward Voltage	Vf		--	3.5	4.0	V
Viewing angle	2θ ½		--	34	--	Deg

Notes:

1. The forward voltage data did not including ±0.1V testing tolerance.
2. The luminous intensity data did not including ±15% testing tolerance.



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LUMINOUS INTENSITY CLASSIFICATION

Bin Code	Iv(mcd) at 20mA	
	Min	Max
A22	1100	1500
A23	1500	1800
A24	1800	2200
A25	2200	2700
A26	2700	3400

CHROMATICITY COORDINATES SPECIFICATIONS FOR BIN GRADING

Bin Code	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
A5	0.25	0.250	0.25	0.210	0.26	0.225	0.26	0.265
B1	0.26	0.265	0.26	0.225	0.27	0.240	0.27	0.280
B2	0.27	0.280	0.27	0.240	0.28	0.255	0.28	0.295
B3	0.28	0.295	0.28	0.255	0.29	0.270	0.29	0.310
B4	0.29	0.310	0.29	0.270	0.30	0.285	0.30	0.325
B5	0.30	0.325	0.30	0.285	0.31	0.300	0.31	0.340

Note: Color Coordinates Measurement allowance is ± 0.01 .

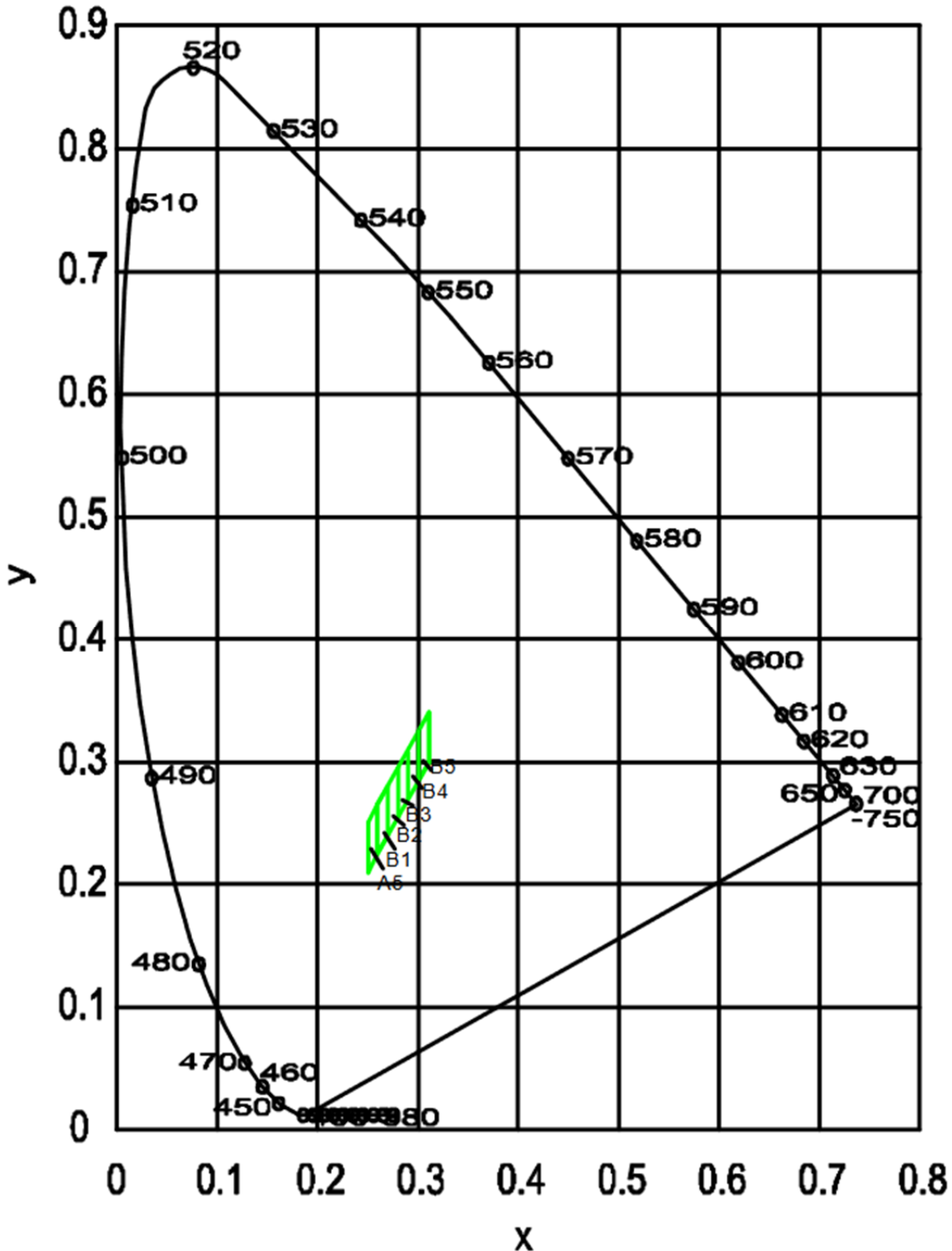


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CIE CHROMATICITY DIAGRAM





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ELECTRICAL-OPTICAL CHARACTERISTIC CURVES

(Ta=25°C)

