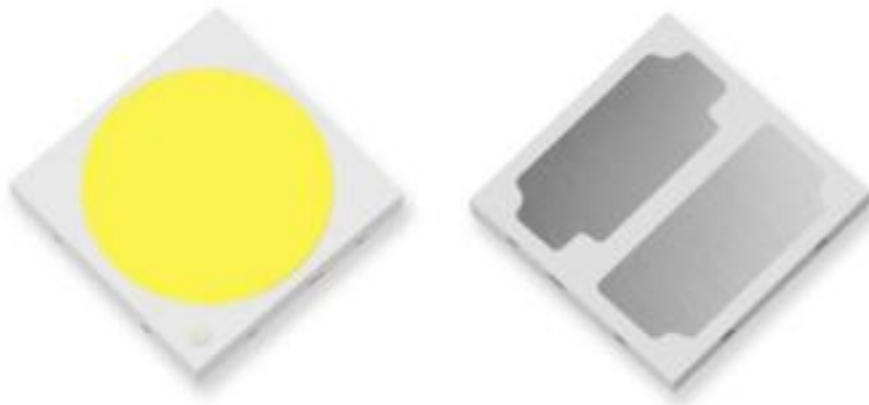


High power 5050 12V Series Data Sheet

SOL-HP5050X500-12



SOL-HP5050W500-12

12V Warm White

SOL-HP5050N500-12

12V Nature White

SOL-HP5050C500-12

12V Cool White

➤ Features:

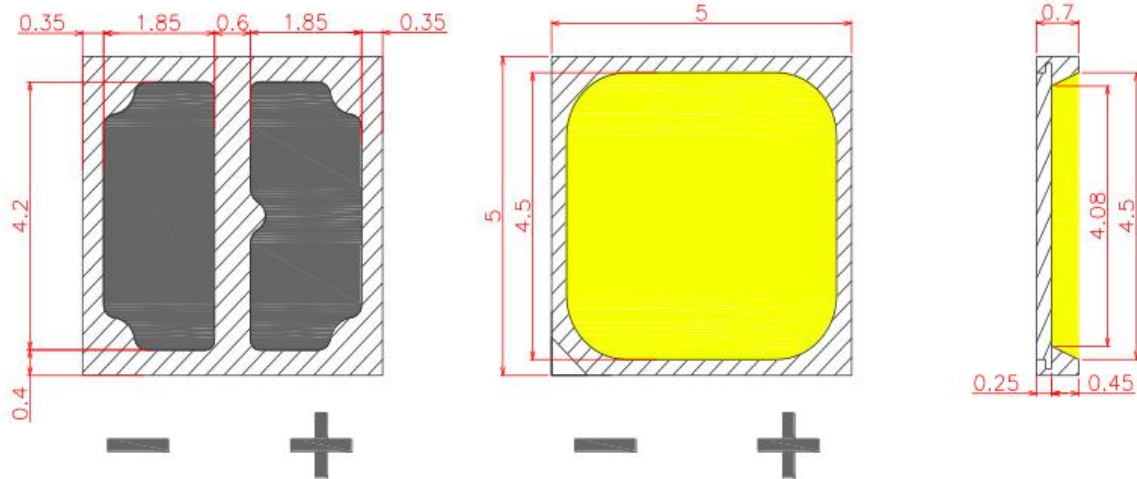
- Super high efficiency
- 5.0mm*5.0mm*0.7mm
- Viewing angle 120°
- EMC Lead frame
- Complied with RoHS directive

➤ Application:

- Indoor lighting
- Outdoor lighting
- Entertainment lighting
- Commercial lighting



➤ Outline Dimensions:



Note:

- Dimensions are in millimeters
- Tolerance is ± 0.1 mm unless otherwise noted

➤ Flux Characteristics, T_j=25°C:

Part Number	CCT (K)or Wavelength(nm)		LuminousFlux@ 400mA (Lm)		Viewing Angle (degrees) 2 θ _{1/2}	CRI	
	Min.	Max.	Min.	Max.		Min.	Max.
	SOL-HP5050W500-12	2700K	3500K	500LM		600LM	120
SOL-HP5050N500-12	3500K	4500K	600LM	700LM	120	70	95
SOL-HP5050C500-12	5000K	6700K	600LM	700LM	120	70	95

Note:

- SOL maintains a tolerance of ±1nm for dominant wavelength measurements.
- SOL maintains a tolerance of ±5% for CCT measurements.
- SOL maintains a tolerance of ± 5% on flux and power measurements.

