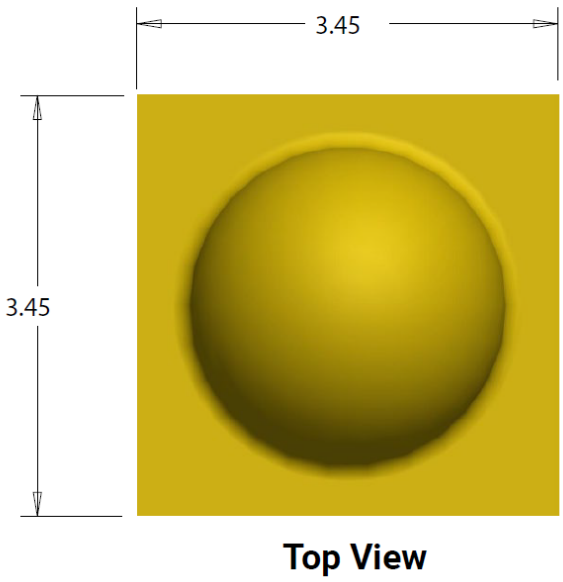
Data Sheet of XGM-3535SAW-D1911

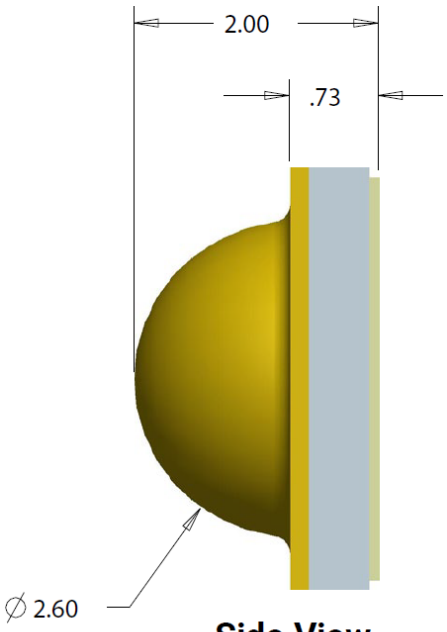
Introduction

The XGM family of blue power chip product delivers improved efficiency which provides high performance and cost effective solutions to solid state lighting market.

LED Chip Layout



Top View



Side View

LED Datasheet

XGM-3535 SMD

Standard Specifications and Maximum Ratings

Items	Symbol	Condition	Minimum	Average	Maximum	Unit
Forward Voltage	VF	IF=350mA	2.9	--	3.4	V
Reverse Current	IR	VR=5v	--	--	5	μA
Angle	2θ1/2	IF=350mA	---	120	---	deg
Flux	IV	IF=350mA	110	--	120	LM
Forward Current	IF	--	--	350	--	mA
Wavelength	λd	IF=350mA	6000	--	6500	K
Junction Temperature	T_J	IF=350mA	--	125	--	℃
Thermal Resistance	RJP	IF=350mA	--	8	--	℃/W

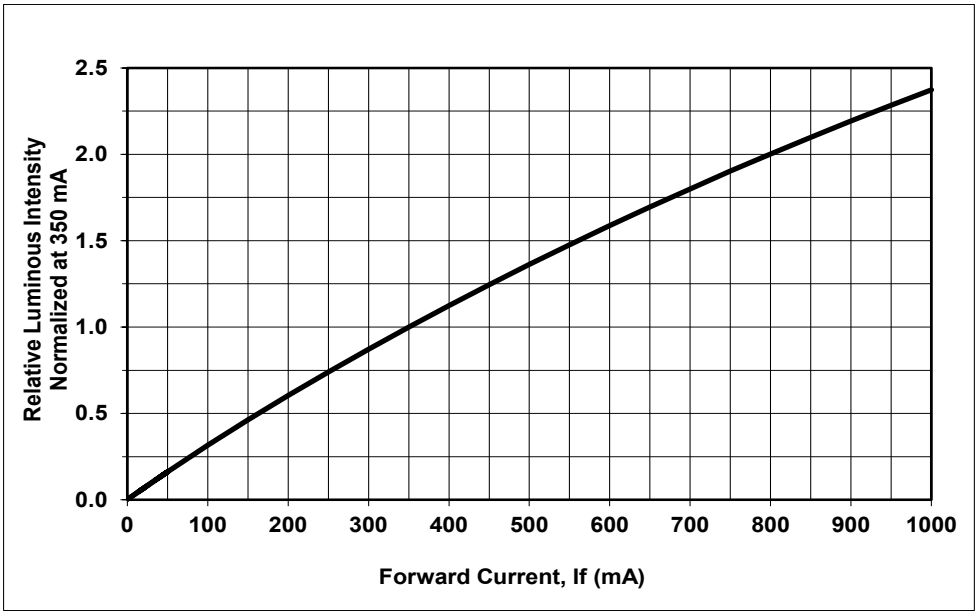
Notes:

