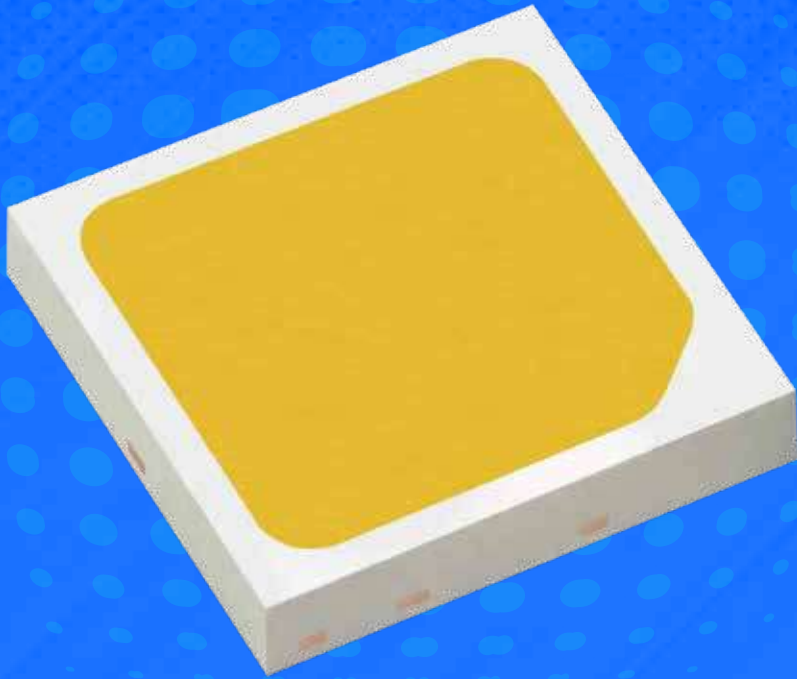




The Brightest LED



DATASHEET

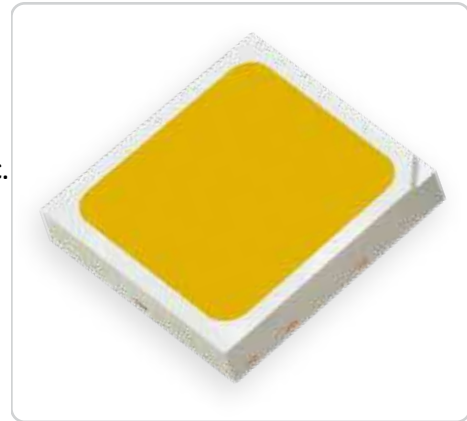
ES-E3030-106V-XX-XXX

ES-E3030-106V-XX-XXX Datasheet



This is EMC package 3030 LED Light Source is a energy efficient device which can handle high thermal and high driving current. The small package outline and high intensity make it an ideal choice for LED panel light, LED backlighting and Outdoor lighting etc.

The White Power LED is available in the range of color temperature from 2700K to 6500K. This part has a foot print that is compatible to most of the same size LED in the market today.



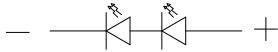
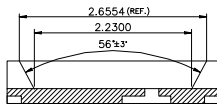
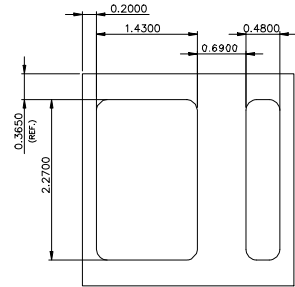
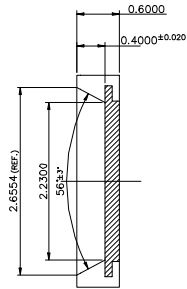
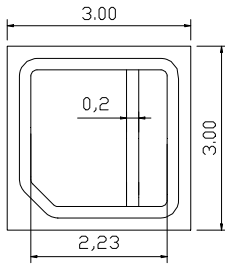
FEATURES

- Available in Cool White, Neutral White and Warm White color
- ANSI-compatible chromaticity bins
- High luminous Intensity and high efficiency
- Compatible with reflow soldering process
- Low thermal resistance
- Long operation life
- Wide viewing angle at 120°
- Silicone encapsulation
- Environmental friendly, RoHS Compliance

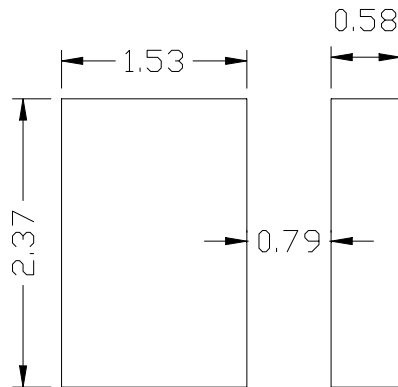
APPLICATIONS

- Outdoor Lighting
- Backlighting
- Decorative and Landscape Lighting
- Reading Lamp
- Architectural Lighting

PACKAGE DIMENSIONS



Soldering patterns



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Forward current	IF	200	mA
Peak Forward Current	IFP	400	mA
Reverse Voltage	VR	10	V
Power Dissipation	Pd	1000	mW
Operating Temperature	Topr	-40~+105	°C
Storage Temperature	Tstg	-40~+105	°C
Soldering Temperature	Tsld	Reflow Soldering: 260°C for 10 seconds	
LED Junction Temperature	Tj	125	°C

IFP Conditions: Pulse Width $\geq 10\text{msec.}$ and Duty $\geq 1/10$.

