

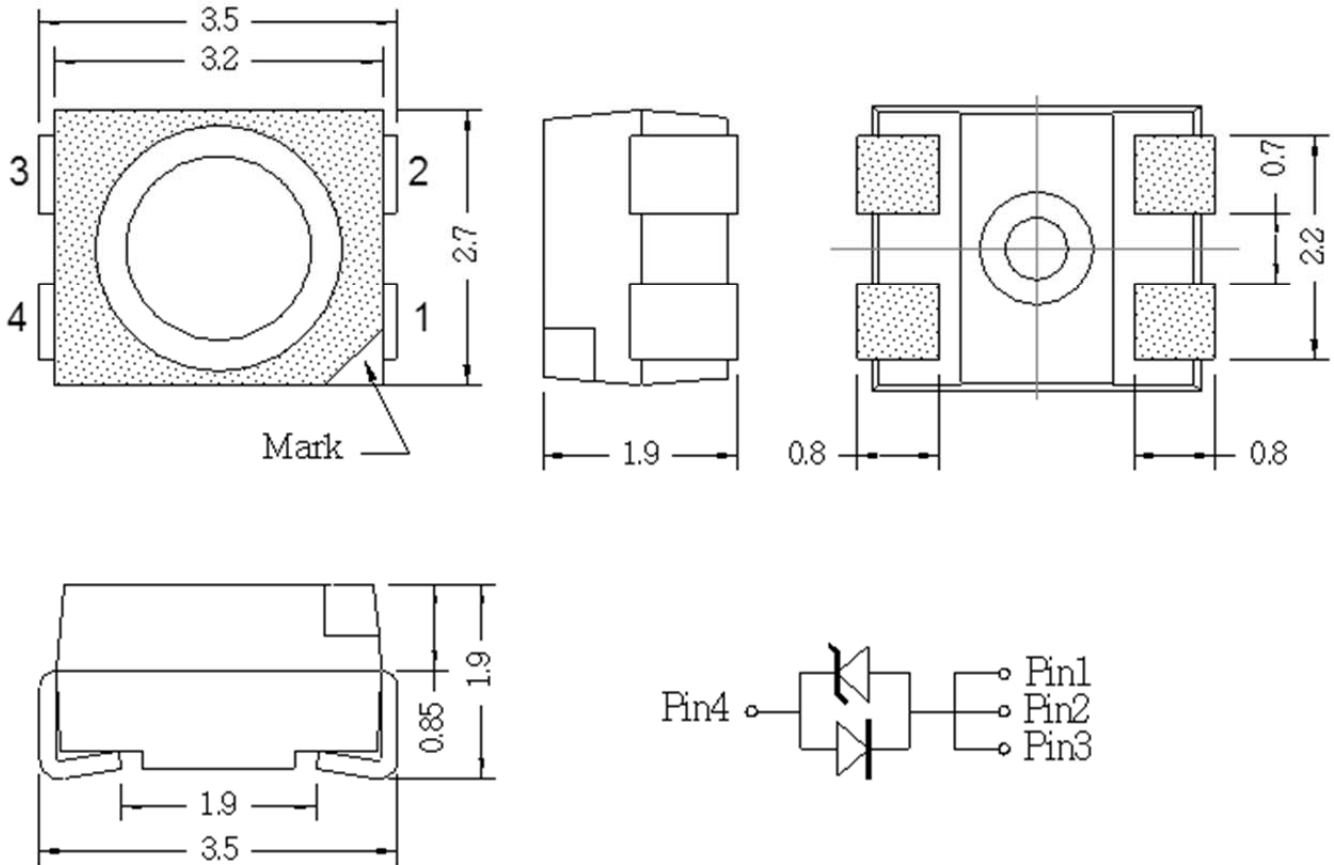


American Opto Plus LED Corp.

