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Brighten up The World With LED!



ISO/TS 16949:2009

BS-EM ISO 14001:2004

QC 900000 IECQ HSP98

PRODUCT DATASHEET

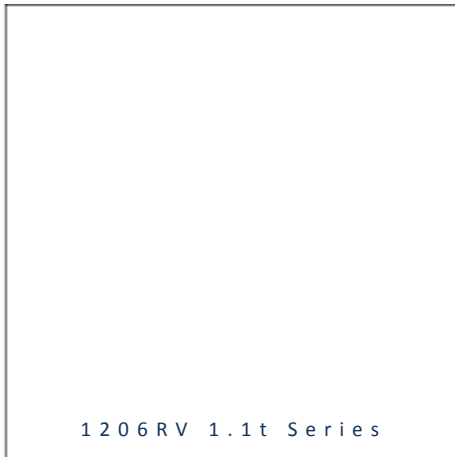


- ▶ PCB Reverse Mount
- ▶ 1206RV 1.1t Series
- ▶ Sky White (>9000K)

NOW16S97RV



Release Date: 16 March 2015 Version: A1.1



1206RV 1.1t Series



FEATURES:

- **Package:** PCB Reverse Mount SMT Package
- **Forward Current:** 5mA
- **Forward Voltage (typ.):** 2.8V
- **Luminous Intensity (typ.):** 80mcd @5mA
- **Colour:** Sky White
- **CCT:** 6340-27100K
- **Viewing angle:** 140°
- **Materials:**
 - Die: InGaN
 - Resin: Epoxy (Yellow diffused)
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+90°C
- **ESD:** 150V
- **Grouping parameters:**
 - Forward voltage
 - Luminous intensity
 - CIE Chromaticity
- **Soldering methods:** Reflow
- **Preconditioning:** acc. to JEDEC Level 3
- **Packing:** 8mm tape with 2000/reel, ø180mm (7")

APPLICATIONS:

- Backlighting
- Indication Light
- Switch light

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	25	mA
Peak Forward Current Duty 1/10@10KHz	I_{FP}	100	mA
Reverse Current @5V	I_R	50	μ A
Power Dissipation	PD	110	mW
Electrostatic Discharge	ESD	150	V
Operating Temperature	T_{OPR}	-40~+85	°C
Storage Temperature	T_{STG}	-40~+90	°C

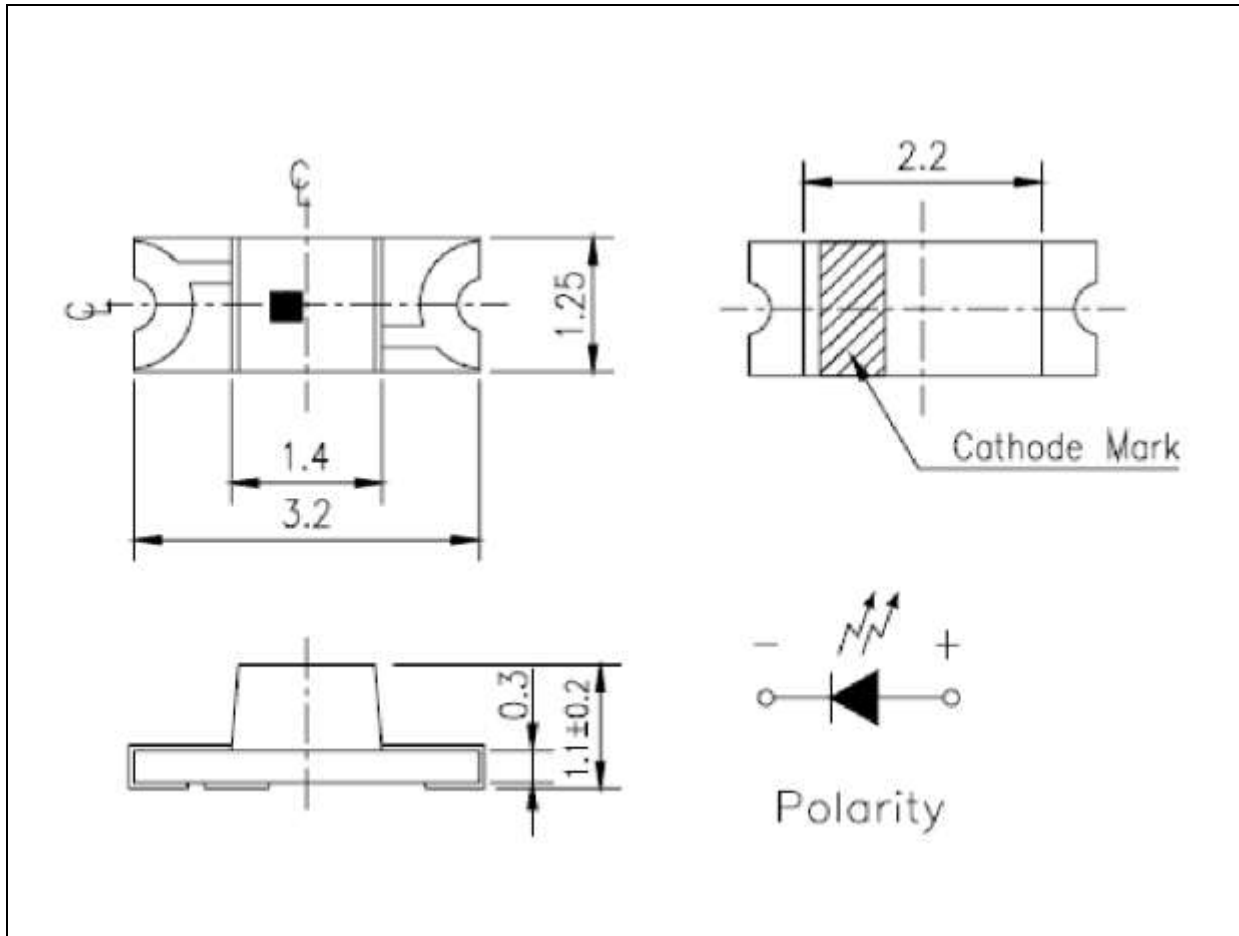
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	2.6	---	3.0	V	$I_F=5mA$
Luminous Intensity	I_V	57	80	112	mcd	$I_F=5mA$
Chromaticity Coordinates	X	0.274	---	0.314	---	$I_F=5mA$
	Y	0.226	---	0.347		
Colour Temperature	CCT	6340	8600	27100	K	$I_F=5mA$
Viewing Angle	$2\theta_{1/2}$	---	140	---	deg	$I_F=5mA$

