

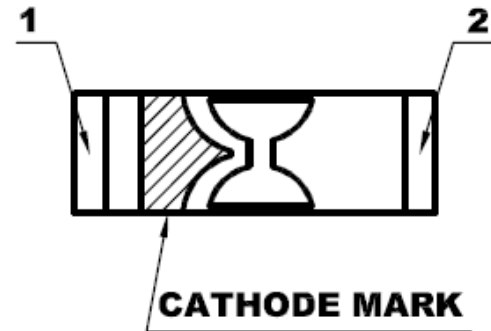
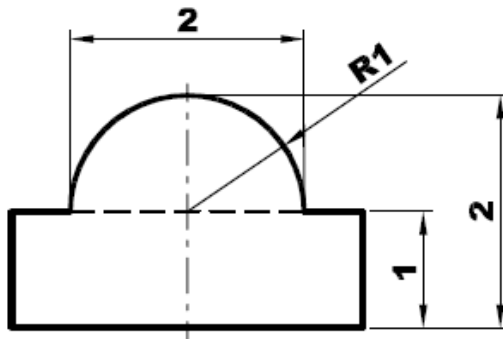
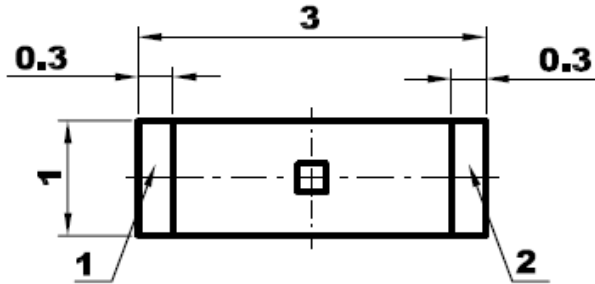


# American Opto Plus LED L120BC-TR

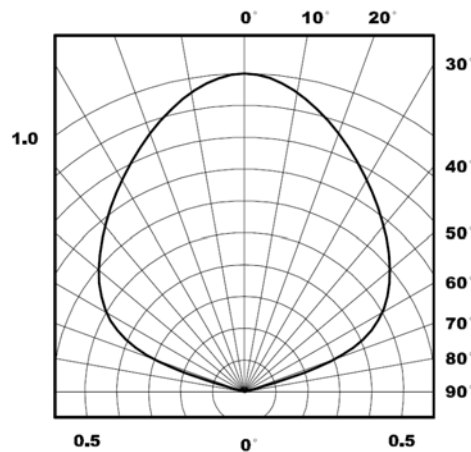
3.0 x 2.0 x 1.0mm SMD LED, Right Angle Type

- ❖ 3.0 x 2.0 x 1.0mm SMD LED
- ❖ RIGHT ANGLE TYPE
- ❖ 120° VIEWING ANGLE
- ❖ LOW CURRENT REQUIREMENT

## Package Dimension



Notes: Unit = mm, Tolerance =  $\pm 0.25\text{mm}$



Viewing Angle  $2\theta_{1/2} = 120^\circ$

Part Number	Chip		Lens Type	I <sub>v</sub> (I <sub>F</sub> = 20mA)	
	Material	Emitted Color		Min (mcd)	Typ (mcd)
L120BC-TR	SiC	Blue	Water Clear	5	13



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Absolute maximum ratings (TA=25 °C)		(SiC)	Unit
Reverse voltage	$V_R$	5	V
Forward current	$I_F$	30	mA
Forward current(Peak) 1/10 Duty Cycle,0.1ms Pulse Width	$I_{FP}$	200	mA
Power dissipation	$P_d$	135	mW
LED LAMPS:			
Operating temperature	$T_{OP}$	-40~+85	°C
Storage temperature	$T_{ST}$	-40~+85	°C
LED DISPLAYS:			
Operating temperature	$T_A$	-40~+85	°C
Storage temperature	$T_{STG}$	-40~+85	°C