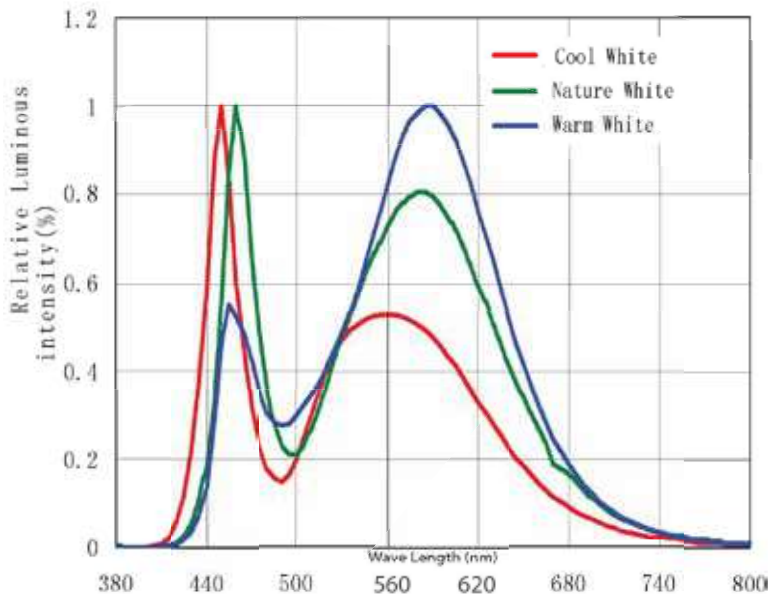
CHARACTERISTICS (Tj=25°C)

Item	Symbol	Condition	Min	Typ	Max	Unit
Viewing Angle	$2\phi^{1/2}$	$I_F=150\text{mA}$	--	120	--	deg.
Luminous Flux	Φ_v	$I_F=150\text{mA}$	150	--	170	lm
Color Rendering Index	CRI	$I_F=150\text{mA}$	70	--	--	--
Color Temperature	CCT	$I_F=150\text{mA}$	2700	--	6500	K
Thermal Resistance (Junction to Solder point)	Rth-js	$I_F=150\text{mA}$	--	15	--	°C/W

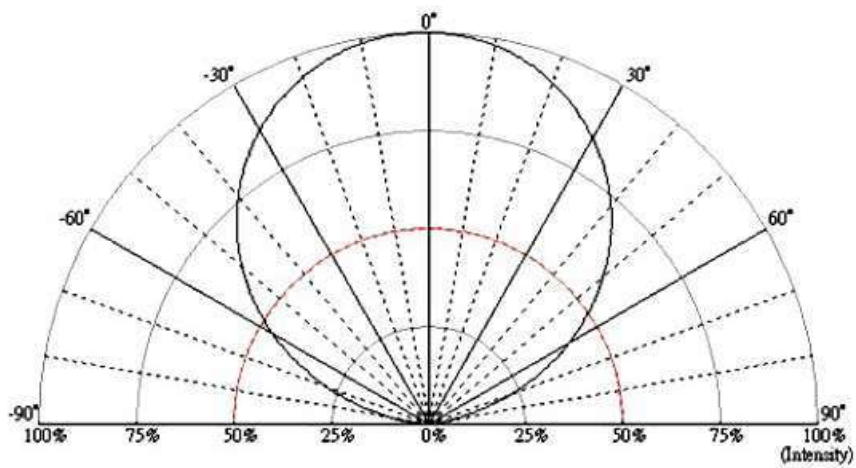
Notes:

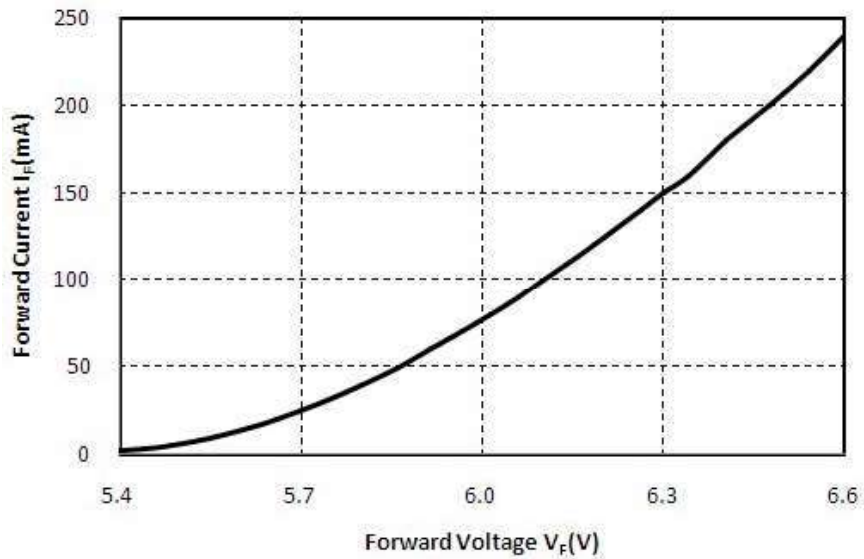
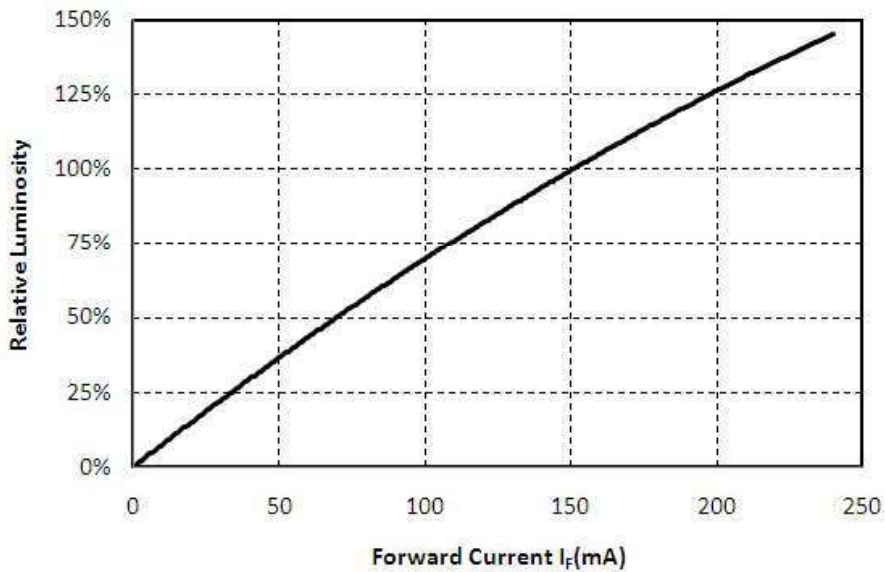
1. Luminous flux is measured with an accuracy of $\pm 10\%$.
2. Chromaticity coordinate bins are measured with an accuracy of ± 0.01 .
3. CRI is measured with an accuracy of ± 2 .
4. Some color and CRI bins may have limited availability, please contact us before ordering.

RELATIVE SPECTRAL POWER DISTRIBUTION ($T_j=25^{\circ}\text{C}$)



TYPICAL SPATIAL DISTRIBUTION



RELATIVE LUMINOUS FLUX VS. CURRENT ($T_j=25^\circ\text{C}$)**ELECTRICAL CHARACTERISTICS ($T_j=25^\circ\text{C}$)**

SORTING RANKS

Part No.	Condition	Rank	Unit
ES-E3030-106V-XX-730	150mA	L1 150-160	Im
ES-E3030-106V-XX-757		L1 150-160	
ES-E3030-106V-XX-765		L1 150-160	
ES-E3030-106V-XX-830		L1 150-160	
ES-E 3030-106V-XX-865		L1 160-170	
ES-E 3030-106V-XX-857		L1 160-170	

SORTING RANKS

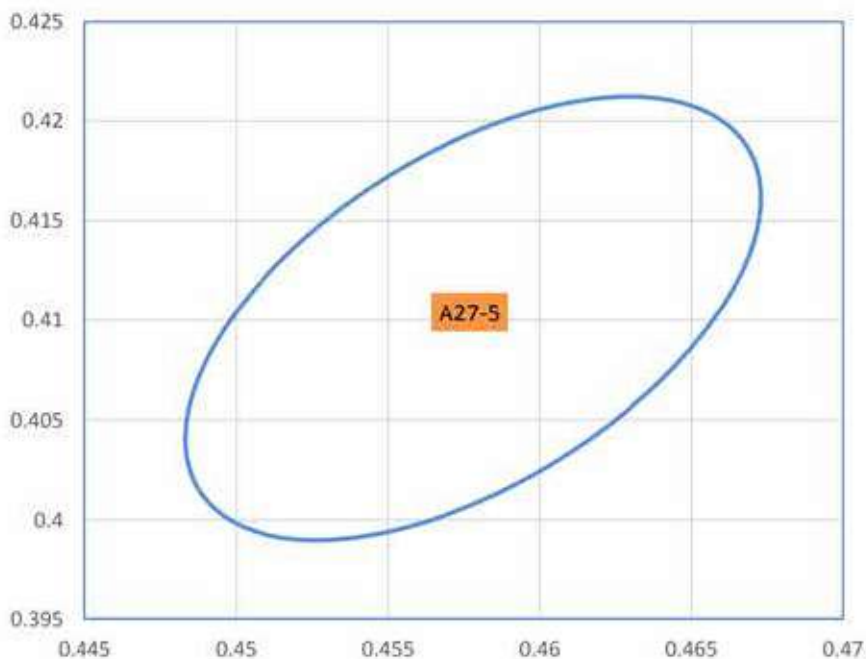
Part No.	Condition	Rank	Unit
ES-E3030-106V-XX-730	150mA	L2 150-160	Im
ES-E3030-106V-XX-757		L2 160-170	
ES-E3030-106V-XX-765		L2 160-170	
ES-E3030-106V-XX-830		L2 150-160	
ES-E 3030-106V-XX-865		L2 150-160	
ES-E 3030-106V-XX-857		L2 150-160	