SMP-MWC-Z-TD

3.5 X 2.8 X 1.9mm PLCC4

PACKAGE OUTLINES



Item	Materials
Package	Heat-Resistant Polymer
Encapsulating Resin	Silicone
Electrodes	Ag Plating Copper Alloy

Chip Material	Chip Emitted	Viewing Angle
InGaN	White	120°

Notes:

1. All dimensions are in millimeters (inches);
2. Electrical Connection between all Cathodes is Recommended



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ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

Parameter	Symbol	Max Rating	Unit
Power Dissipation	P_D	380	mW
Peak Pulsed Forward Current	I_{FP}	150	mA
DC Forward Current	I_F	100	mA
Reverse Voltage	V_R	5	V
Junction Temperature	T_J	≤ 115	°C
Junction / Solder Point	$R_{th J_s}$	172	°C/W
Junction / Ambient	$R_{th J_a}$	200	°C/W
ESD Threshold (HBM)	ESD	4000	V
Operating Temperature Range	T_{OPR}	-30~+100	°C
Storage Temperature Range	T_{STG}	-40~+100	°C
Solder Temperature	T_{SOL}	265°C for 10 sec	

IFP Conditions: Pulse Width ≤ 10 sec. and Duty $\leq 1/10$

$R_{th J_a}$ results from mounting on PC board FR4 (PCB size 16*10mm)

OPTICAL-ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Forward Voltage	V_F	$I_F = 30mA$	--	2.8	3.3	V
Luminous Intensity	I_v	$I_F = 30mA$	2500	3200	--	mcd
Luminous Flux	Φ_V	$I_F = 30mA$	7.0	9.0	--	lm
Chromaticity Coordinate	X	$I_F = 30mA$	--	0.31	--	--
Chromaticity Coordinate	Y	$I_F = 30mA$	--	0.32	--	--

Note: Luminous intensity tolerance is $\pm 10\%$



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Luminous Intensity Bin Table

IF=30mA

Rank name	Min (mcd)	Max (mcd)
1	2400	3100
2	3100	4000
3	4000	5200

Tolerance for each bin limit is $\pm 15\%$

Voltage Bin Table

IF=30mA

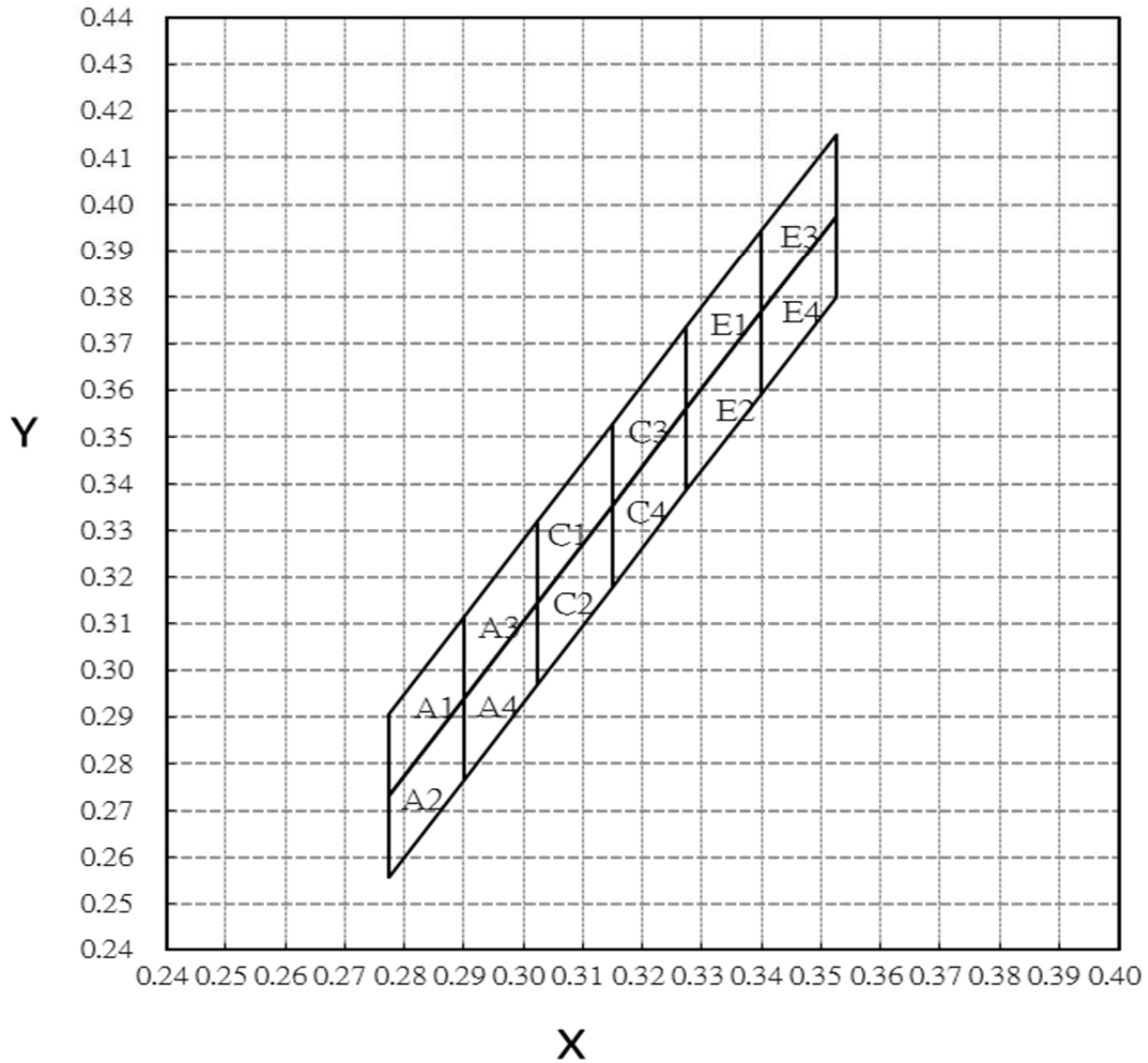
Rank name	Min (V)	Max (V)
A	2.7	2.8
B	2.8	2.9
C	2.9	3.0
D	3.0	3.1
E	3.1	3.2
F	3.2	3.3

