



TOYO LED ELECTRONICS LIMITED

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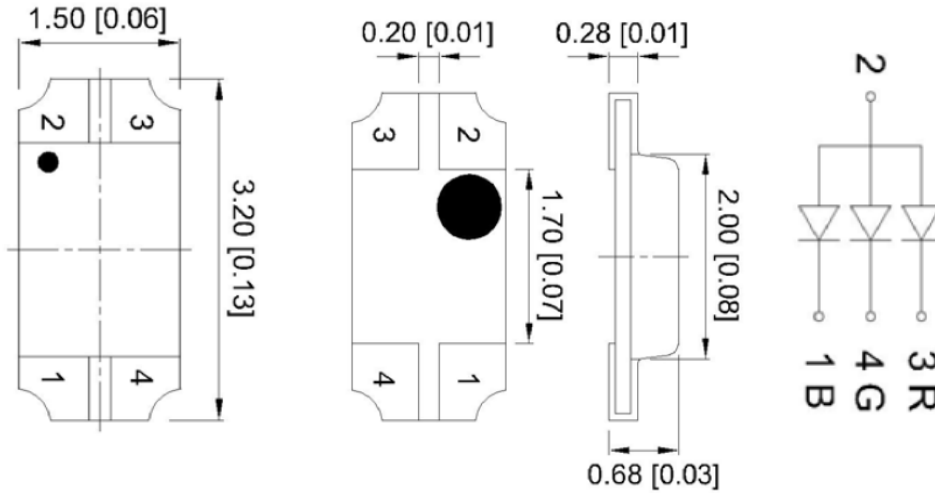


P/N: TY-A1206RGB1

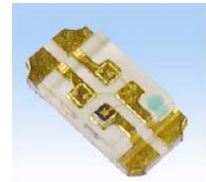
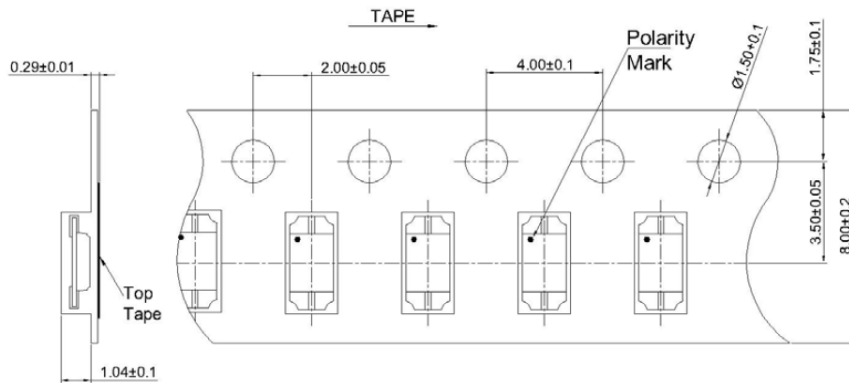
1206 Package 3.2*1.6mm Surface Mount LEDs Series

PACKAGE DIMENSION

Package Dimensions of Device

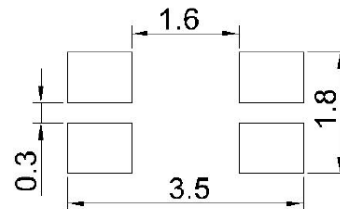
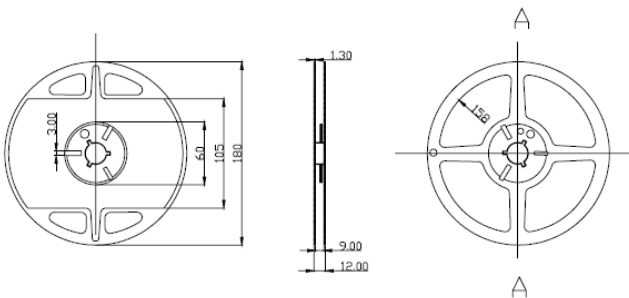


Tape Specification: 3,000pcs per reel



Package Dimensions of Reel

Recommended Soldering Pad Dimensions



NOTES:

1. All dimensions are in millimeter(inch);
2. Tolerance is ±0.2mm(0.008") especially other specified;
3. Specifications are subject to change without notice.



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◆ Features

- 3.2mm x 1.6mm SMT LED, 0.68mm thickness.
- Low power consumption.
- One red chip, one green chip and one blue chip in one package.
- Can produce any color in visible spectrum, including white light.
- Lens color: **Water Clear**

◆ Description

The red source color devices are made with DH GaAsP/GaP on GaAs substrate Light Emitting Diode.

The green source color devices are made with DH GaP on GaAs substrate Light Emitting Diode. The Static electricity and surge damage the LEDs.

The Blue source color devices are with GaN on SiC Light Emitting Diode.

◆ Absolute Maximum Ratings(Ta=25C°)

Item	Symbol	Maximum			Unit
		R	G	B	
Power Dissipation	P _D	70	95	114	mW
Continuous Forward Current	I _{Fmax}	30	25	30	mA
Peak Forward Current (1/10 Duty Cycle 0.1ms Pulse Width)	I _{FP}	185	150	160	mA
Reverse Voltage	V _R	5			V
Operating Temperature Range	T _{opr}	-40 to +80			°C
Storage Temperature Range	T _{stg}	-40 to +80			°C

◆ Electrical / Optical Characteristics(Ta=25C°)

Item	Symbol	Condition	Min.			Typ.			Max.			Unit
			R	G	B	R	G	B	R	G	B	
Forward Voltage	V _F	I _F =20mA	1.6	3.0	3.0	1.9	3.2	3.2	2.1	3.4	3.4	V
Luminous Intensity	I _v	I _F =20mA	160	600	210	200	800	250	--	--	--	mcd
Peak Emission Wavelength	λ _P	I _F =20mA	--	--	--	630	530	475	--	--	--	nm
Dominant Wavelength	λ _D	I _F =20mA	621	515	465	625	520	470	630	525	475	nm
Viewing Angle	2θ _{1/2}	I _F =20mA	--	--	--	120			--	--	--	deg
Capacitance	C	V _F =0V; f=1MHz	--	--	--	35	45	110	--	--	--	pF
Reverse Current	I _R	V _R =5V	--	--	--	5			--	--	--	uA

θ_{1/2} is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.



