深圳成光兴光电技术股份有限公司
SHENZHEN CGX OPTOELECTRONIC TECHNOLOGY，INC.

樣 品 規 格 承 認 書

SAMPLE APPROVAL SHEET

客 戶 名 稱
Company Name ： ____________________

产 品 型 號
Part Number： CGX-3838IRPC/D20A90

送 樣 日 期
Sample Date： ____________________

APPROVED SIGNATURES（供應商確認）		
核准	品保	工程

客戶確認：☐樣品承認通過 ☐不予承認需重新送樣 ☐不予承認不用送樣

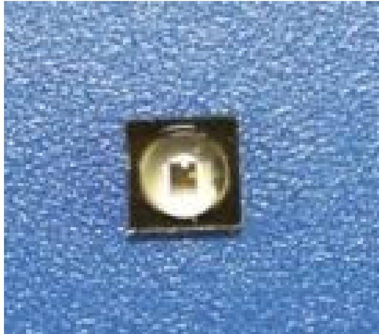
客戶建議：

APPROVED SIGNATURES（客戶確認）		
核准	工程	品保

请贵司确认回传，谢谢！

Add：深圳市龙华新区观澜章阁村宝观科技园 B 栋
TEL：86-755-66631006 FAX：86-755-61899639
E-mail:szcgx@szcgx.com Http:www.szcgx.com

High-Power EMC packaging LED



Features and Benefits

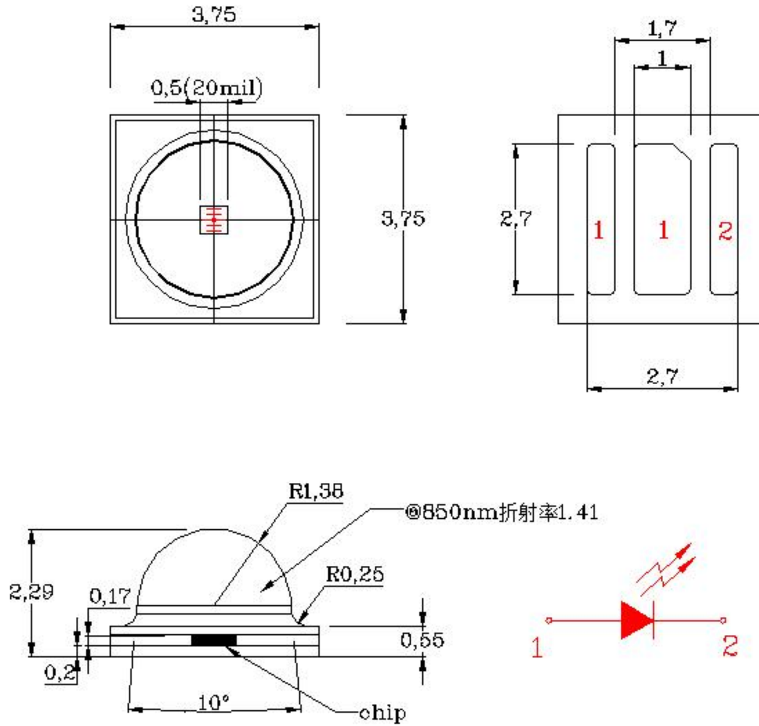
- IR lightsource with high efficiency
- Low thermal resistance
- Peak wavelength 850 nm
- Superior Corrosion Robustness (see chapter package outlines)
- Luminous angle: 90°
- Computable with automatic placement equipment
- Available on tape and reel
- RoHS-compliant

Applications

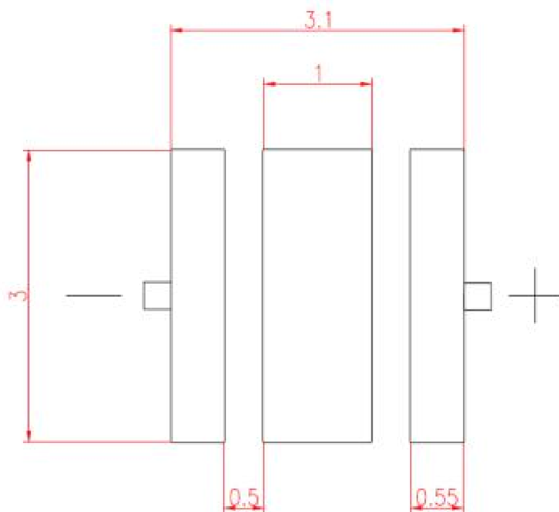
- Infrared Illumination for cameras
- Surveillance systems
- Machine vision systems
- Eye tracking systems
- Wireless communication