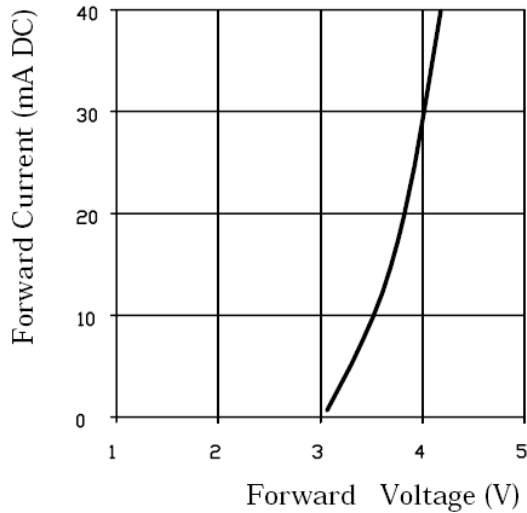
Operating characteristics (TA=25 °C)		(SiC)	Unit
Forward voltage(typ.)	$V_F$	3.8	V
$I_F = 20mA$			
Forward voltage(max.)	$V_F$	4.5	V
$I_F = 20mA$			
Reverse current(max.)	$I_R$	10	uA
$V_R = 5V$			
Wavelength at dominant emission(typ.)	$\lambda_D$	460	nm
$I_F = 20mA$			
Wavelength at peak emission(typ.)	$\lambda_P$	430	nm
$I_F = 20mA$			
Spectral line half-width	$\Delta \lambda$	25	nm
$I_F = 20mA$			
Capacitance	C	100	pF
$V_F = 0V, f = 1MHz$			



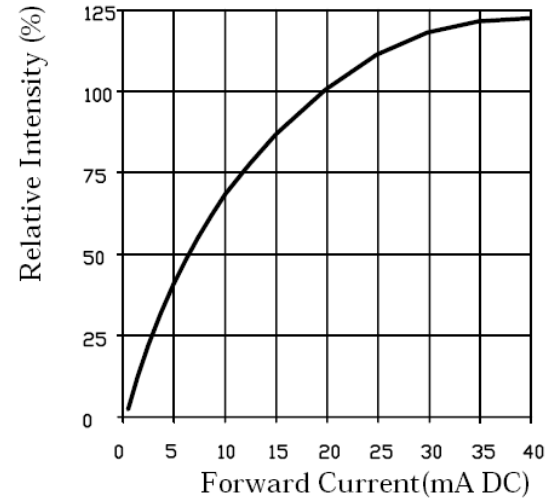
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3.0 x 2.0 x 1.0mm SMD LED, Right Angle Type

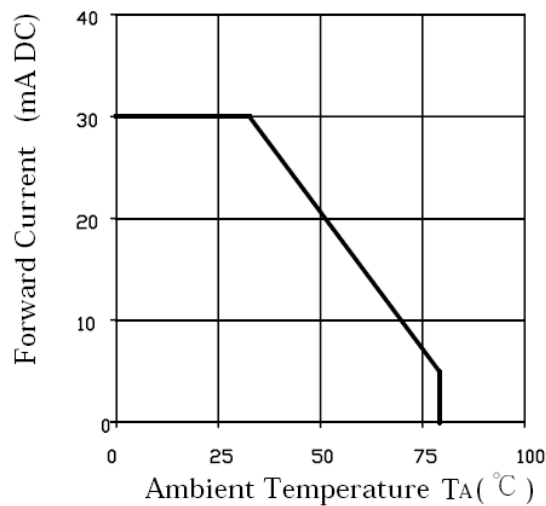
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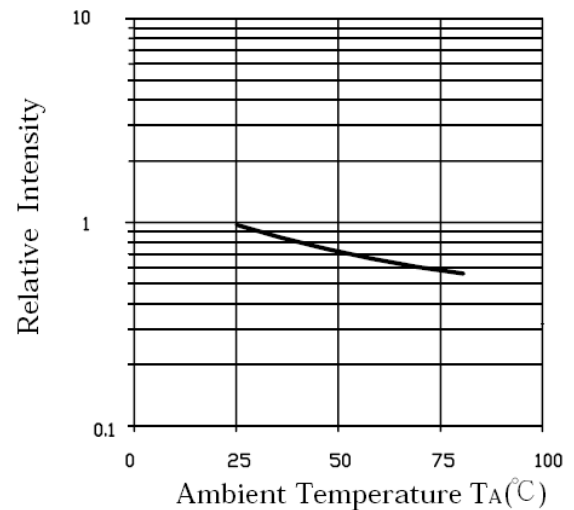
Forward Current Vs.  
Forward Voltage



