

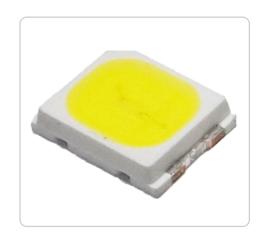
V01 1

ES-2835-053V-XX-XXX Datasheet



This 2835 LED Light Source is a high performance 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 bulb light, LED tube light, backlighting and etc.

The White Power LED is available in the range of color temperature from 2700K to 7000K. This part has a foot print that is compatible to most of the same size LED in the market today.



FEATURES

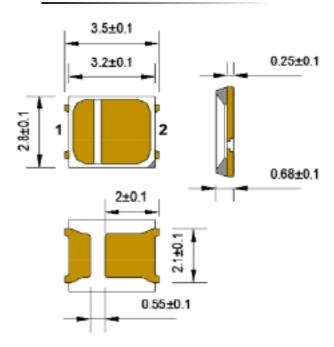
- Available in Cool White, Neutral White and Warm White color
- ANSI-compatible chromaticity bins
- High luminous Intensity and high efficiency
- Compatible with reflow soldering process
- Low thermal resistance
- Long operation life
- Wide viewing angle at 120°
- Silicone encapsulation
- Environmental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

APPLICATIONS

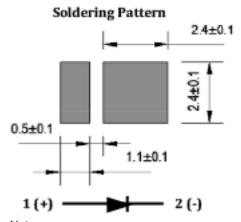
- Flat panel light
- Backlighting
- LED tube light
- LED bulb light
- Decorative and landscape lighting
- Signage and channel letter
- Reading lamp
- Decorating and entertainment lighting
- Architectural lighting



PACKAGE DIMENSIONS



Recommended Solder Pad Design



Notes:

- 1. All dimensions in millimeters.
- 2. Thickness to lerance of copper plate is = 0.02mm.
- 2. Thickness to lerance of copper plate is + 0.02mm
- 3. Thickness to lerance of product is + 0.05mm.
- 4. Tolerance is + 0.1mm unless otherwise noted.



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Forward current	lF	180	mA
Peak Forward Current	I FP	300	mA
Reverse Voltage	V_{R}	5	V
Power Dissipation	P_d	500	mW
Operating Temperature	Topr	-40~+85	°C
Storage Temperature	T_{stg}	-40~+100	°C
Soldering Temperature	T_{sld}	Reflow Soldering	: 260°C for 10
		seconds	
LED Junction Temperature	Tj	125	°C

I_{FP} Conditions: Pulse Width ≤10msec. and Duty ≤1/10.

CHARACTERISTICS (Tj=25°C)

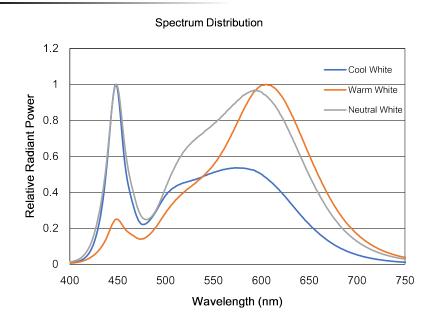
Parameter	Symbol	Condition	Min.	Тур.	Max.	Unit
Forward Voltage	VF	I=150mA	2.8	3.0	3.4	V
Viewing Angle	20 1/2	I=150mA		120		deg.
Luminous Flux	Фv	I=150mA	54		75	lm
Color Rendering Ind	ex CRI	I=150mA	80			
Color Temperature	e CCT	I=150mA	2700		7000	k
Thermal Resistance (Junction to Solder Point)	•	I==150mA		30		°C/W

Notes:

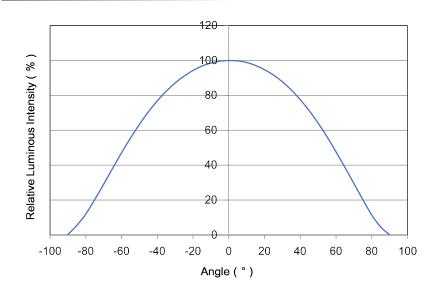
- 1. Luminous flux is measured with an accuracy of ± 10%.
- 2. Chromaticity coordinate bins are measured with an accuracy of \pm 0.01.
- 3. CRI is measured with an accuracy of \pm 2.
- 4. Some color and CRI bins may have limited availability, please contact us before ordering.
- 5. All measurements were made under the standardized environment of Everstar



RELATIVE SPECTRAL POWER DISTRIBUTION (Tj=25°C)