Package Dimension

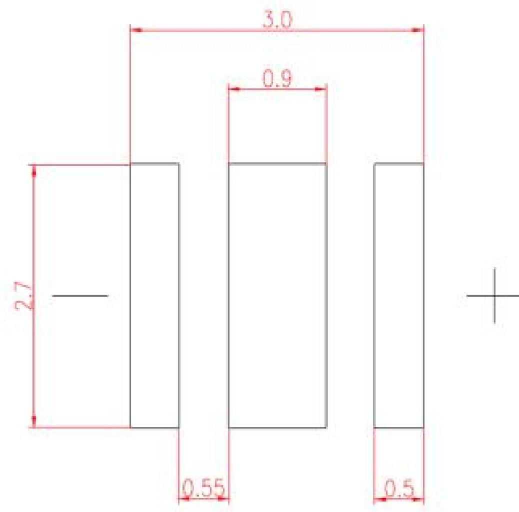
Package Dimension



Recommended solder pad



Recommended stencil opening



Notes：1、All dimensions are in millimeters.

2、Tolerance is ±0.25mm unless otherwise noted.

Absolute Maximum Ratings at Ta=25℃

Parameter	Symbol	MAX	Unit
Power Dissipation at(or below) 25 ℃ free air temperature	P_d	0.7	W
Peak Forward Current (1/10 Duty Cycle,0.1ms Pulse Width)	I_{FP}	600	mA
Continuous Forward Current	I_F	400	mA
Reverse Voltage	V_R	5	V
Operating Temperature Range	T_{opr}	-40℃ to +85℃	
Storage Temperature Range	T_{stg}	-40℃ to +100℃	
Junction Temperature	Tj	125℃	
Reflow soldering temperature Max	T_{sol}	230℃ or 260℃ for 10sec	

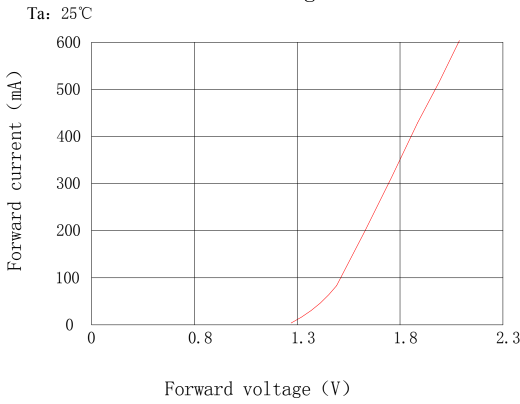
Electrical Optical Characteristics at Ta=25℃

Parameter	Symbol	Min	Typ	Max	Uni	Test Condition
Total Radiant Flux	Φe	----	256	-----	mW	I_F=350mA
Viewing Angle	$2\theta_{1/2}$	----	90	-----	Deg	
	$2\theta_{1/10}$	----	140	-----		
Peak Emission Wavelength	λp	840	855	865	nm	I_F=350mA
Spectral Line Half-Width	Δλ	----	40	----	nm	I_F=350mA
Forward Voltage	V_F	----	1.8	2.1	V	I_F=350mA
Reverse Current	I_R	----	----	10	μA	V_R=5V
Thermal Resistance	(Rth j-sp)	----	6	----	℃/W	I_F=350mA
Electrostatic Discharge	ESD	2000	----	----	V	