(2) Forward Voltage ($T_j=25^{\circ}\text{C}$)

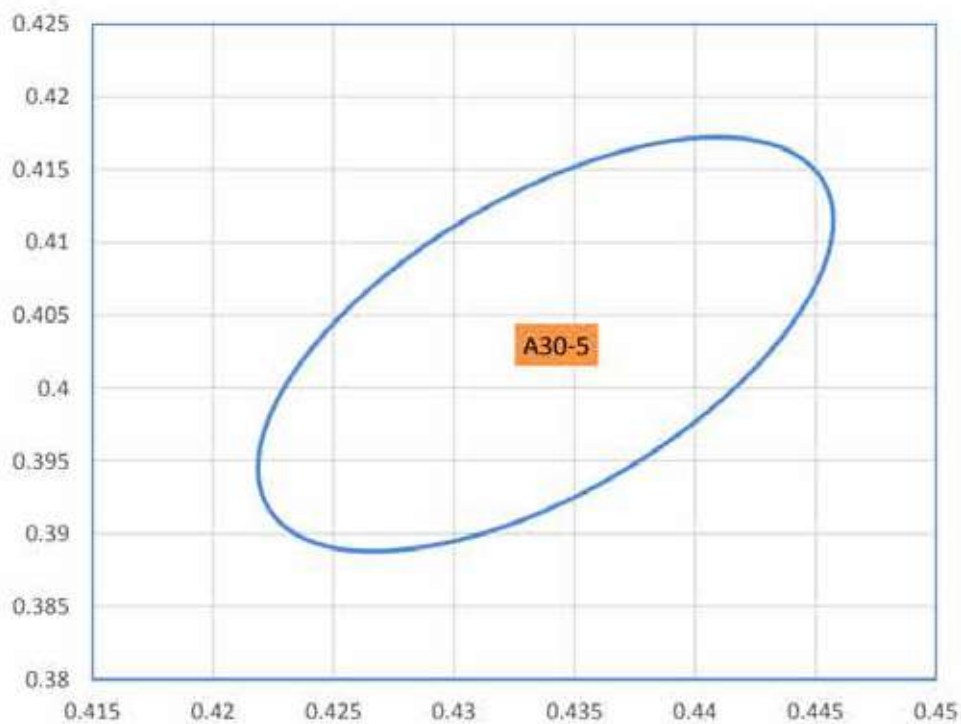
Rank	Condition	Min.	Max.	Unit
V1	150mA	6.2	6.4	V
V2		6.3	6.6	

(3) Chromaticity Bins

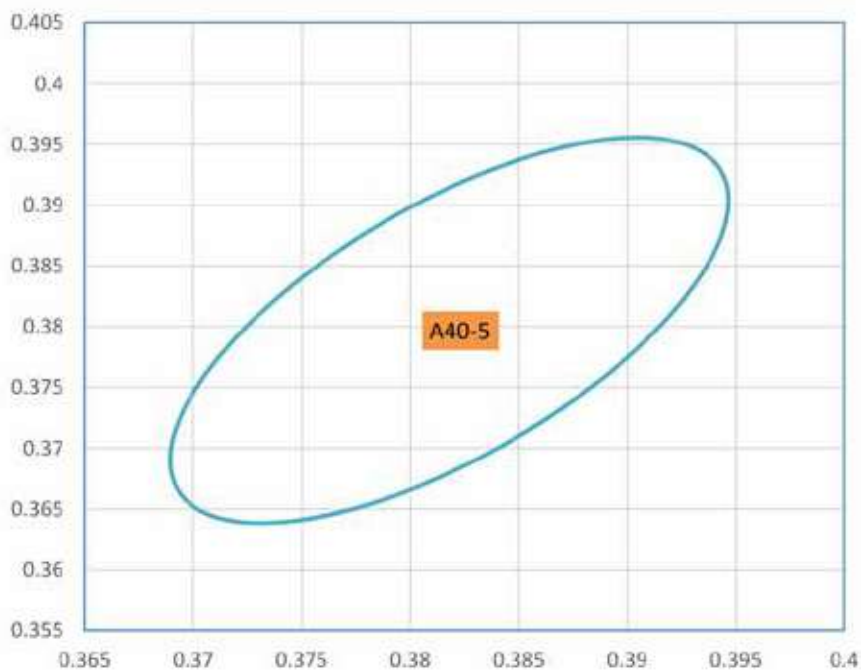
Rank	ES-P3030-106V-XX-827			CCT	2700K
Bin Code	Color Coordinates(X,Y)				
27-5	X	Y	a	b	theta
	0.4578	0.4101	0.01290	0.00685	53.7