Tolerance for each bin limit is $\pm 0.5V$



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Chromaticity Diagram





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Color Ranks

A1					A2				
x	0.2775	0.2900	0.2900	0.2775	x	0.2775	0.2900	0.2900	0.2775
y	0.2732	0.2939	0.3114	0.2907	y	0.2557	0.2764	0.2939	0.2732
A3					A4				
x	0.2900	0.3025	0.3025	0.2900	x	0.2900	0.3025	0.3025	0.2900
y	0.2939	0.3146	0.3321	0.3114	y	0.2764	0.2971	0.3146	0.2939
C1					C2				
x	0.3025	0.3150	0.3150	0.3025	x	0.3025	0.3150	0.3150	0.3025
y	0.3146	0.3354	0.3529	0.3321	y	0.2971	0.3179	0.3354	0.3146
C3					C4				
x	0.3150	0.3275	0.3275	0.3150	x	0.3150	0.3275	0.3275	0.3150
y	0.3354	0.3561	0.3736	0.3529	y	0.3179	0.3386	0.3561	0.3354
E1					E2				
x	0.3275	0.3400	0.3400	0.3275	x	0.3275	0.3400	0.3400	0.3275
y	0.3561	0.3768	0.3943	0.3736	y	0.3386	0.3593	0.3768	0.3561
E3					E4				
x	0.3400	0.3525	0.3525	0.3400	x	0.3400	0.3525	0.3525	0.3400
y	0.3768	0.3975	0.4150	0.3943	y	0.3593	0.3800	0.3975	0.3768

Notes:

1. One delivery will include several color ranks and I_V ranks of products. The quantity-ratio of the different rank is decided by American Opto Plus LED Corp.
2. Color Coordinates measurement allowance is ± 0.01 .



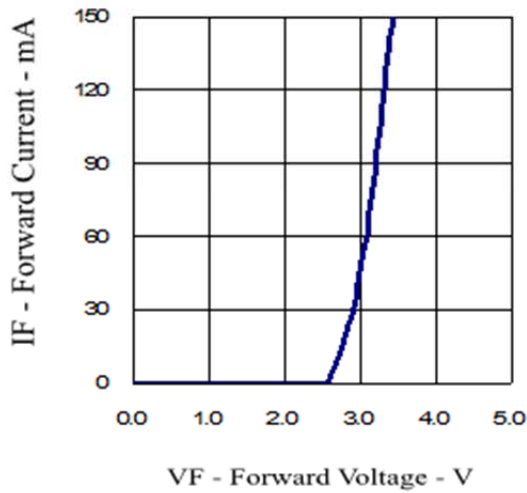
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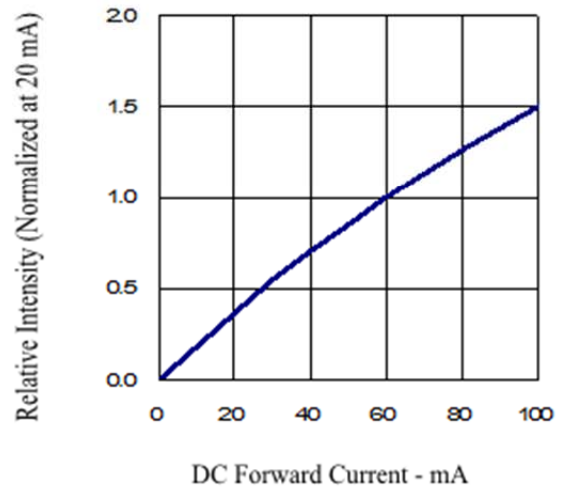
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OPTICAL CHARACTERISTIC CURVES

