



SPECIFICATION

Part No : ES-E5050-509V-XX-XXX

Description : 5050 LED

Version No : V1.2/08.23

ES-E5050-509V-XX-XXX Datasheet



FEATURES

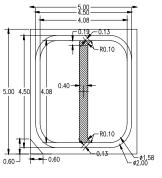
- Small Package with High Efficiency
- Low Voltage Operation, Instant Light
- Long Operation Life
- Lead Free Product
- RoHS Compliant

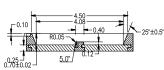


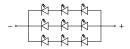
APPLICATION

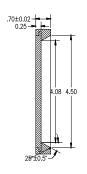
- Traditional Lighting Replacement
- Ordinary Lighting
- Indoor and Outdoor Signboard Back Light
- Architechtural / Decorative Lighting

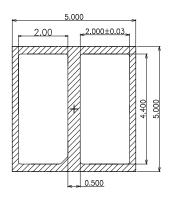
PACKAGE DIMENSIONS



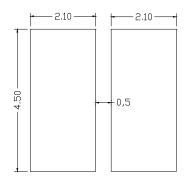








Soldering Pattern



Notes:

- 1. All dimensions in millimeters.
- 2. Tolerance is +0.15mm unless otherwise noted

OPTOELECTRONICS CHARACTERISTICS (TA=25°C)

Parameter	Test Condition	Symbol	Min	Type	Max	Unit
Forward Voltage	I==550mA	VF	8.5		10	V
Reverse Current	VR=20V	lR			20	μΑ
View Angle	I=550mA	2 01/2		120		deg.
Electrostatic Discharge	НВМ	ESD			2000	V
Color Tolerance	I==550mA	SDCM			5	

ABSOLUTE MAXIMUM RATINGS (TA=25°C)

Parameter	Symbol	Rating	Unit
Forward Current	lf	500	mA
Pulse Forward Current	lгр	1000	mA
Power Dissipation	Pd	5000	mW
Reverse Voltage	VR	20	V
Operating Temperature	Topr	-40~+105	°C
Storage Temperature	Tstg	-40~+105	°C
Junction Temperature	Tj	125	°C
Thermal Resistance	Rθ	2.2	°C/W
Photoelectric Efficiency	IPCE	≥60	%
Soldering Temperature	Tsld	260°C for 10sec	

Notes:

- 1. Frequency 10KHz, duty ratio ≤10%.
- 2. The forward pulse current is the maximum current used by the chip at 25° C.

MASS PRODUCTION LIST (IF=550MA;TA=25°C)

Part no.	CRI	сст(к)	Lumen (lm)	
			Min	Max
	70	6500	750	800
EC E5050 500V 11 VVV	70	5700	750	800
ES-E5050-509V-L1-XXX	70	4000	750	800
	70	3000	700	750
ES-E5050-509V-L2-XXX	70	6500	900	950
	70	5700	850	900
	70	4000	850	900
	70	3000	850	900

Note:

1. The test error

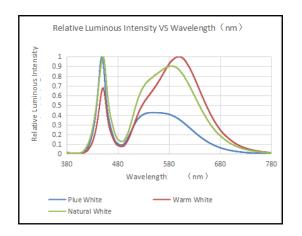
VF: ±3% XY: ±0

XY: ±0.005 Φ: ±10%

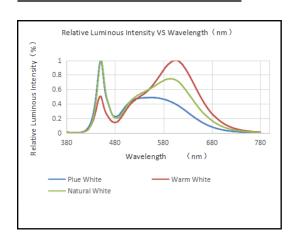
Ra:- 0.5+2



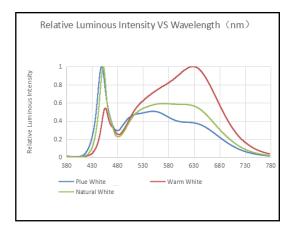
SPECTRAL DISTRIBUTION Ra70



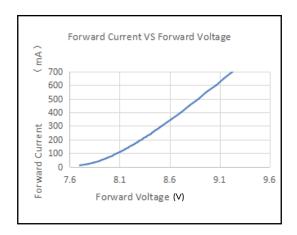
SPECTRAL DISTRIBUTION Ra80



SPECTRAL DISTRIBUTION Ra90

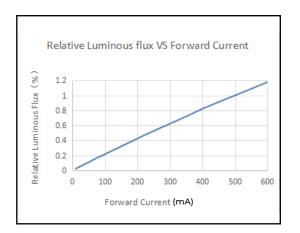


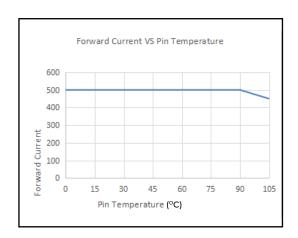
FORWARD VOLTAGE VS FORWARD CURRENT



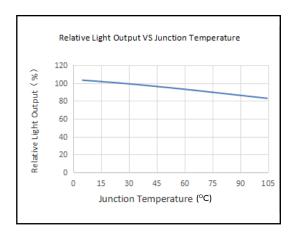
RELATIVE LUMINOUS VS FORWARD CURRENT

AMBIENT TEMPERATURE VS FORWARD CURRENT

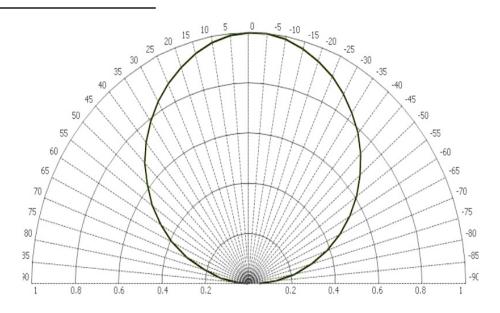




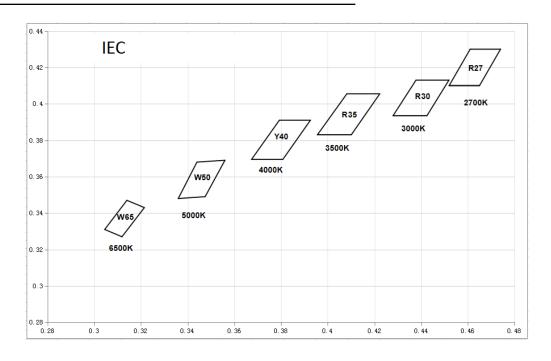
RELATIVE FLUX VS JUNCTION TEMPRATURE



VIEW ANGLE DISTRIBUTION



CIE CHROMACITY DIAGRAM (IF=800mA; TA=25°C (CIE)



COLOR RANK: (IF=800mA;TA=25°C) Bin

CODE	ССТ	X	Y
		0.461	0.43
R27	2700K	0.452	0.41
RZ/		0.465	0.41
		0.474	0.43

CODE	ССТ	X	Υ
	R30 3000K	0.4378	0.413
DZO		0.428	0.3935
R30		0.4425	0.3935
		0.4519	0.413

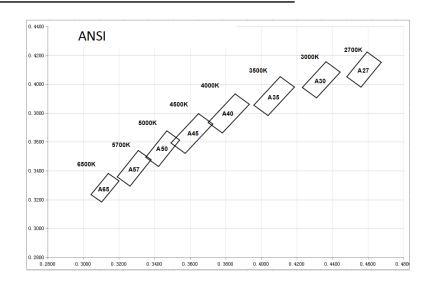
CODE	ССТ	X	Y
	0.4082	0.4055	
D75	R35 3500K	0.3956	0.383
R33		0.4101	0.383
		0.4223	0.4055

CODE	ССТ	Х	Υ
	4000K	0.3793	0.391
Y40		0.3674	0.3695
140		0.3808	0.3695
		0.3926	0.391

CODE	CCT	X	Y
		0.344	0.368
\\/\5O	W50 5000K	0.336	0.348
0030		0.3475	0.349
		0.356	0.369

CODE	CCT	X	Υ
	6500K	0.314	0.347
W65		0.3045	0.331
VV 03		0.3119	0.327
		0.3215	0.343

CIE CHROMACITY DIAGRAM (IF=800mA; TA=25°C (CIE)



COLOR RANK: (IF=800mA;TA=25°C) Bin

CODE	ССТ	Х	Y
	0.4595	0.4223	
۸ کات	2700K	0.4481	0.4051
AZ/		0.4561	0.3979
		0.4675	0.4151

CODE	ССТ	Х	Υ
	0.4365	0.4155	
A30	3000K	0.4231	0.3977
A30		0.4311	0.3905
		0.4445	0.4083

CODE	ССТ	Х	Y
	3500K	0.4107	0.4052
A35		0.3959	0.3854
A35		0.4039	0.3782
		0.4187	0.3980

CODE	ССТ	X	Y
		0.3854 0.393	0.3932
A40	4000K	0.3702	0.3734
A40	4000K	0.3782	0.3662
		0.3934	0.3860

CODE	ССТ	Х	Y
		X 0.3649 0.3493 0.3573 0.3729	0.3796
A45	4500K	0.3493	0.3592
A45	4500K	0.3573	0.3520
		0.3729	0.3724

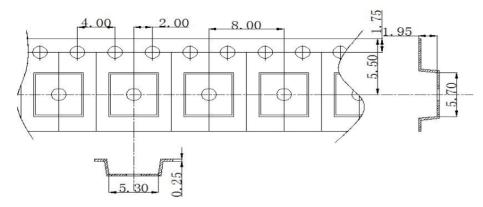
CODE	ССТ	X	Y
		X 0.3470 0.3352 0.3424 0.3542	0.3677
A50	5000K	0.3352	0.3493
A50	3000K	0.3424	0.3429
		0.3542	0.3613