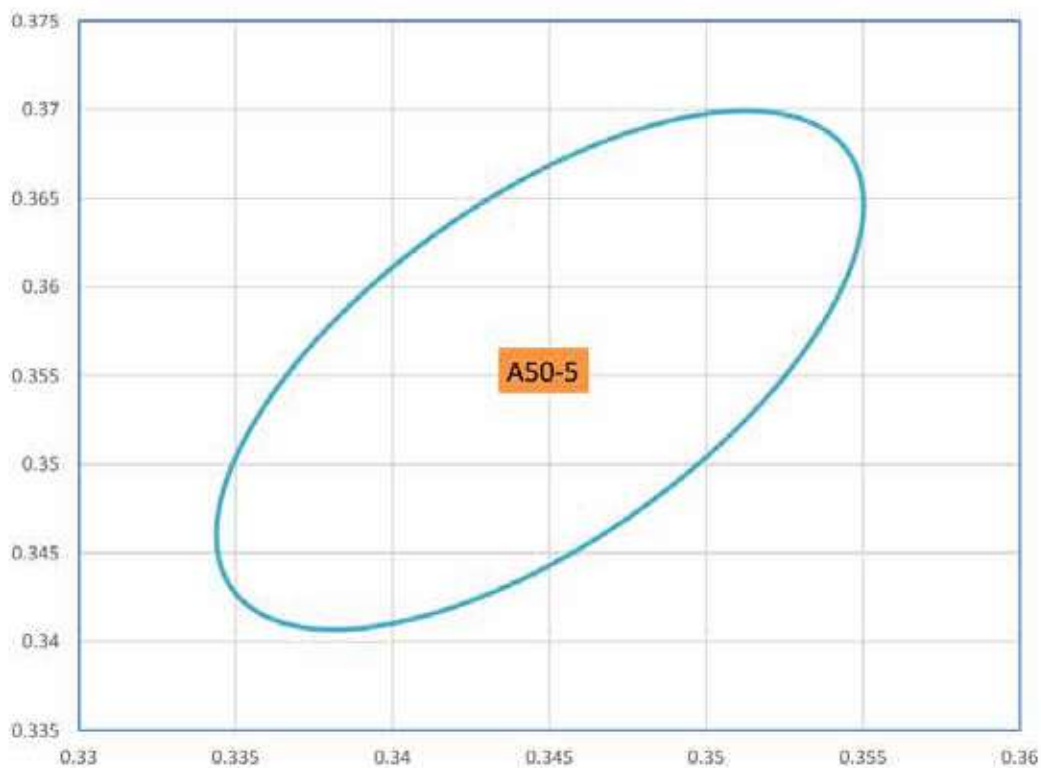
Rank	ES-E3030-106V-XX-830			CCT	3000K
Bin Code	Color Coordinates(X,Y)				
30-5	X	Y	a	b	theta
	0.4338	0.4030	0.0139	0.0068	53.217



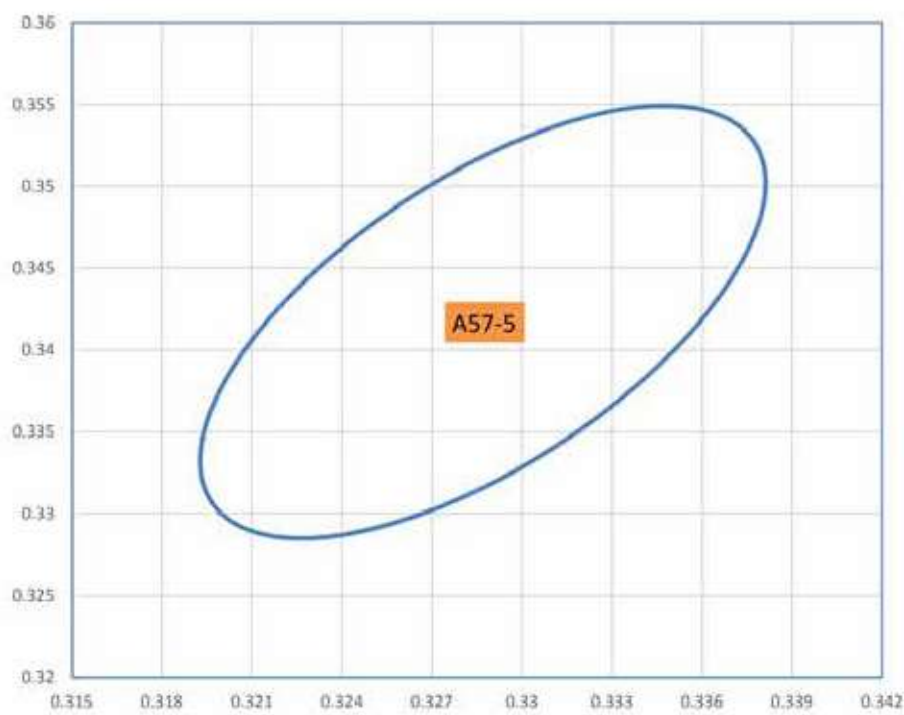
Rank	ES-E3030-106V-XX-840			CCT	4000K
Bin Code	Color Coordinates(X,Y)				
40-5	X	Y	a	b	theta
	0.3818	0.3797	0.01565	0.0067	53.717