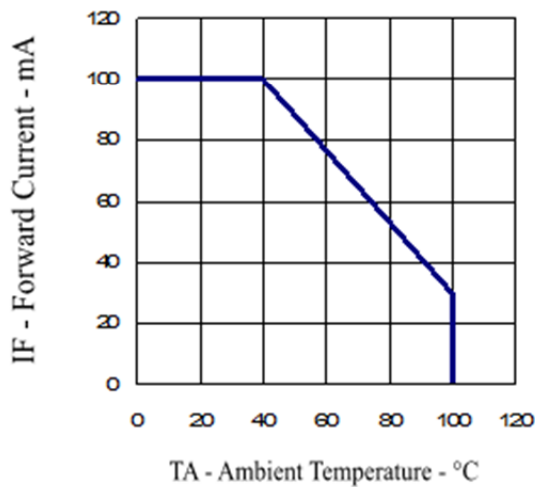
Forward Current vs. Forward Voltage



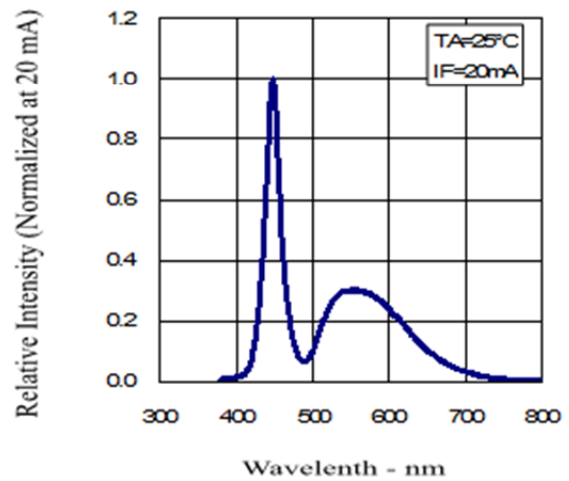
Relative Intensity vs. Forward Current



Forward Current vs. Ambient Temperature



Relative Intensity vs. Wavelength



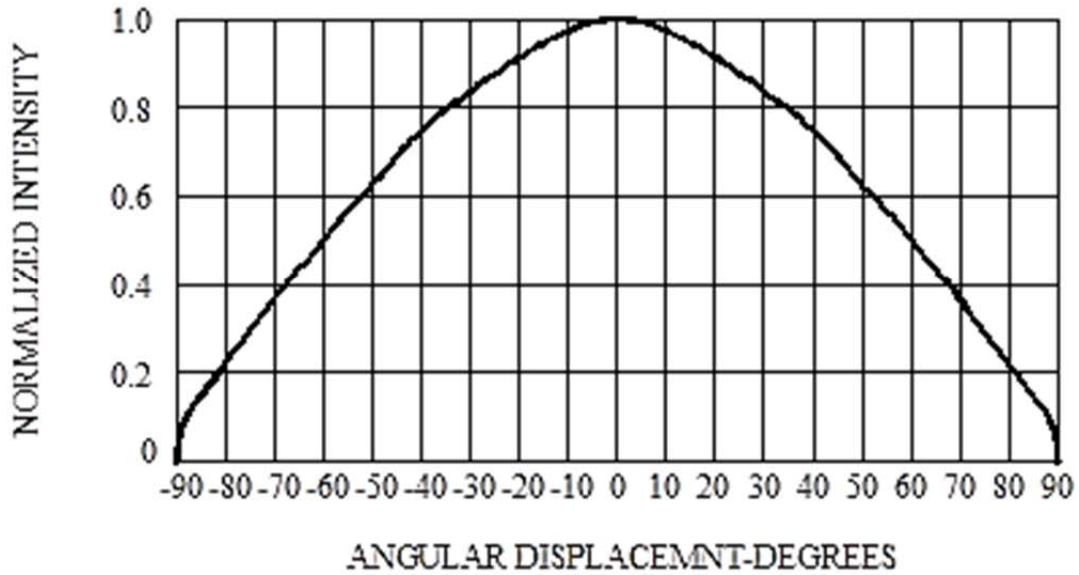


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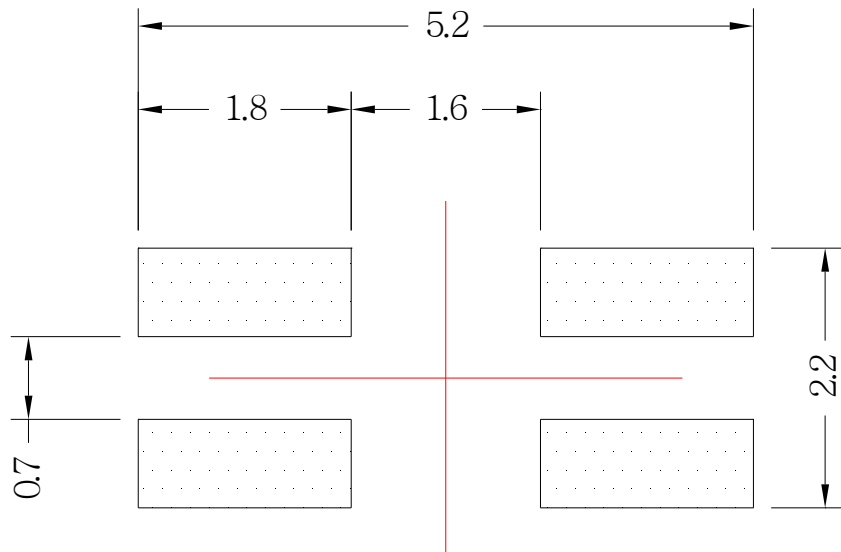