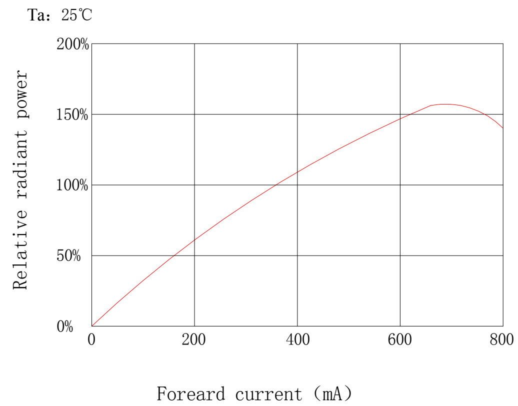
Wafer manufacturer information: EPISTAR

Typical Electro-Optical Characteristics Curve

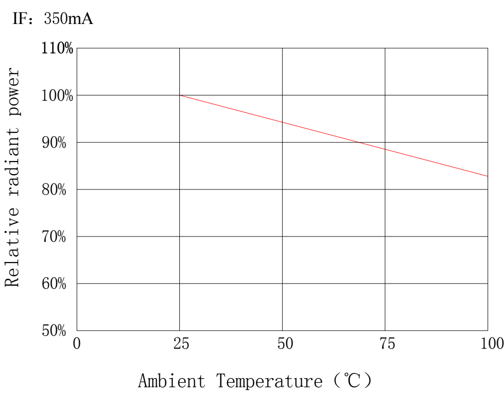
Forward current Vs.
Forward voltage



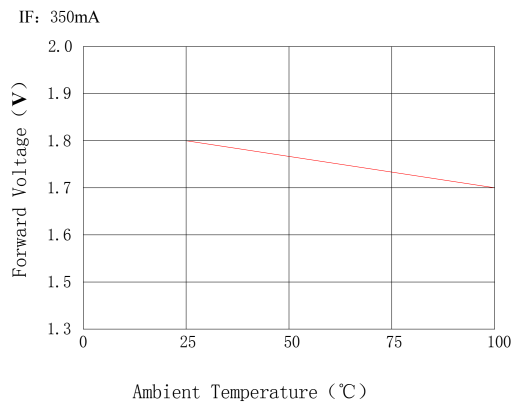
Relative Radiant power
vs.Forward Current



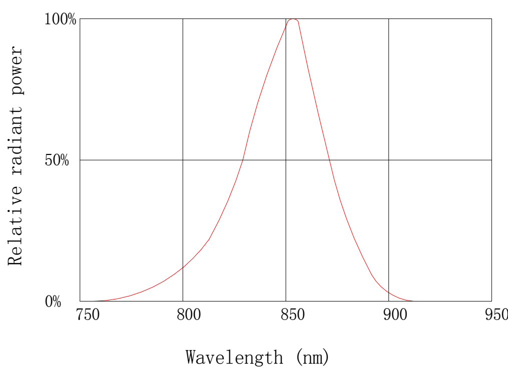
Relative Radiant power
vs.Ambient Temperature