CODE	ССТ	Х	Y
		0.3310 0.3192 0.3264	0.3541
A57	5700K	0.3192	0.3357
A57	3700K	0.3264	0.3293
		0.3382	0.3477

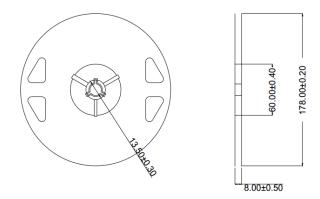
CODE	ССТ	X	Y
		X 0.3142 0.3044 0.3104 0.3202	0.3381
A65	6500K	0.3044	0.3235
A63	6300K	0.3104	0.3183
		0.3202	0.3329

PACKAGING SPECIFICATIONS

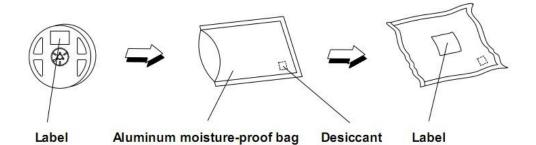
Dimensions Of Tape



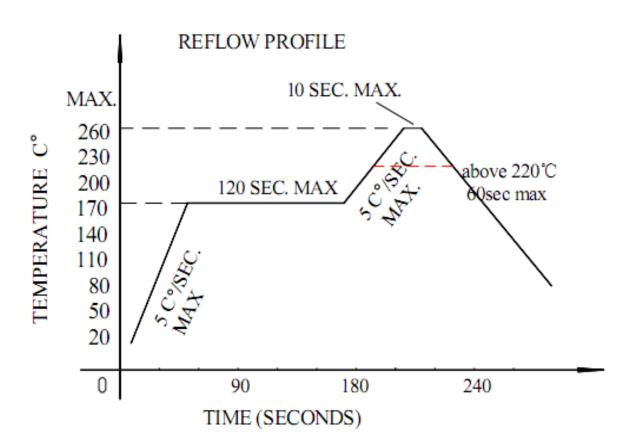
Dimensions Of Reel



Specification



PACKAGING SMT REFLOW SOLDERING INSTRUCTIONS SMT



Notes:

- 1. Reflow soldering should not be done more than two times.
- 2. When soldering, do not put stress on LEDs during heating.

PRECAUTIONS FOR USE

- 1) The encapsulated material of the LEDs is silicone, so the surface of LED colloid is softer, forcing the colloid surface hard will affect the reliability of LED.
- 2) Material confirmation. Whether the LED Bin specifications of the material are consistent, such as whether VF, XY, brightness and so on belong to the same specification, the same specification should be used together, if not the same specification LED is applied to the same object, it should be evaluated first, (if different VF or XY cast together may produce difference in brightness or color).
- 3) Packaging and storage.
- 3.1) Before opening packaging, avoid moisture entry into LED. SMD series LED is suggested to be stored in a drying cabinet with built-in desiccant. The storage environment is 5-30 centigrade, no more than 50% humidity. If storage time is over 3 months, LED needs to be re dehumidifying (65 degrees centigrade for more than /24 hours).
- 3.2) Open the precautions after packing. LED is a surface mount. When the LED is welded, the internal separation of LED may occur. The luminescence efficiency is affected and the luminance decreases or the color variation. The following are the matters to be paid attention to:
- A) Before opening the package, please check the packaging bag for air leakage. If there is any air leakage, please return it to our company to re-bake the dehumidifying package before use.
- B) After opening the package, welding should be completed as soon as possible (within 12hours).
- C) The remaining materials are sealed or placed in an environment of 5~40 C and no more than 30% humidity.
- D) If the open package is more than 24 hours (< 168 hours) or the humidity card is changed from blue to pink, LED needs to be dehumidifying again (65 degrees centigrade for more than /24 hours). If the package is opened for more than 168 hours, it is necessary to dismantle the tape and remove the moisture at 150° C /2h.

PRECAUTIONS FOR USE

3.3) LED electrode and bracket are made of silver plated copper alloy. The silver layer on the surface is easy to be affected by corrosive gases. Please avoid contacting with corrosive environment to cause LED discoloration, so as to avoid the poor weldability of LED and influence the photoelectric performance. Avoid sudden changes in temperature and humidity of the environment, especially under high humidity environment, easy to produce water vapor condensation.

4) Electrostatic protection. LED is a chip sensitive electronic component. Various measures should be taken to avoid static electricity, such as wearing an electrostatic bracelet or anti-static gloves during use. All devices, equipment and instruments should be well grounded.