Fig.1 Forward current vs. Forward Voltage

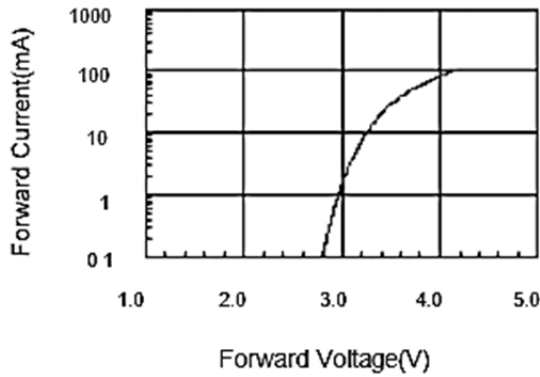


Fig.2 Relative Intensity vs. Forward Current

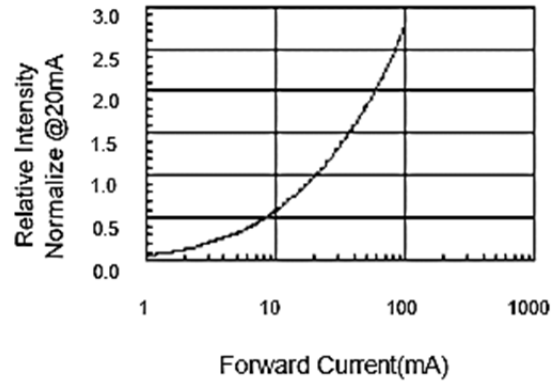


Fig.3 Forward Voltage vs. Temperature

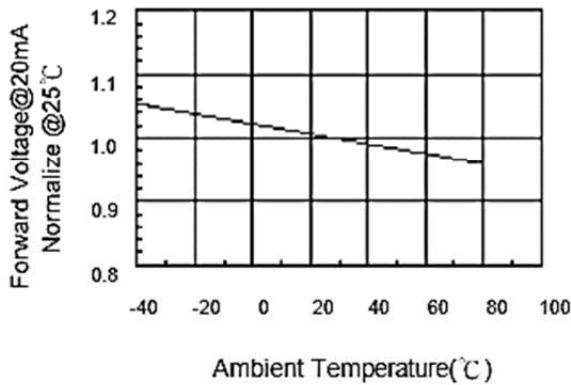


Fig.4 Relative Intensity vs. Temperature

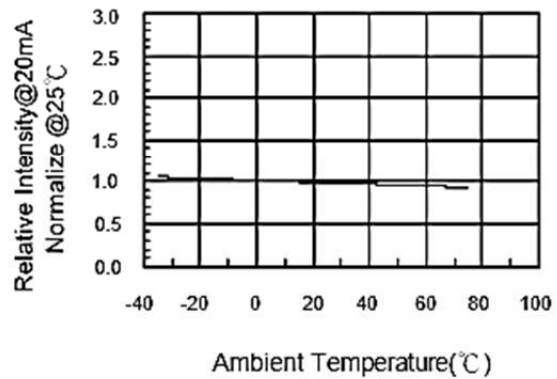
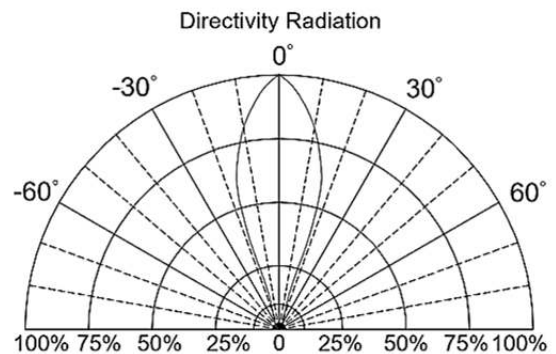
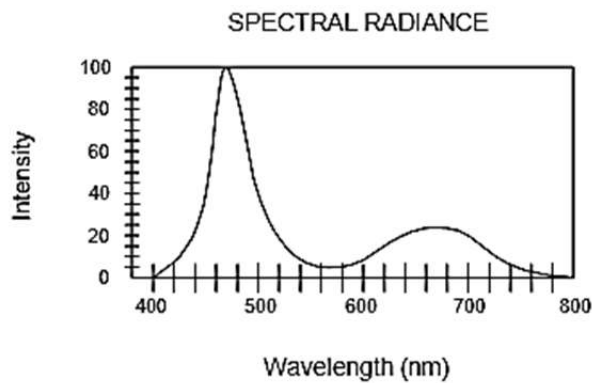


Fig.5 Luminous Spectrum (Ta=25°C)





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RECOMMENDED SOLDERING CONDITIONS