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Radiation Pattern



Recommended Soldering Pad Pattern



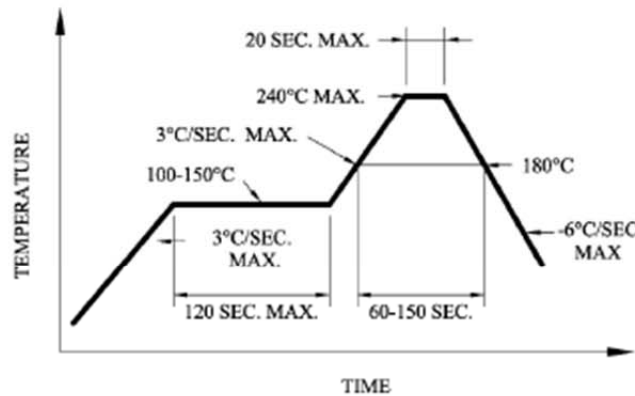


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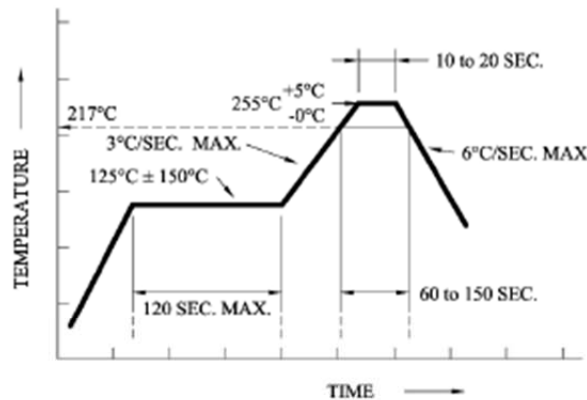
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Soldering Conditions



Recommended reflow soldering profile



Recommended Pb-free reflow soldering profile.