1. Maximum ratings depend on package. Maximum drive current is determined by the LED junction temperature and lifetime requirements of the application.
2. Brightness values are measured in an integrating sphere using gold plated TO39 headers without encapsulation.
3. The typical spectra half-width of the XGM-3535 SMD is < 25 nm.
4. Cauled XGM LED chips are Class 1 ESD sensitive.
5. Tapes should be stored vertically, not horizontally. Stacking of tapes can place excessive pressure on the bond pads of the LED, resulting in reduced wire bonding strength.

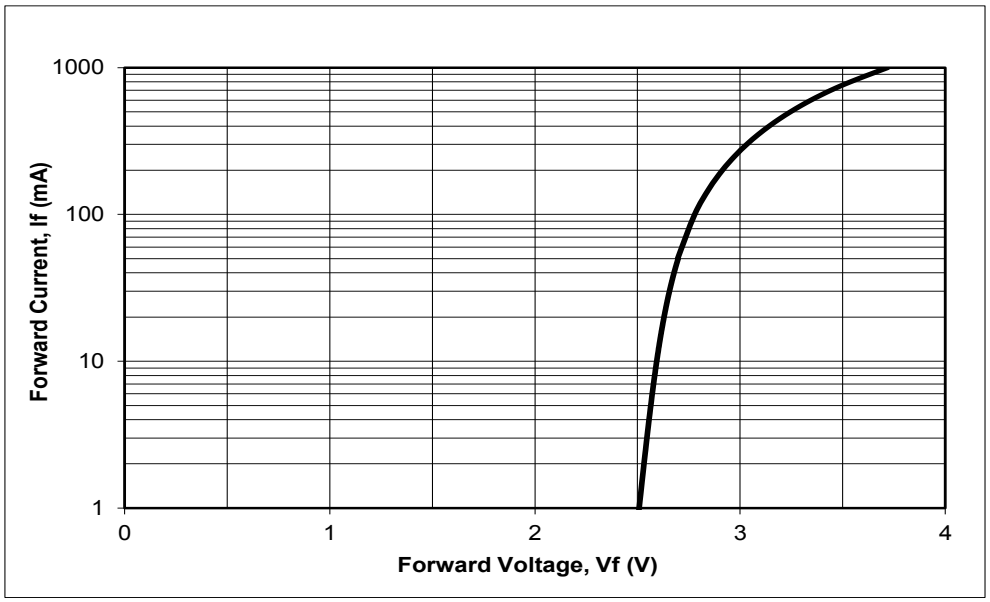
XGM-3535 SMD

Characteristic Curves

The following curves represent typical performance of the XGM-3535 high power die. Actual performance will vary slightly for different power and dominant wavelength bins.