➤ Electrical Characteristics, T_j=25°C:

Part Number	Forward Voltage V _F (V) @400mA		
	Min.	Typ.	Max.
SOL-HP5050W500-12	11.8	12.8	13.6
SOL-HP5050N500-12	11.8	12.8	13.6
SOL-HP5050C500-12	11.8	12.8	13.6

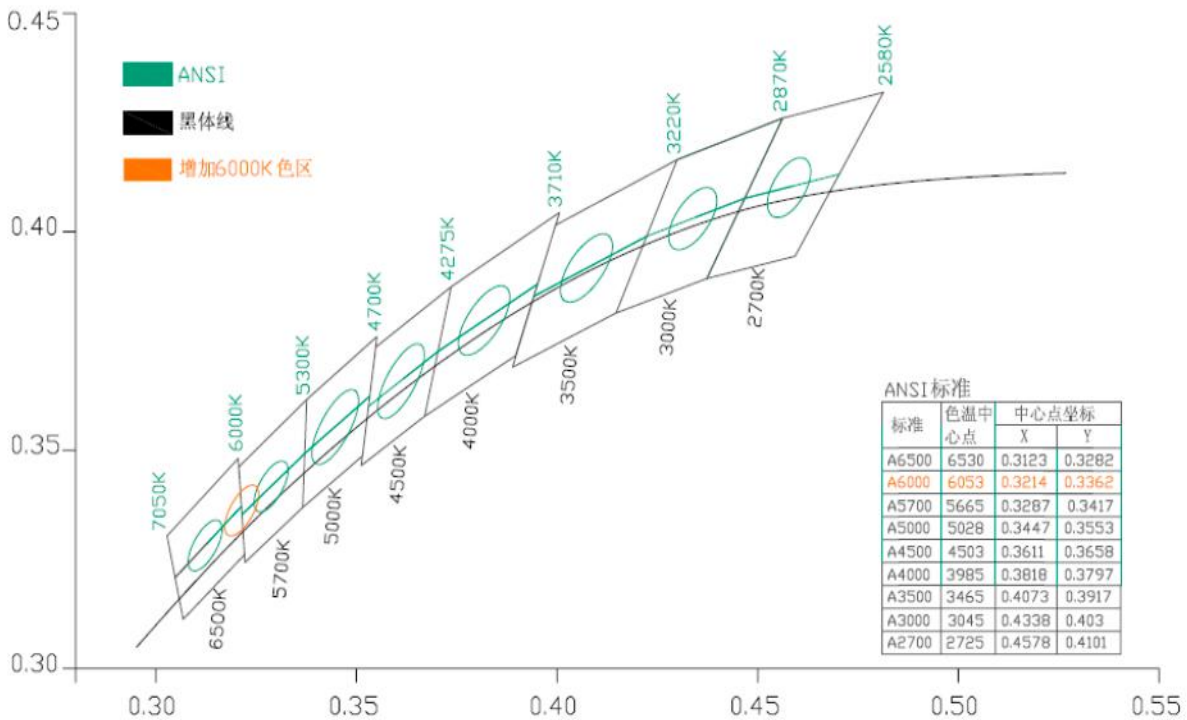
Note:

- SOL maintains a tolerance of ±0.1v for Voltage measurements.