- Repairing should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used. It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.
- Reflow soldering should not be done more than two times.
- When soldering, do not put stress on the LEDs during heating.
- After soldering, do not warp the circuit board.

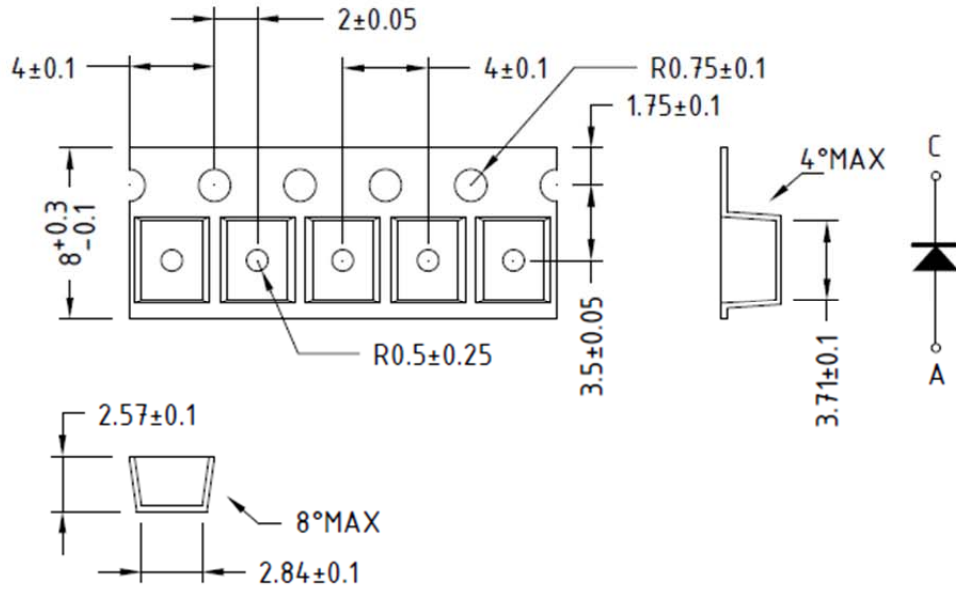


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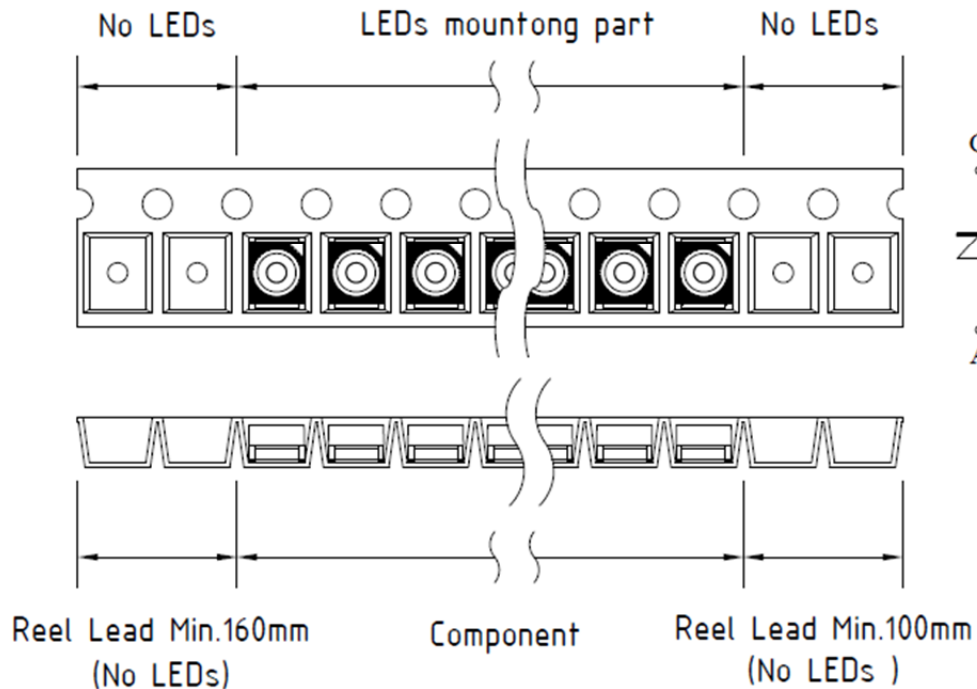
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Tape Dimension