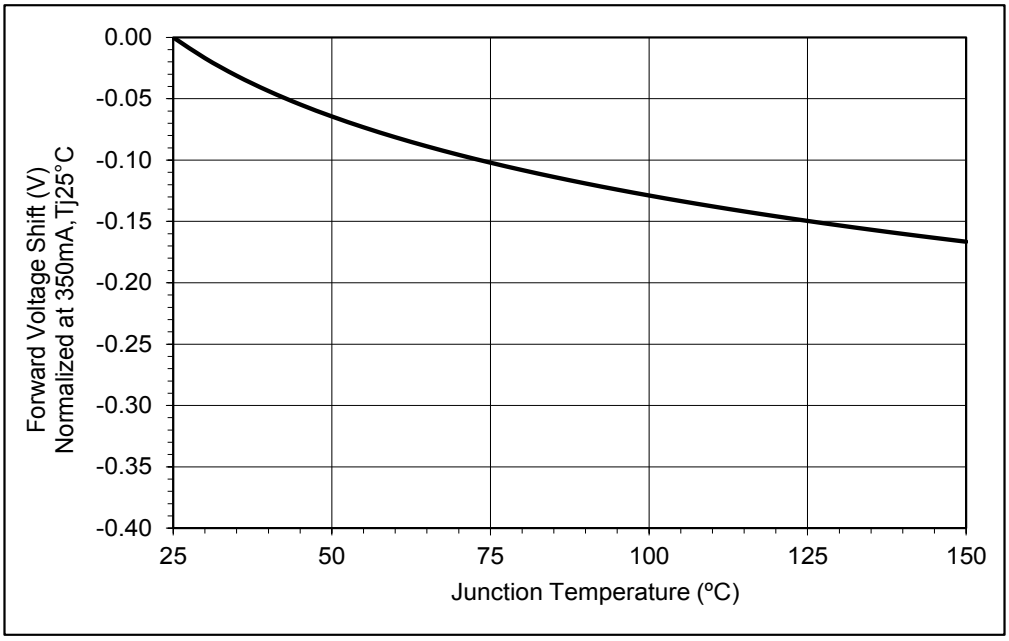


Relative Luminous Intensity vs. Forward Current (tested on a probe station)

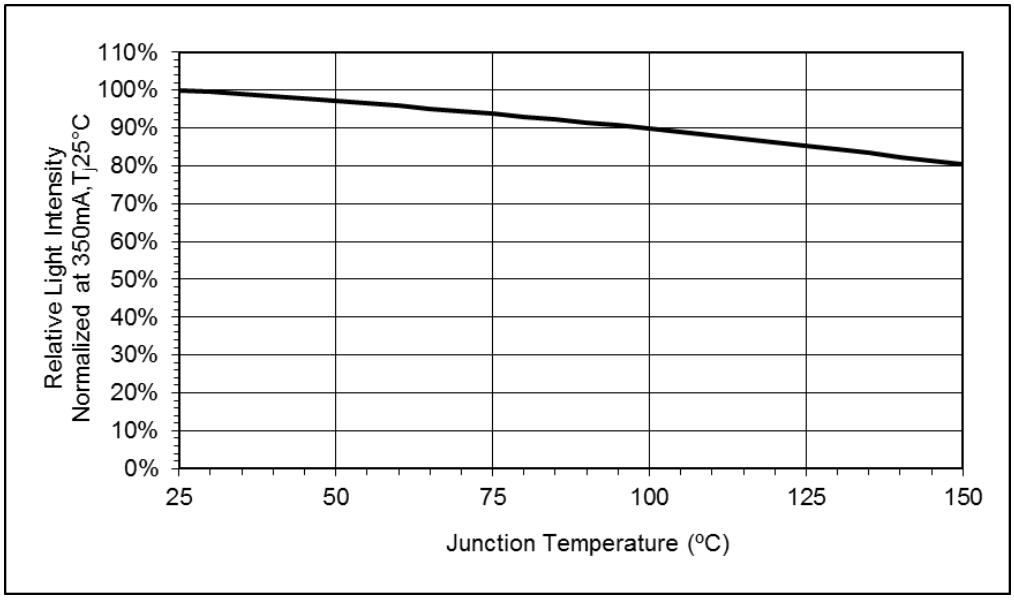


Forward Current vs. Forward Voltage (T_j = 25°C)