Relative Intensity Vs.  
Forward Current



Forward Current  
Derating Curve



Luminous Intensity Vs.  
Ambient Temperature

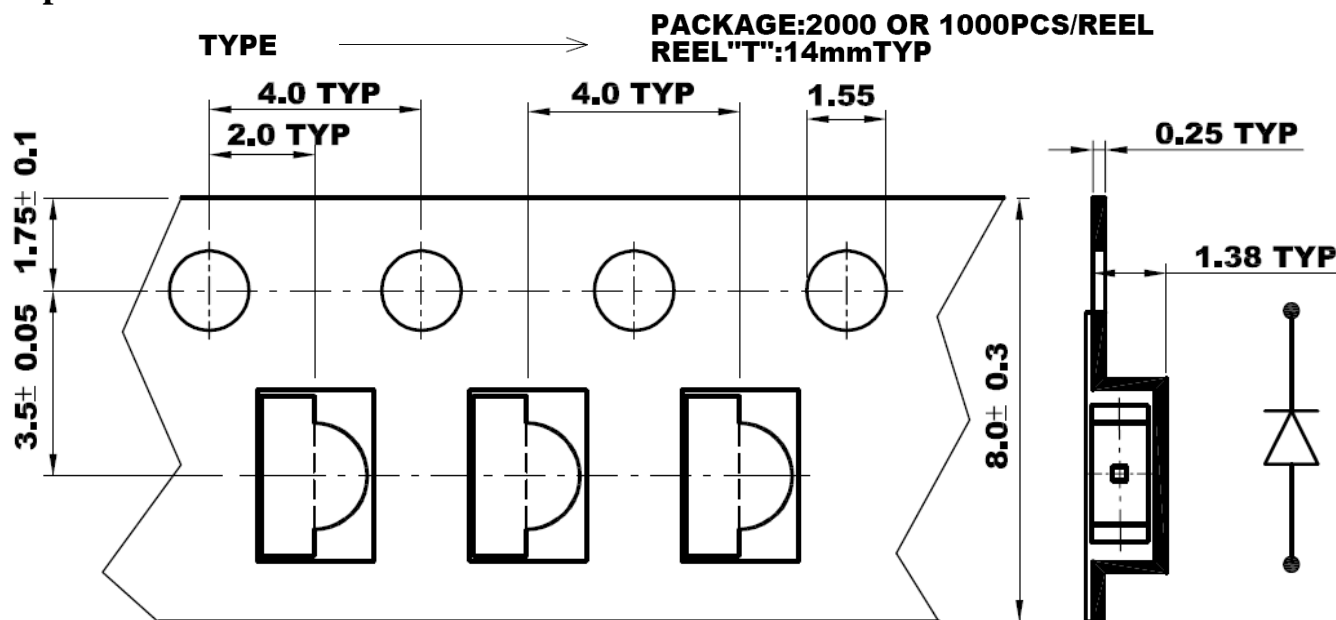


# American Opto Plus LED L120BC-TR

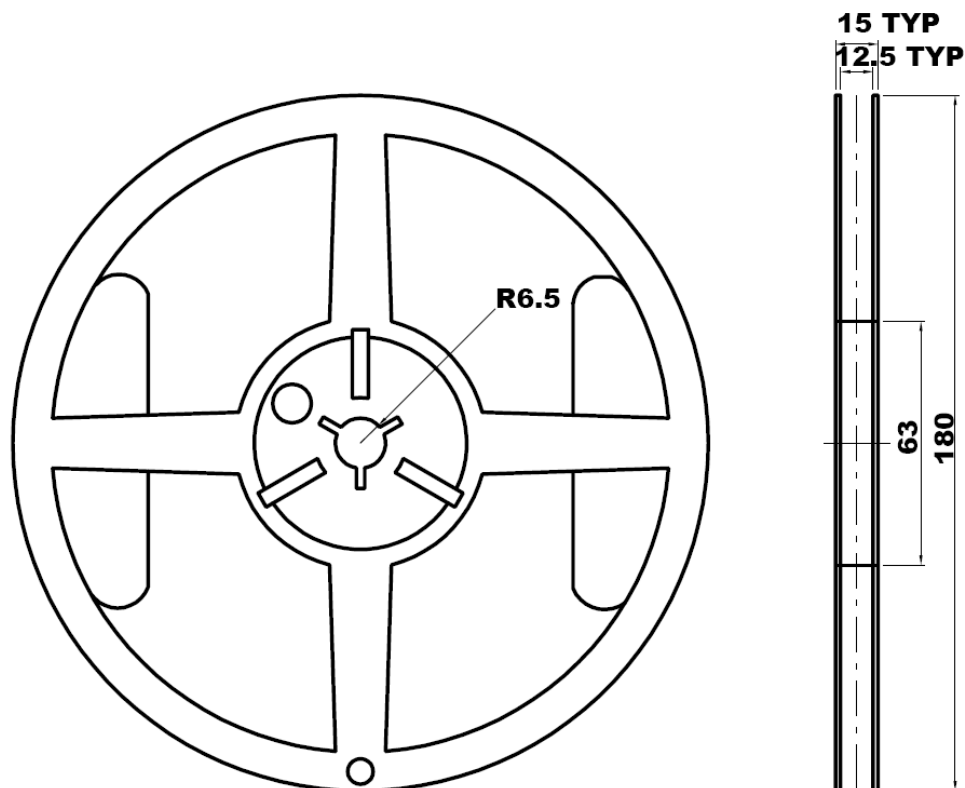
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## Tape Dimension