Tape Leader and Trailer Dimension

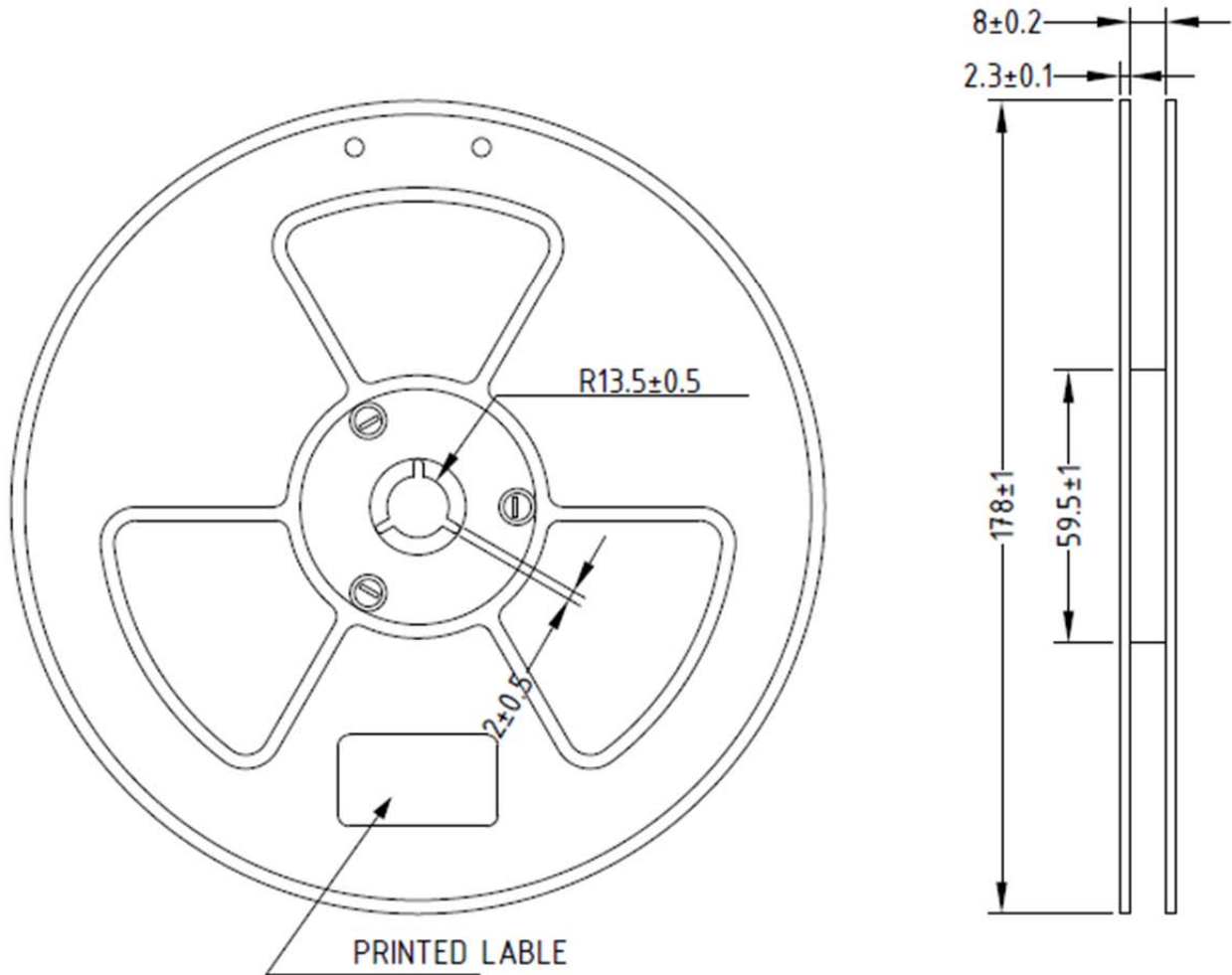


USER FEED DIRECTION



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Reel Dimension



Notes:

1. Available in 8mm carrier tape on 7 inch reel (2000 pieces)
2. Baking is required under the following conditions:
The pack has been opened for more than four weeks.
Baking recommended conditions:
 60 ± 5 °C for 20 hours.