XGM-3535 SMD



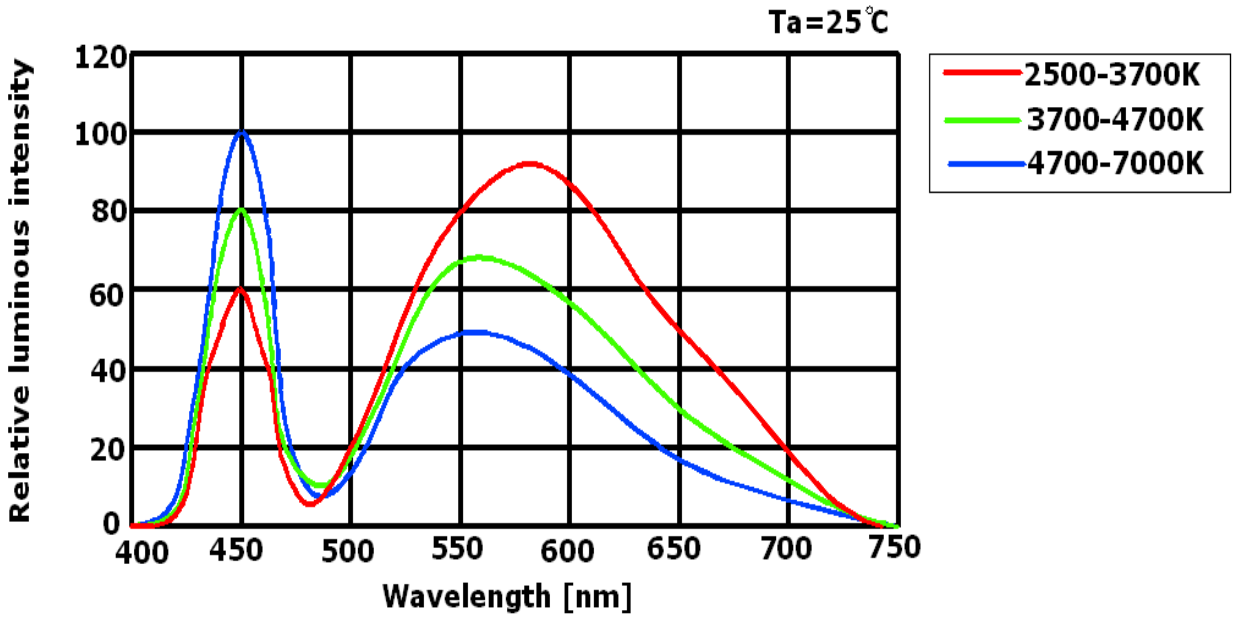
Forward Voltage vs. Junction Temperature