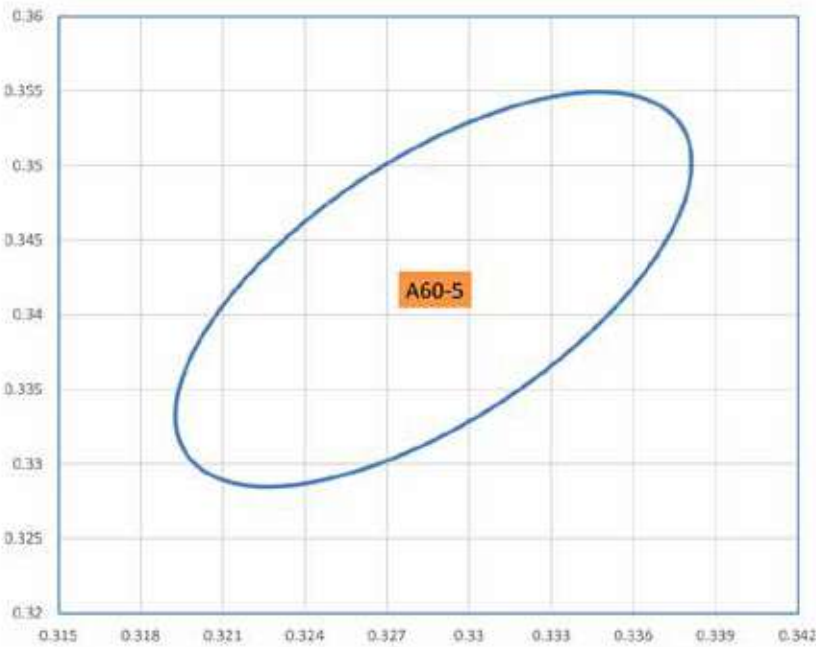
Rank	ES-E3030-106V-XX-850			CCT	5000K
Bin Code	Color Coordinates(X,Y)				
50-5	X	Y	a	b	theta
	0.3447	0.3553	0.0137	0.0059	59.617



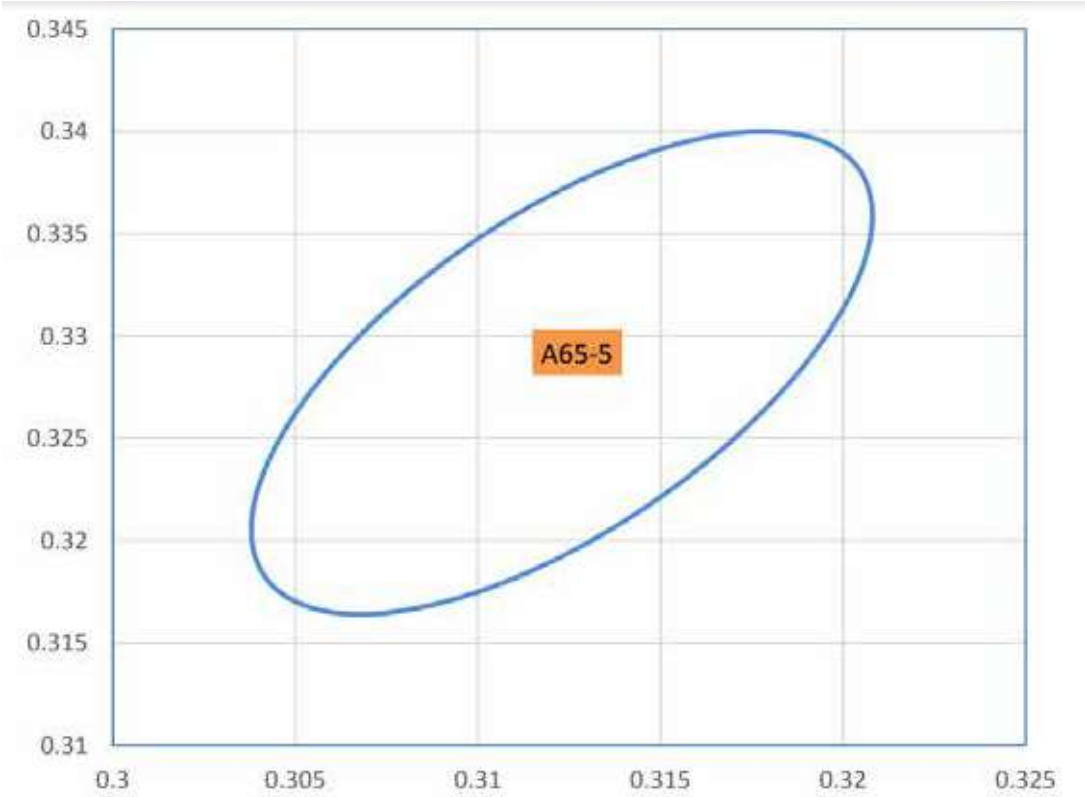
Rank	ES-E3030-106V-XX-857			CCT	5700K
Bin Code	Color Coordinates(X,Y)				
57-5	X	Y	a	b	theta
	0.3287	0.3417	0.01243	0.00533	59.09



Rank	ES-E3030-106V-XX-860			CCT	6000K
Bin Code	Color Coordinates(X,Y)				
60-5	X	Y	a	b	theta
	0.322	0.3365	0.01179	0.00504	59.21



Rank	ES-E3030-106V-XX-865			CCT	6500K
Bin Code	Color Coordinates(X,Y)				
65-5	X	Y	a	b	theta
	0.3191	0.3351	0.01115	0.00475	58.567



REFLOW SOLDERING CHARACTERISTICS

Preheating : 140°C~160°C±5°C, within 2 minutes.