➤ Absolute Maximum Ratings:

Parameter	Symbol	Test Condition	Value		Unit
			Min.	Max.	
Power Dissipation	Pd			6000	mW
Reverse Voltage	VR	IR = 30μA	5		V
Pulse Current	IFp	Duty=0.1,1kHz		500	mA
Forward Current	IFm			500	mA
Operating Temperature	Topr		-40	+85	°C
Storage Temperature	Tstr		-40	+100	°C

CIE Chromaticity Diagram

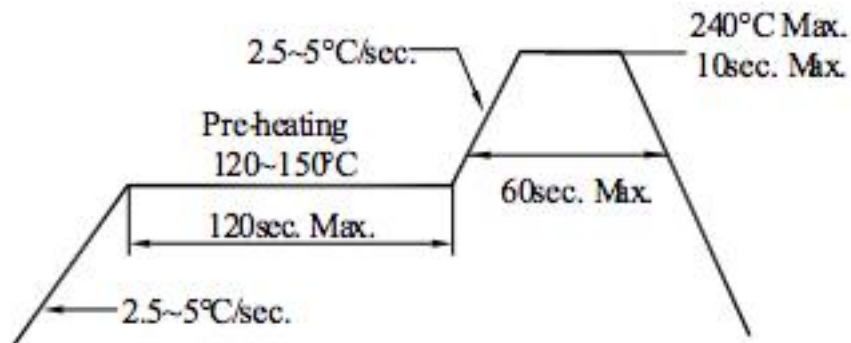


➤ Soldering Profile:

Reflow Soldering		
	Lead Solder	Lead-free Solder
Pre-heat	120~150°C	180~200°C
Pre-heat Time	120sec. Max.	120sec. Max.
Peak Temperature	240°C Max.	260°C Max.
Soldering Time	10sec. max.	10sec. Max.
Condition	Refer to Temperature-profile 1	Refer to Temperature-profile 2

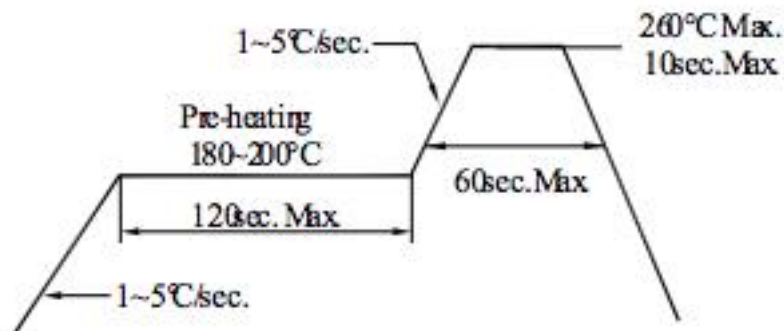
Lead solder

< 1 : Lead Solder >



Lead-free solder

< 2 : Lead-free Solder >



NOTES:

- We recommend the reflow temperature $200^{\circ}\text{C}\pm 5^{\circ}\text{C}$.
- Don't cause stress to the silicone resin while it is exposed to high temperature.
- Number of reflow process shall be 1 time.
- 4, After reflow soldering rapid cooling should be avoided

➤ **Test items and results of reliability:**

Test Item	Test Conditions	Duration/ Cycle	Number of damage	Reference
Temperature	-40° C 30min ↑↓25° C(2min) 100° C 30min	100 times	0/100	JEITA ED-4701300 303
Thermal Shock	40° C 30min ↑↓ 5sec 100° C 30min	100 times	0/100	JEITA ED-4701200 303
High Temperature Storage	Ta=100° C	1000 hours	0/100	EIAJED-4701200 201
Humidity Heat Storage	Ta=85° C RH=85%	1000 hours	0/100	EIAJED-4701100 103

Low Temperature Storage	Ta=-40° C	1000 hours	0/100	EIAJED-4701200 202
Room Temperature Test	Ta=25° C IF=400mA	1000 hours	0/100	Tested with SOL standard
High Humidity Heat Test	60° C RH=90% IF=400mA	1000 hours	0/100	Tested with SOL standard
Low Temperature Test	Ta=-40° C IF=400mA	1000 hours	0/100	Tested with SOL standard
ESD(HBM)	-4KV at 1.5KΩ; 100pF	3 times	0/100	MIL-STD-883D

Thank You!