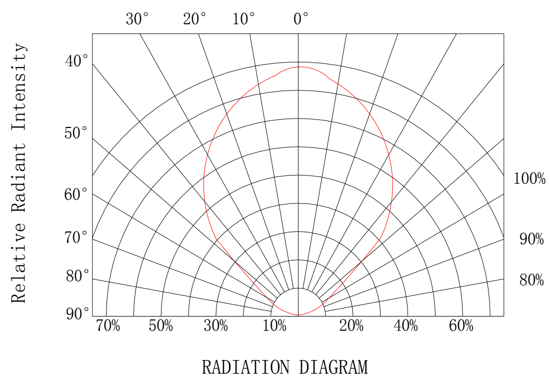
Forward Voltage vs.
Ambient Temperature



Spectral Distribution



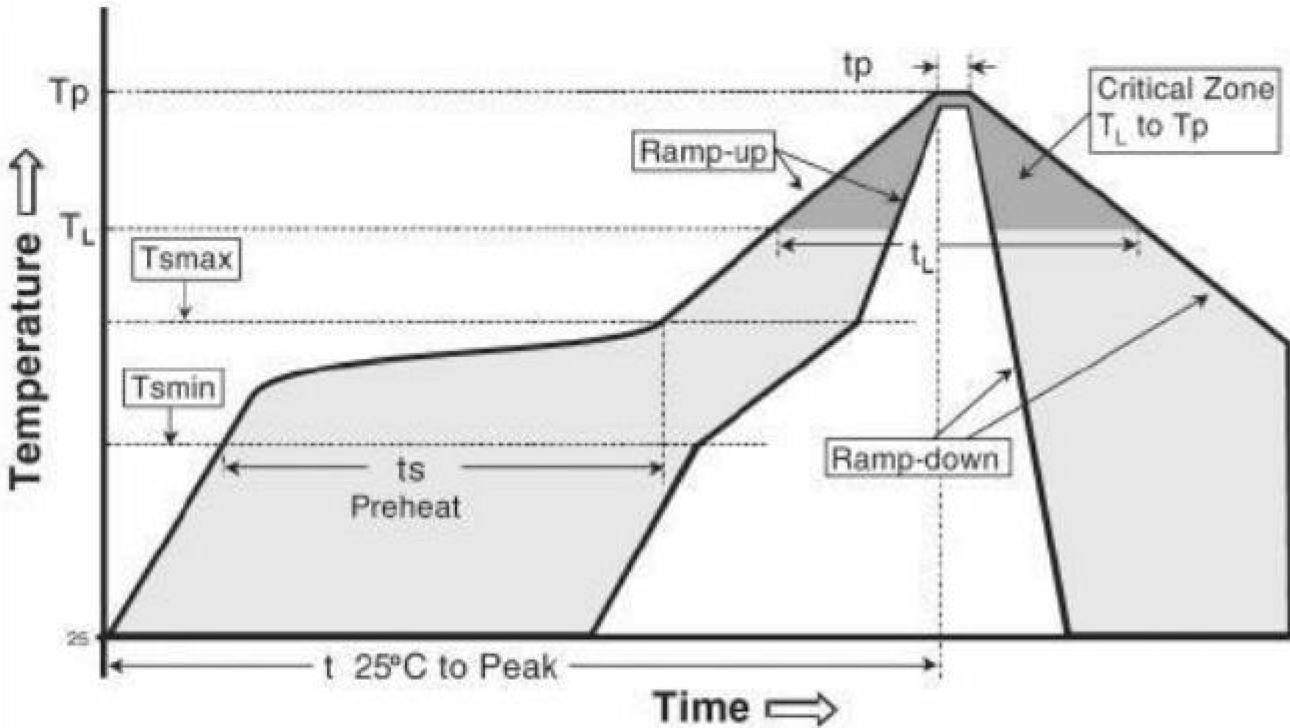
Relative Radiant Intensity
vs. Angular Displacement



Reflow Soldering Characteristics

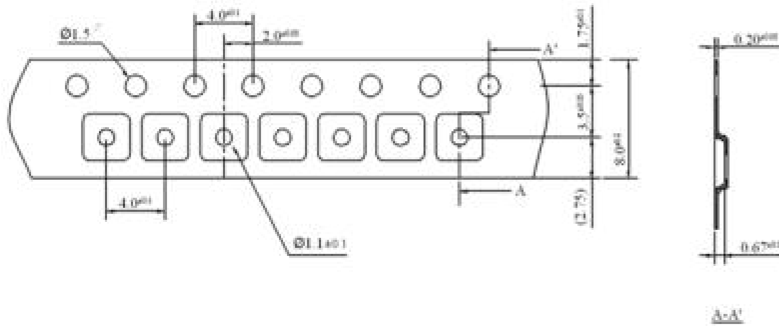
For Reflow Process

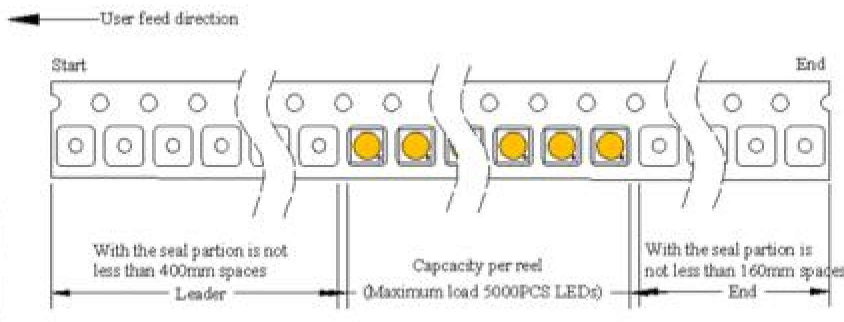
1. 3838 series are suitable for SMT processes.
2. Curing of glue in oven must be according to standard operation flow processes.