Operation heating : 260°C(Max.) within 10 seconds.(Max)

Gradual Cooling (Avoid quenching).

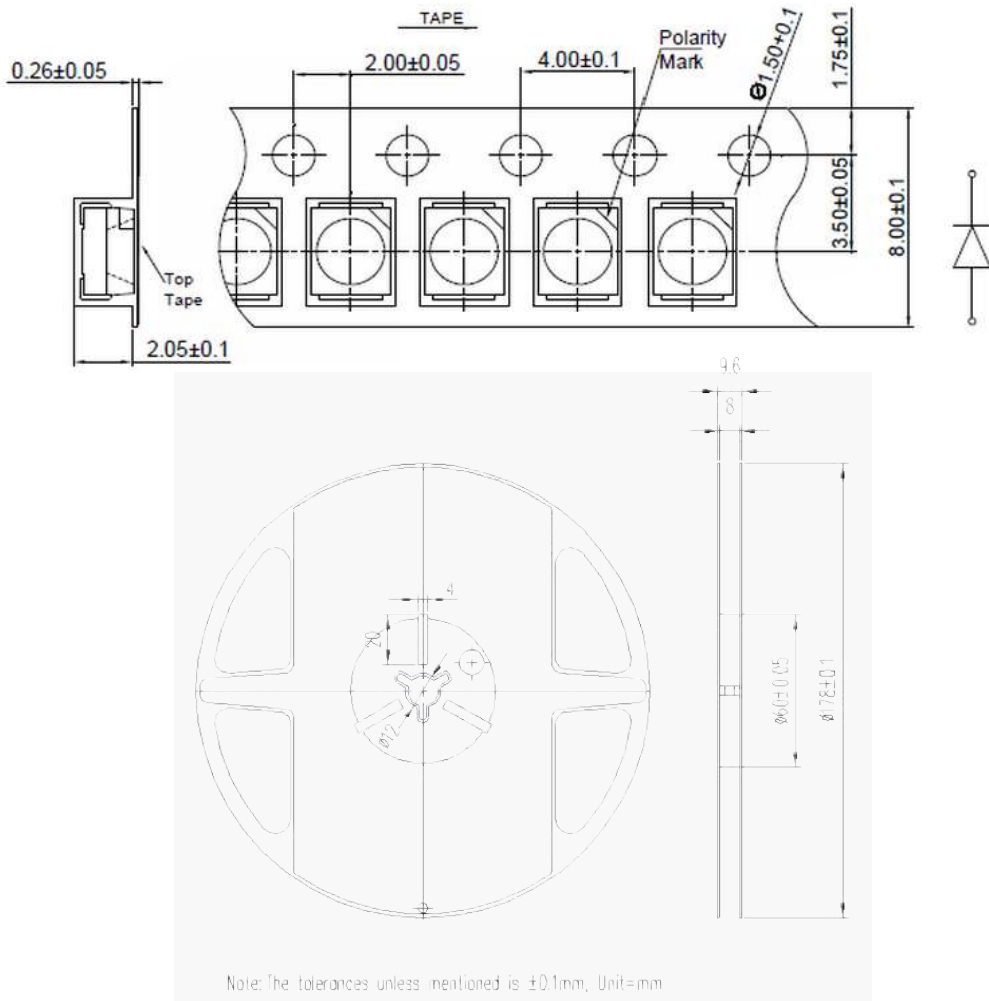
Lead solder		Lead-free solder	
Pre-heat	120-150°C	Pre-heat	150-200°C
Pre-heat time	120 sec.Max.	Pre-heat time	120 sec.Max.
Peak Temperature	240°C Max.	Peak Temperature	260°C Max.
Soldering time condition	10 sec.Max.	Soldering time condition	10 sec.Max.

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Note:

The encapsulated material of the LEDs is silicone . Therefore the LEDs have a soft surface on the top of package. The pressure to the top surface will be influence to the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So when using the picking up nozzle, the pressure on the silicone resin should be proper.