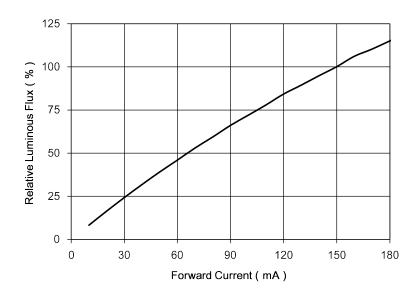


TYPICAL SPATIAL DISTRIBUTION

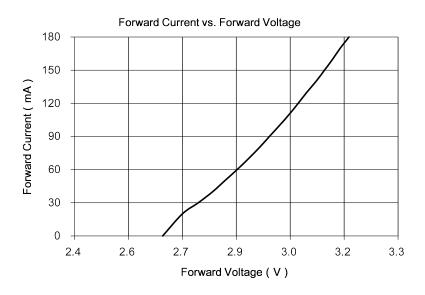




RELATIVE LUMINOUS FLUX VS.CURRENT (T_i=25°C)

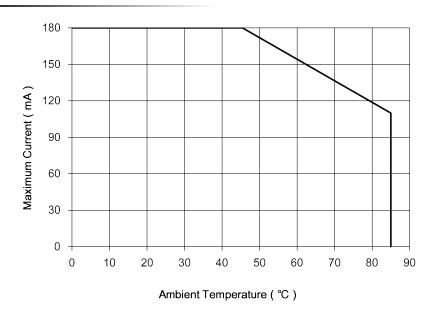


ELECTRICAL CHARACTERISTICS (T_j=25°C)

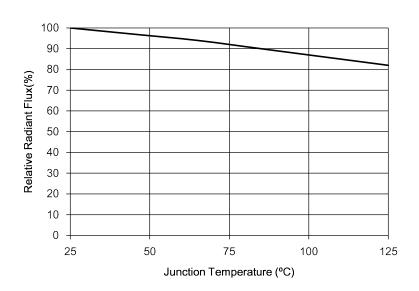




MAXIMUM CURRENT VS. AMBIENT TEMPERATURE



RELATIVE RADIANT FLUX VS. JUNCTION TEMPERATURE





SORTING RANKS

(1) Luminous Flux (Tj=25°C)

Ordering code	Condition	Rar	Unit	
Ordering code	Condition	L1	L2	Unit
ES-2835-053V-XX-827		55-65	60-70	
ES-2835-053V-XX-830		55-65	60-70	
ES-2835-053V-XX-840	150mA	60-70	70-75	lm
ES-2835-053V-XX-857		60-70	70-75	
ES-2835-053V-XX-860		60-70	70-75	
ES-2835-053V-XX-865		60-70	70-75	

(2) Forward Voltage (Tj=25°C)

Rank	Condition	Min.	Max.	Unit
V1	150mA	2.8	3.1	V
V2	15011174	3.1	3.3	•

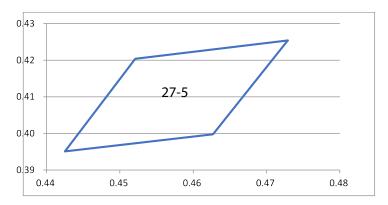
Notes

- 1. 10% tolerance for luminous intensity may be caused by measurement inaccuracy.
- 2. Measurement Uncertainty of the Forward Voltage: ± 0.1V

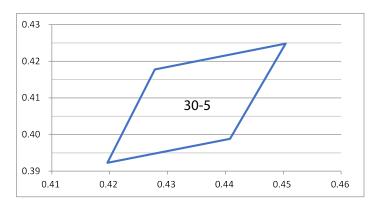


(3) Chromaticity Bins

Part Number	Bin Code	ССТ	Color Co	oordinates
	5 0000		Х	Υ
ES2835-053V-XX-827			0.4729	0.4254
	27.5	270014	0.4521	0.4204
	27-5	27-5 2700K 0.4425 0.4627	0.3951	
			0.4627	0.3998

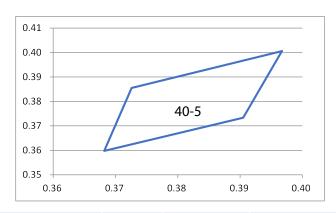


Part Number	Bin Code	ССТ	Color Coordinates		
	Jiii codo		Х	Υ	
ES2835-053V-XX-830			0.4504	0.4198	
	30-5	3000K	0.4278	0.4128	
	30-3	3000K	0.4196	0.3873	
			0.4408	0.3938	

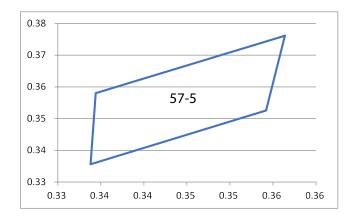




Part Number	Bin Code	CCT	Color Coordina		
	Siii soud	Х	Υ		
ES-2835-053V-XX-840			0.3967	0.4006	
	40 F	400017	0.3726	0.3855	
	40-5	4000K	0.3682	0.3598	
			0.3905	0.3733	