Relative Light Output vs. Junction Temperature

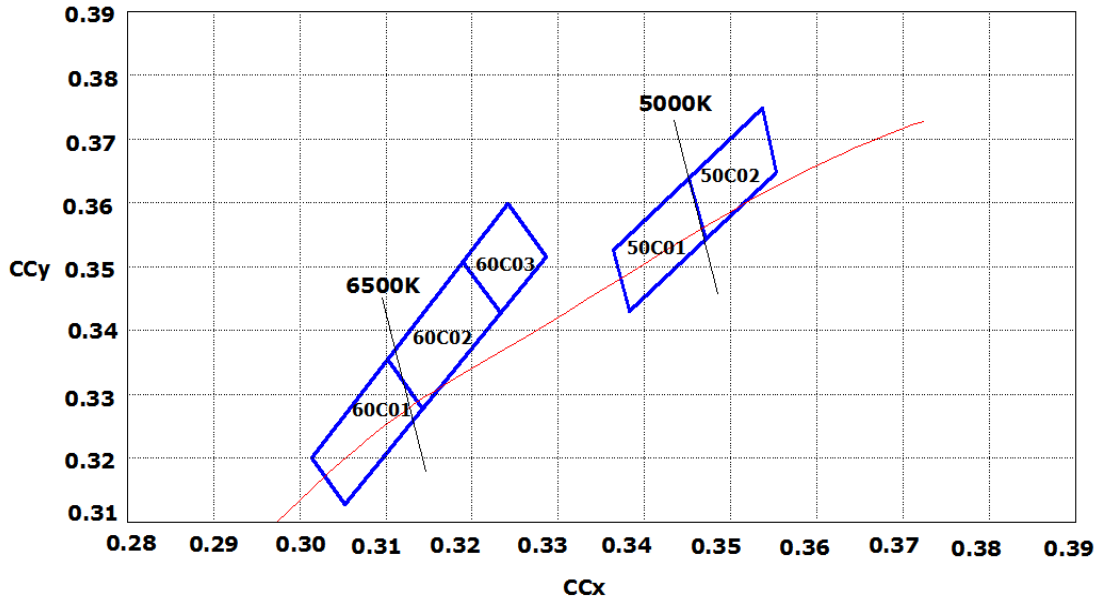
XGM-3535 SMD

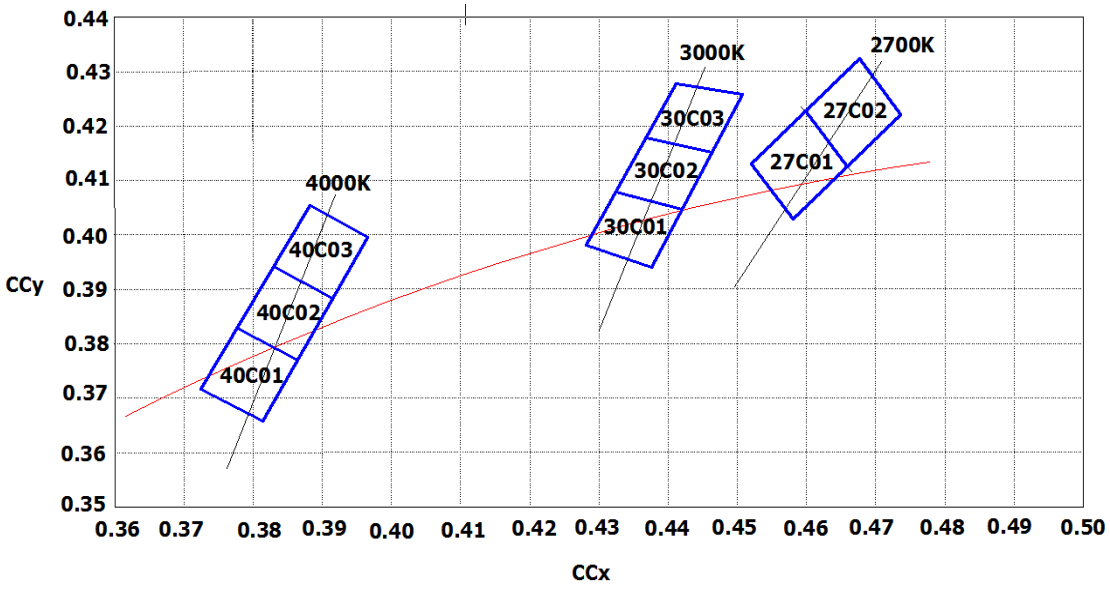
Spectrum



XGM-3535 SMD

Typical CCT Binning





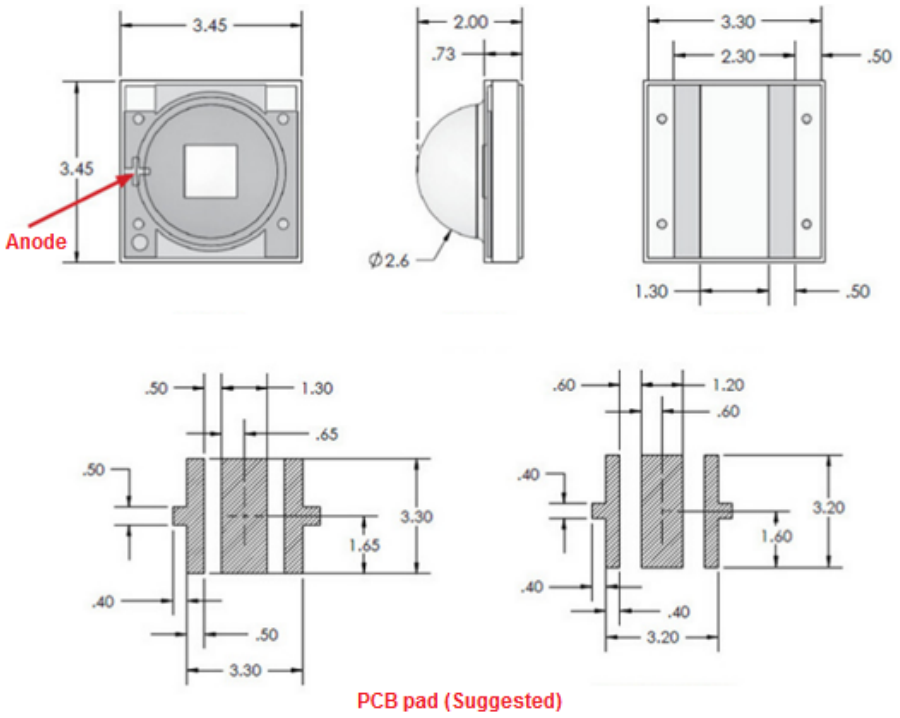
LED Datasheet

Typical Binning Code

2700K								
Rank	CIE-X	CIE-Y	Rank	CIE-X	CIE-Y	Rank	CIE-X	CIE-Y
27C01 (2600-2800K)	0.4481	0.4152	**27C02** (2600-2800K)	0.4583	0.424			
	0.4537	0.4031		0.464	0.4116			
	0.464	0.4116		0.4744	0.4204			
	0.4583	0.424		0.4685	0.4329			
3000K								
Rank	CIE-X	CIE-Y	Rank	CIE-X	CIE-Y	Rank	CIE-X	CIE-Y
30C01 (2900-3100K)	0.4271	0.399	**30C02** (2900-3100K)	0.4494	0.4153	**30C03** (2900-3100K)	0.4386	0.4181
	0.4373	0.3964		0.4494	0.4153		0.4494	0.4153
	0.4433	0.4057		0.4494	0.4153		0.4554	0.4246
	0.4328	0.4085		0.4386	0.4181		0.4443	0.4276
4000K								