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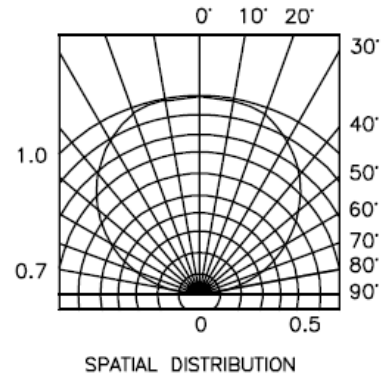
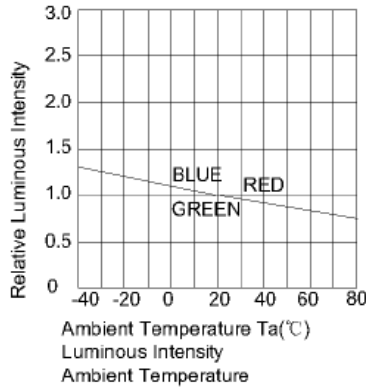
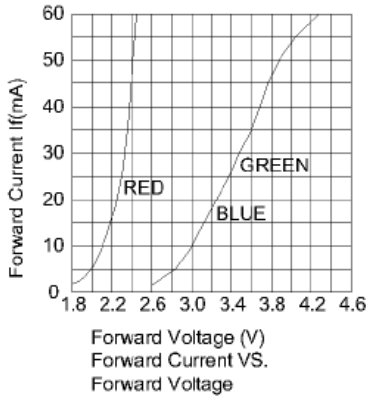
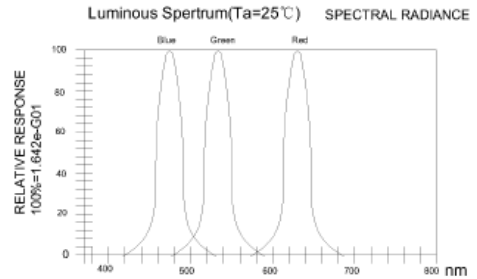
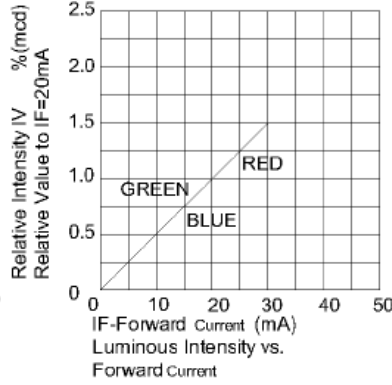
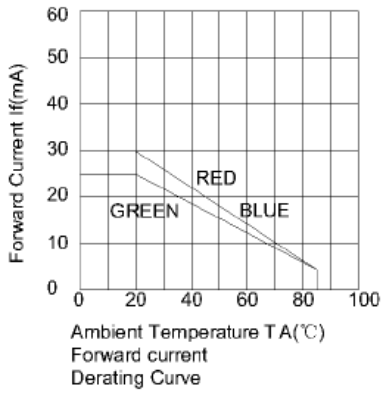
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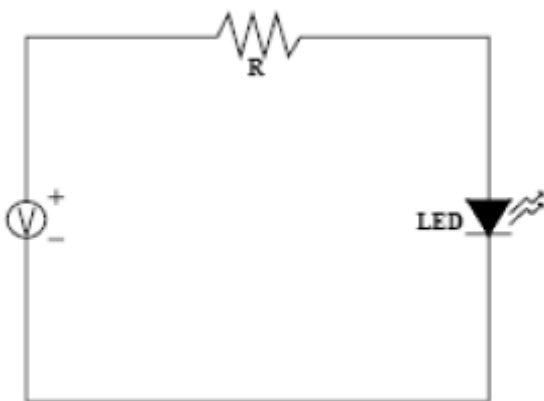
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Typical Electro-Optical Characteristics Curves



Test Circuit





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◇ Reliability Test Items And Conditions

NO.	Item	Test Condition	Test Hr/cycle/time	Sample Q'ty	Ac/Re
1	Reflow	TEMP:260°C±5°C; Min. 5sec	6 min	22pcs	0/1
2	Temperature Cycle	H: +100°C 15mins to (5mins) L: -40°C 15mins	300 cycles	22pcs	0/1
3	Thermal Shock	H: +100°C 15mins to (10sec) L: -10°C 15mins	300 cycles	22pcs	0/1
4	High Temperature Storage	TEMP: +100°C	1000 hrs	22pcs	0/1
5	Low Temperature Storage	TEMP: -40°C	1000 hrs	22pcs	0/1
6	DC Operating Life	IF=20mA	1000 hrs	22pcs	0/1
7	High Temperature	85°C	1000 hrs	22pcs	0/1
8	High Humidity	85%R.H.	1000 hrs	22pcs	0/1

SMT Reflow Soldering Instructions

Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and second soldering process.