## Reel Dimension



Notes: Unit = mm, Tolerance =  $\pm 0.25$ mm

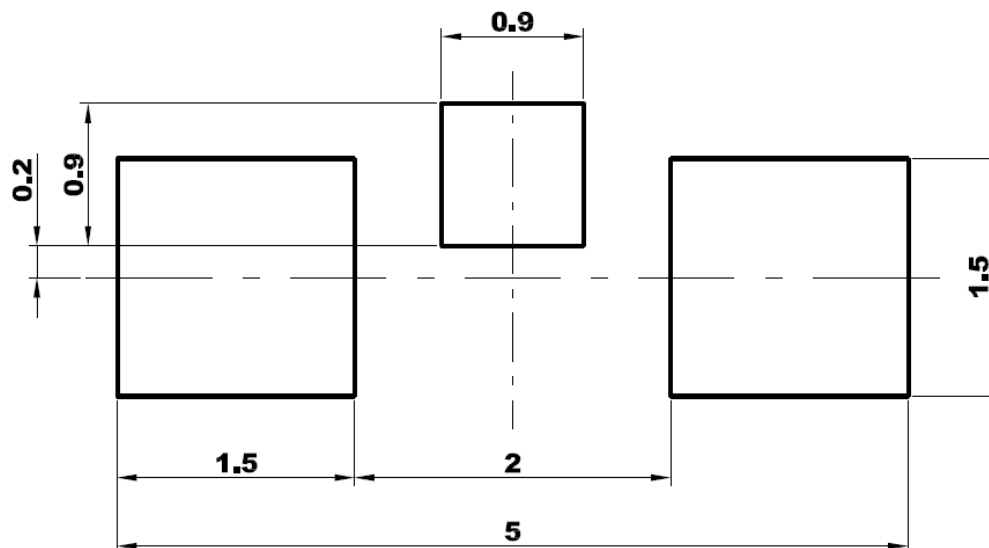


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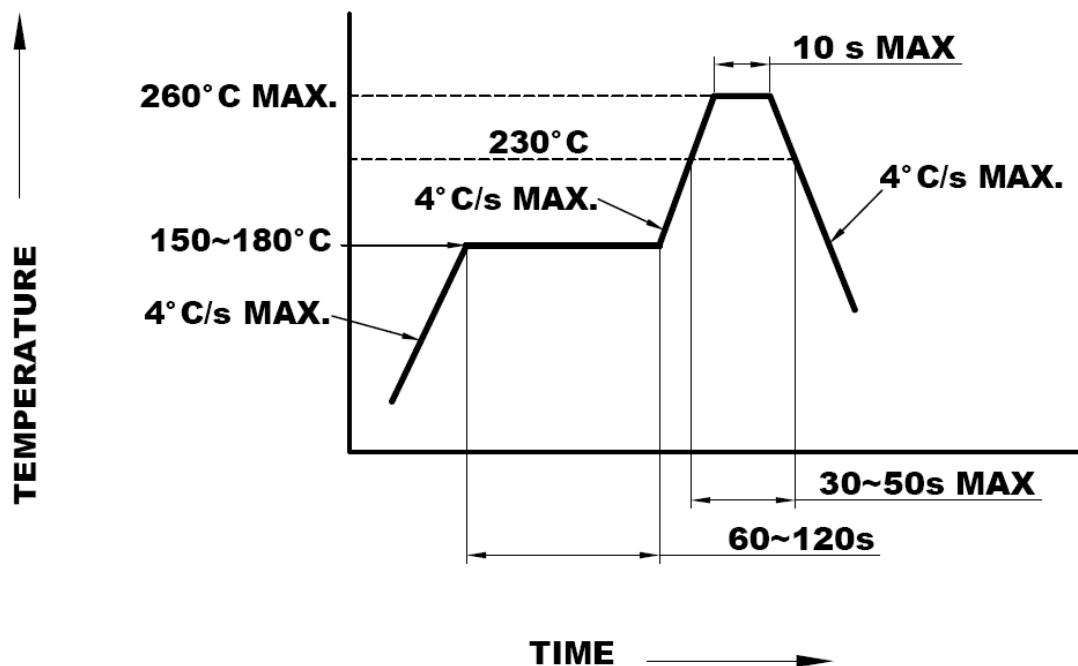
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## Reflow Soldering Pattern (Unit = mm)



## SMD Reflow Soldering Instructions



**SMT Reflow soldering 260°C one cycle**



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### SMD Handling and Application Precautions

#### STORAGE

1. It is recommended to store the devices in accordance with the following conditions:
  - a. Humidity: 60% RH Max
  - b. Temperature: 5°C ~ 30°C (41°F ~ 86°F)
2. Shelf life in sealed bag: 12 months at < 5°C ~ 30°C and < 60% RH. After the package is opened, products should be used within 72 hours, or they should be kept at ≤ 30% RH in zip-locked sealed bags.

#### DRY PACK AND BAKING

SMD LEDs are MOISTURE SENSITIVE devices. Avoid absorbing moisture at any time during transportation and/or storage. It is recommended to bake before soldering when the pack is unsealed after 72 hours, or any suspicious moisture being found. Bake devices in accordance with the following conditions:

- 50 ± 3°C x (12 ~ 24 hours) and < 5% RH, tape and reel type
- 100 ± 3°C x (45 min ~ 1 hour), loose packing type, OR
- 130 ± 3°C x (15 min ~ 30 min), loose packing type

#### ELECTROSTATIC DISCHARGE (ESD) PROTECTION

Materials with GaN, InGaN, AlInGaP are STATIC SENSITIVE devices. They will be packed in anti-static bags. ESD protection must be deliberately observed from the initial design stage. Electrostatic discharge may result in severe malfunction of devices. In the event of manual working in process, make sure the devices are well-protected from ESD at any time. Surge before and during handling of products.