Rank	CIE-X	CIE-Y	Rank	CIE-X	CIE-Y	Rank	CIE-X	CIE-Y
40C01 (3900-4100K)	0.3708	0.3712	**40C02** (3900-4100K)	0.376	0.3818	**40C03** (3900-4100K)	0.3822	0.3945
	0.3812	0.366		0.3859	0.3762		0.392	0.3888
	0.3859	0.3762		0.392	0.3888		0.3974	0.4002
	0.376	0.3818		0.3822	0.3945		0.3879	0.4061
5000K								
Rank	CIE-X	CIE-Y	Rank	CIE-X	CIE-Y			
50C01 (5000-5300K)	0.335	0.3518	**50C02** (4700-5000K)	0.3444	0.367			
	0.3379	0.3397		0.3469	0.3542			
	0.3469	0.3542		0.3558	0.3688			
	0.3444	0.367		0.3539	0.3824			
6500K								
Rank	CIE-X	CIE-Y	Rank	CIE-X	CIE-Y	Rank	CIE-X	CIE-Y
60C01 (6500-7000K)	0.3017	0.3192	**60C02** (6000-6500K)	0.3104	0.3353	**60C03** (5700-6000K)	0.3203	0.3531
	0.3064	0.3124		0.3146	0.3271		0.3239	0.3428
	0.3146	0.3271		0.3239	0.3428		0.3275	0.35
	0.3104	0.3353		0.3203	0.3531		0.3236	0.3591