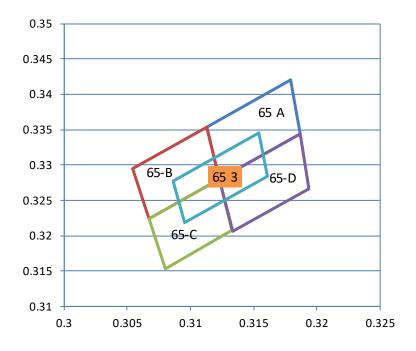


Part Number	Bin Code	ССТ	Color Coordina		
	Din code	551	Х		
ES-2835-053V-XX-857		0.3344	0.3564	0.3761	
	-7 -		0.3580		
	57-5 5700K 0.3338 0.3542	0.3338	0.3356		
			0.3542	0.3526	





Part number		ES-2835-0	53V-XX-865	ССТ	6500K	
Bin Code	сст	Color Coordinates(X,Y)				
65-5	6500k	Х	0.3154	0.3086	0.3096	0.3161
05-5	OSUUK	Υ	0.3345	0.3277	0.3219	0.3284





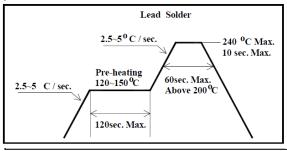
REFLOW SOLDERING CHARACTERISTICS

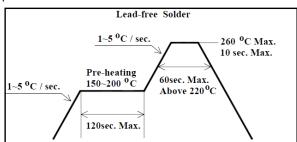
Preheating: 140°C~160°C±5°C, within 2 minutes.

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.	



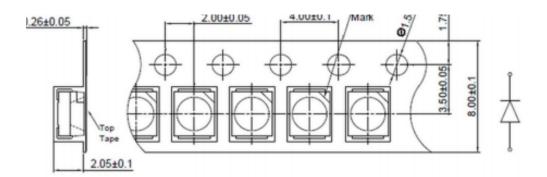


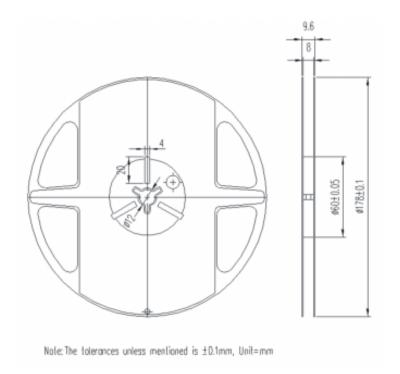
Notes:

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.



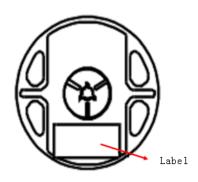
RELIABILITY TEST ITEMS

Test Items	Test Duration	Number of Damaged
Steady State Operating Life of High Temperature (HTOL) Ts=85℃, IF=Max	1000hrs	0/20
Steady State Operating Life of Low Temperature (LTOL) Ta=-40°C, IF=Max	1000hrs	0/20
Pulse Wet Operating Life of High Temperature (PWHTOL) 60°C/90%RH, IF30mins ON/30min OFF	500hrs	0/20
High Temperature Storage (HTS) °C 80°C	1000hrs	0/20
Low Temperature Storage (LTS) -40°C	1000hrs	0/20
Thermal Shock (TS) -45°C~125°C 30min dwell 20sec transfer	100cycles	0/20
Solder Resistance (SR) 265°C, 3X MSL	5sec	0/20
Solder Ability (SA) 245°C5sec, 95% coverage	5sec	0/11
Mechanical Shock (MS) 1500G 0.5msec pulse shock	Each6 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/m2/day	48hrs	0/11

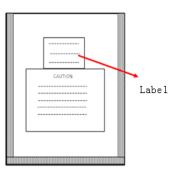
ltem	Symbol	Test Condition	Criteria fo Min.	r Judgment Max.
Forward	VF	IF=Typical Current		U.S.L x1.1
Luminous Flux	lm	IF=Typical Current	L.S.L x0.7	
CCX&CCY	x.y	IF=Typical Current		Shift<0.02



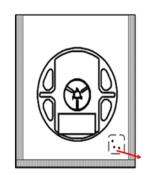
PACKAGING



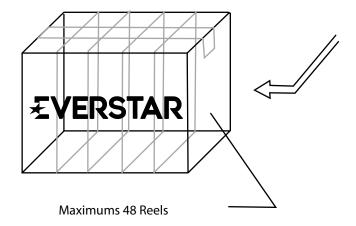
REEL



moisture-proof bag



desiccant



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 3months 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.