1. Iron:

Soldering Iron: 30W Max

Temperature: 350°C Max

Soldering time: 3 Seconds Max (one time only)

Distance: 2mm (from solder joint body)

2. Wave Soldering Profile

Dip Soldering

Preheat: 120°C Max

Preheat Time: 60 Seconds Max

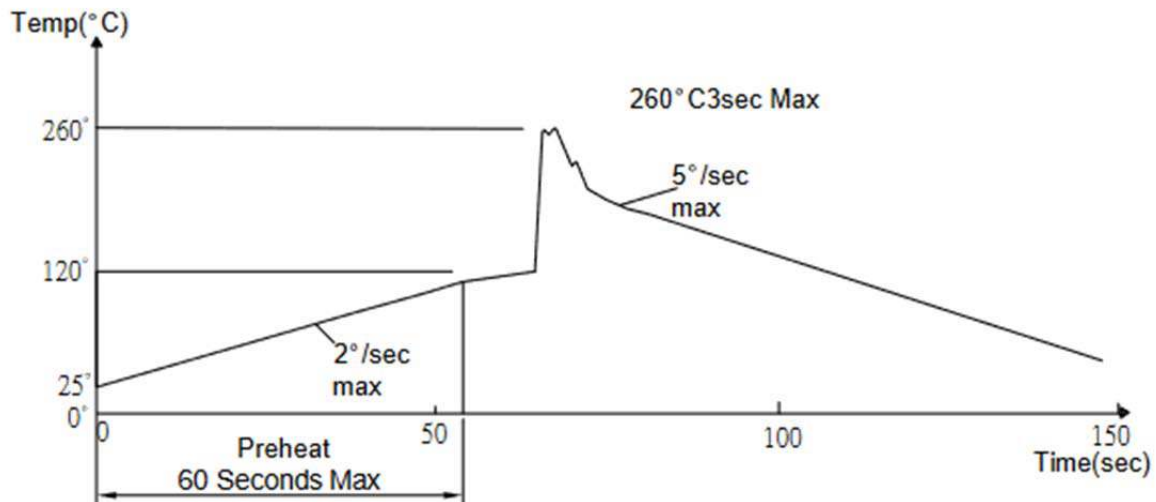
Ramp-up: 2°C/sec Max

Ramp-down: -5°C/sec Max

Solder Bath: 260°C Max

Dipping Time: 3 Seconds Max

Distance: 2mm (from solder joint 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=245 °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