Reflow soldering	
Temperature Min (Tsmin) Temperature Max (Tsmax) Time(ts)from (Tsmin to Tsmax)	150℃ 200℃ 60-120 seconds.
Ramp-up rate (TL to Tp)	3℃/seconds max.
Liquidous temperature(TL) Time(tL) maintained above TL	217℃ 60-150 seconds
Peak package body temperature(Tp)	260℃ max
Time (tp) within 5℃ of the specified classification temperature(Tc).	30 seconds max
Ramp-down rate (Tp to TL)	6℃/second max
Time 25℃ to peak temperature	8 min max

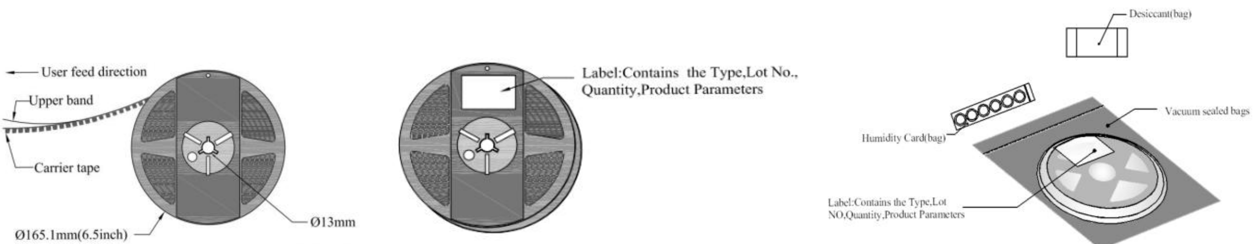
Package Dimensions





- Quantity : Max 2000pcs/Reel
- Cumulative Tolerance : Cumulative Tolerance/10 pitches to be ±0.2mm
- 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
- Package : P/N, Manufacturing data Code No. and Quantity to be indicated on a damp proof Package

Reel Packaging



Reliability test items and test conditions

The reliability of products shall be satisfied with items listed below.
Confidence level：90%
LTPD (group of permitted defect rate): 10%

No.	Item	Test Conditions	Test Hours/ Cycles	Sample Sizes	Ac/Re	Reference Standard
1	REFLOW Soldering	Temp. : 260℃±5℃	5secs	22PCS	0/1	JEITA ED-4701 300 302
2	Temperature Cycle	H : +100℃ 15min ～5 min L : -40℃ 15min	100Cycles	22PCS	0/1	JEITA ED-4701 100 305
3	Thermal Shock	H : +100℃ 5min ～ 10 sec L : -40℃ 5min	100Cycles	22PCS	0/1	MIL-STD-202G
4	High Temperature Storage	Temp. : 100℃	1000Hrs	22PCS	0/1	JEITA ED-4701 200 201
5	Low Temperature Storage	Temp. : -40℃	1000Hrs	22PCS	0/1	JEITA ED-4701 200 202
6	DC Operating Life	IF = 350 mA	1000Hrs	22PCS	0/1	Tested with CGX standard
7	High Temperature/ High Humidity	85℃/RH85%	1000Hrs	22PCS	0/1	JEITA ED-4701 100 103

Notes: Failure Judgement Criteria: IR≥U×2 Ie≤L×0.8 VF≥U×1.2

U: Upper Specification Limit L: Lower Specification Limit

Caution

1. Reflow soldering is recommended not to be done more than two times. In the case of more than 24 hours passed soldering after first, LEDs will be damaged.
2. Repairs should not be done after the LEDs have been soldered. When repair is unavoidable, suitable tools must be used.
3. Die slug is to be soldered.
4. When soldering, do not put stress on the LEDs during heating.
5. After soldering, do not warp the circuit board.

Notes on Lightning EMC Series soldering:

1. Recommend to use reflow machine.
2. Recommend to use heating plate soldering.
3. Manual soldering is not recommended.

Notes on reflow process:

1. To confirm whether the actual temperature curve in the reflow soldering conditions comply with recommended conditions. LEDs are guaranteed for one time reflow.
2. During reflow process do not apply force on LED active area.
3. After reflow process, PCB board should be cooled down before packing or storage.