XGM-3535 SMD

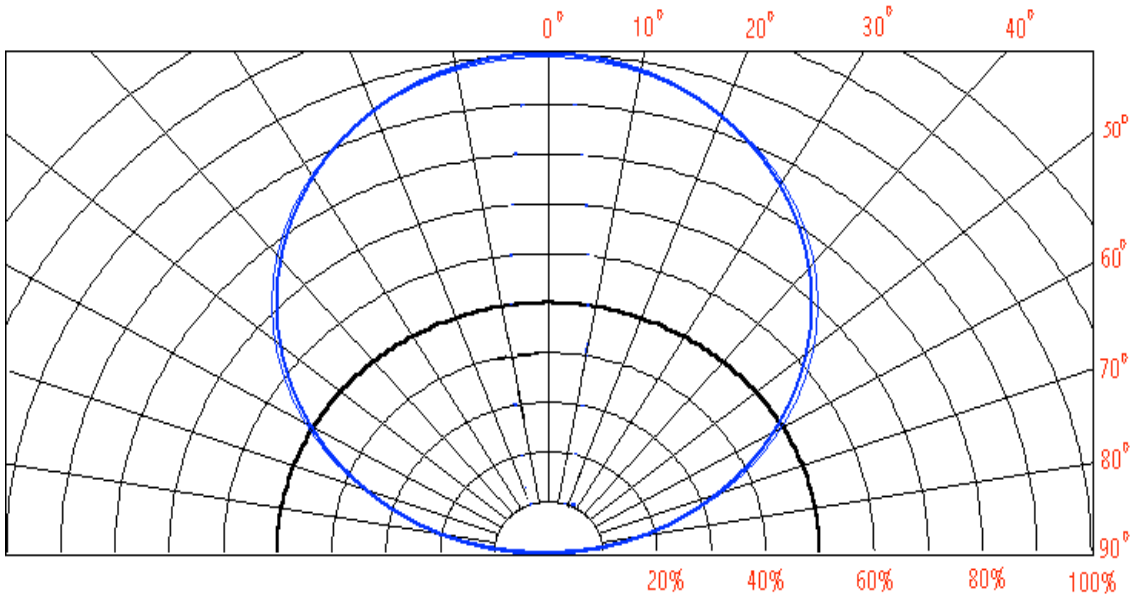
Dimensions



XGM-3535 SMD

Typical Radiation Pattern

This is a typical radiation pattern of the XGM-3535 SMD. Actual pattern will vary slightly for each chip.

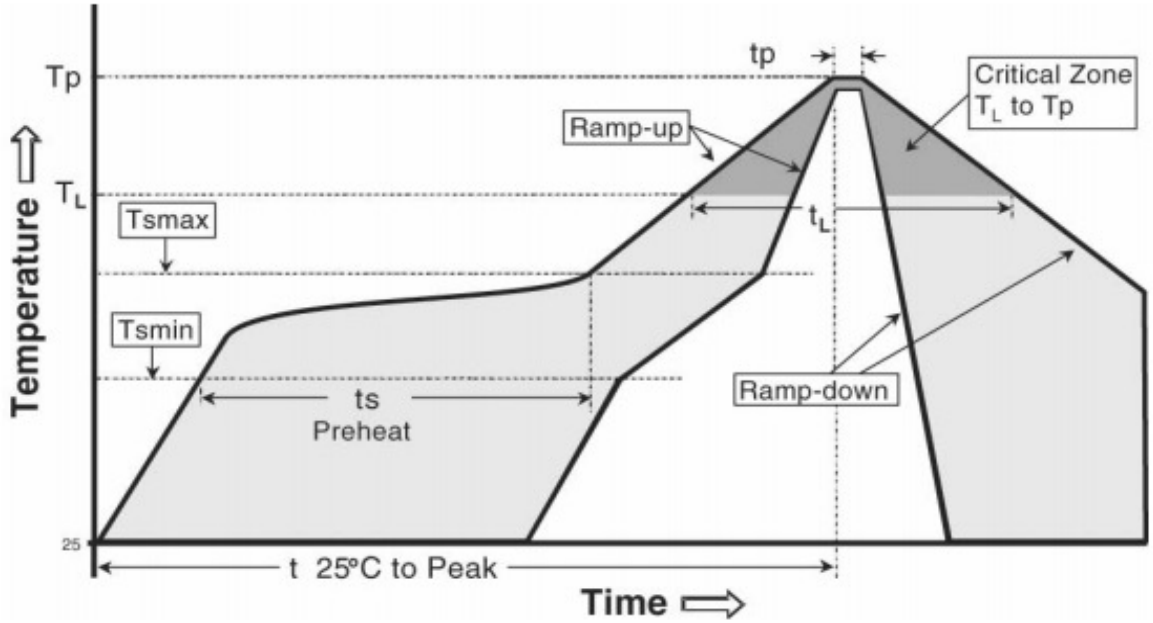


Typical Radiation Pattern (350 mA Operation)

XGM-3535 SMD

Reflow Solder Specifications

The Dochips product is compatible with JEDEC J-STD-020C, following the profile and parameters listed below.



Profile Feature	Specification Using Lead Free Solder
Average Ramp-Up Rate (Tsmax to Tp)	3°C / second max
Preheat Temperature Min (Tsmin)	150°C
Preheat Temperature Max (Tsmax)	200°C
Preheat Time (Tsmin to Tsmax)	60-180 seconds
Temperature (T_L)	217°C
Time Maintained Above Temperature (T_L)	60-150 seconds
Peak/Classification Temperature (T_P)	260°C
Time Within 5°C of Actual Peak Temperature (tp)	20-40 seconds
Ramp Down Rate	6°C / second max
Time 25°C to Peak Temperature	8 minutes max