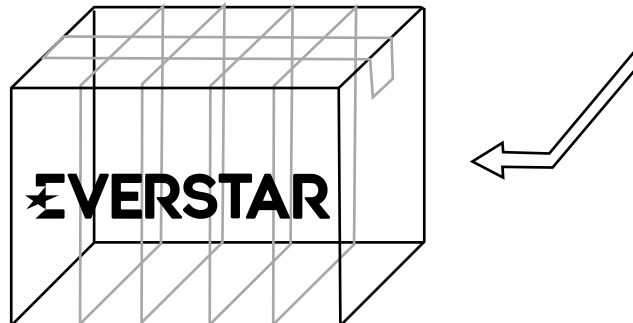
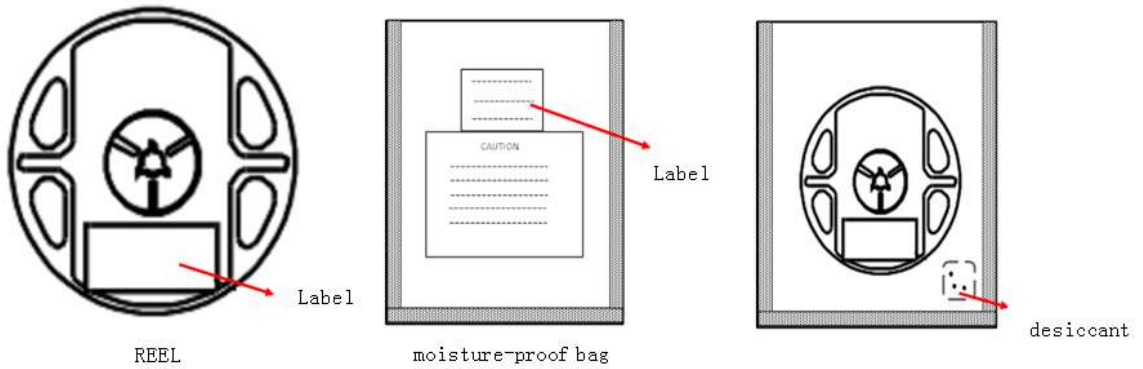
TAPE AND REEL



Notes:

- (1) Quantity : 4,000pcs/Reel
- (2) Cumulative Tolerance : Cumulative Tolerance/10 pitches to be ±0.2mm
- (3) Adhesion Strength of Cover Tape : Adhesion strength to be 0.1-0.7N when the cover tape is turned off from the carrier tape at the angle of 10° to the carrier tape
- (4) Package : P/N, Manufacturing data Code No. and quantity to be indicated on a damp proof Package.

PACKAGING



RELIABILITY TEST ITEMS

Test Items	Test Duration	Number of Damaged
Steady State Operating Life of High Temperature (HTOL) $T_s=85^{\circ}\text{C}$, IF=Max	1000hrs	0/20
Steady State Operating Life of Low Temperature (LTOL) $T_a=-40^{\circ}\text{C}$, IF=Max	1000hrs	0/20
Pulse Wet Operating Life of High Temperature (PWHTOL) $60^{\circ}\text{C}/90\%\text{RH}$, IF30mins ON/30min OFF	500hrs	0/20
High Temperature Storage (HTS) $^{\circ}\text{C } 80^{\circ}\text{C}$	1000hrs	0/20
Low Temperature Storage (LTS) -40°C	1000hrs	0/20
Thermal Shock (TS) $-45^{\circ}\text{C}\sim 125^{\circ}\text{C}$ 30min dwell 20sec transfer	100cycles	0/20
Solder Resistance (SR) 265°C , 3X MSL	5sec	0/20
Solder Ability (SA) 245°C 5sec, 95% coverage	5sec	0/11
Mechanical Shock (MS) 1500G 0.5msec pulse	Each 6 axis	0/6
Random Vibration (RV) 6G RMS, 10-2000Hz, 10min	Per axis	0/6
Variable Vibration Frequency (VVF) 10-2000-10Hz, log or linear sweep rate, 20G for 1 min, 1.5mm each apply 3x per axis over	6hrs	0/6
Salt Spread (SS) 35°C , 30g/m ² /day	48hrs	0/11

Item	Symbol	Test Condition	Criteria for Judgment	
			Min.	Max.
Forward	VF	IF=Typical Current		U.S.L x1.1
Luminous Flux	Im	IF=Typical Current	L.S.L x0.7	
CCX&CCY	x.y	IF=Typical Current		Shift<0.02

PRECAUTION FOR USE

- (1) This device should not be used in any type of fluid such as water, oil, organic solvent, etc.
When washing is required, IPA should be used.
- (2) When the LEDs are illuminating, operating current should be decided after considering the ambient maximum temperature.
- (3) LEDs must be stored to maintain a clean atmosphere. If the LEDs are stored for 3 months or more after being shipped from EVERSTAR, a sealed container with a nitrogen atmosphere should be used for storage.
- (4) The LEDs must be used within seven days after opening the moisture proof packing. Repack unused Products with anti-moisture packing, fold to close any opening and then store in a dry place.
- (5) The appearance and specifications of the product may be modified for improvement without notice.
- (6) This LED is sensitive to the static electricity and surge. It is recommended to use a wrist Band or antielectrostatic glove when handling the LEDs.
- (7) On manual soldering, a solder tip must be needed as grounded for usage. If over voltage which exceeds the absolute maximum rating is applied to LEDs, it will cause damage LEDs and result in destruction. Damaged LEDs will show some unusual characteristics such as leak current remarkably increase, turn-on voltage becomes lower and the LEDs get unlighted at low current.