1. Luminous intensity (I_V) $\pm 15\%$, Forward Voltage (V_F) $\pm 0.1V$, Viewing angle($2\theta_{1/2}$) $\pm 5\%$
2. IS standard testing

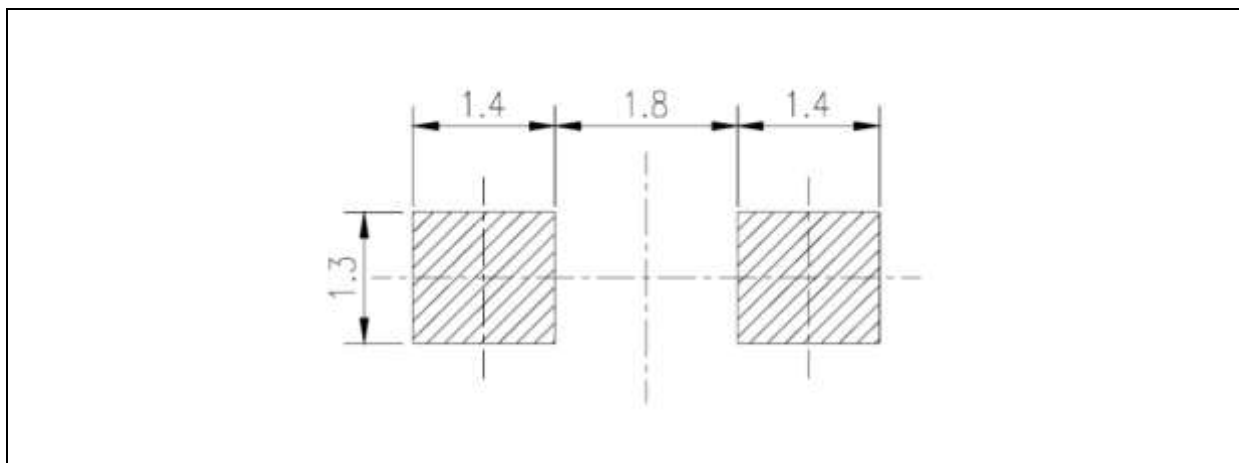
OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance ± 0.2 mm, unless otherwise noted.

Recommended Soldering Pad Dimension:



1. Dimensions are in millimetre (mm).
2. Tolerance ± 0.1 mm with angle tolerance $\pm 0.5^\circ$.

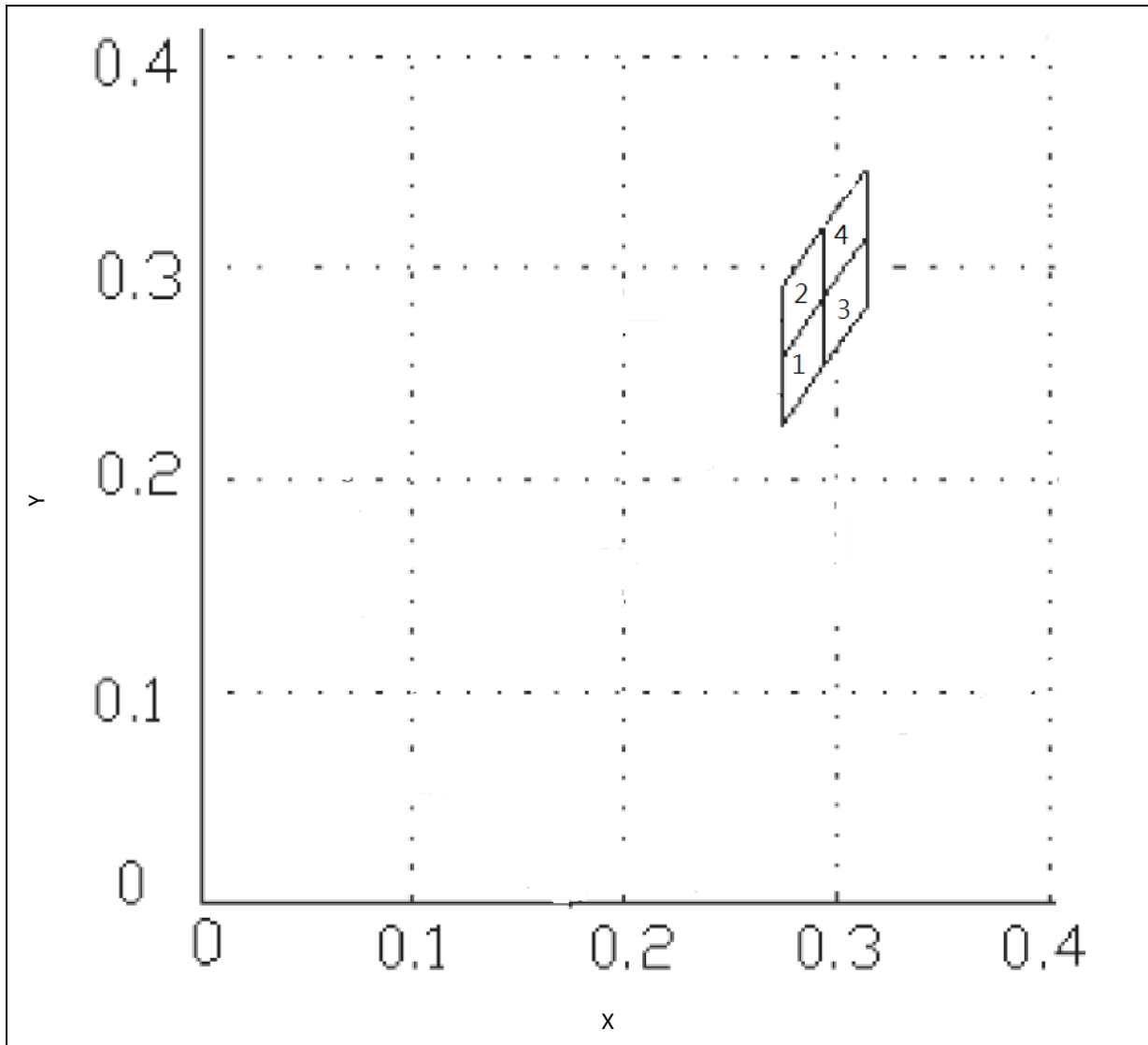
BINNING GROUPS:

 Forward Voltage Classifications ($I_F = 5\text{mA}$):

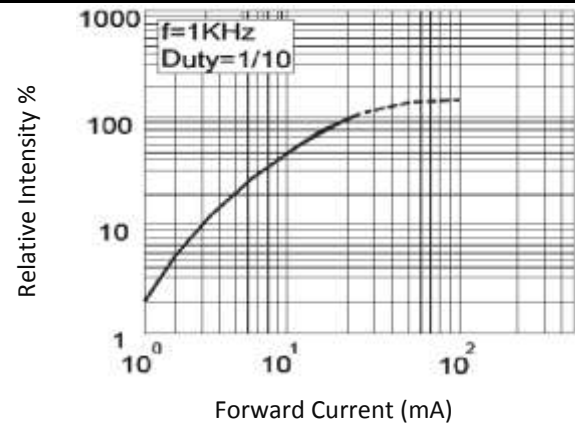
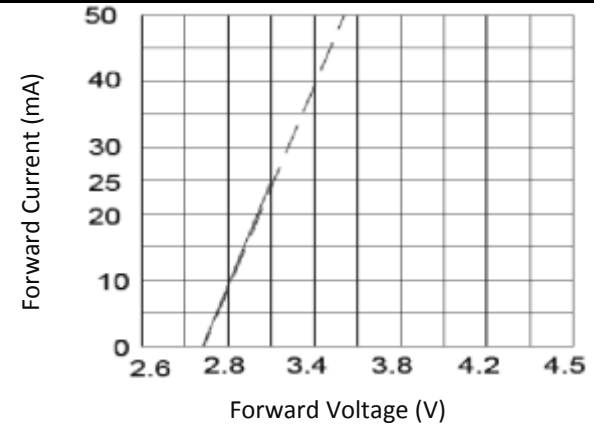
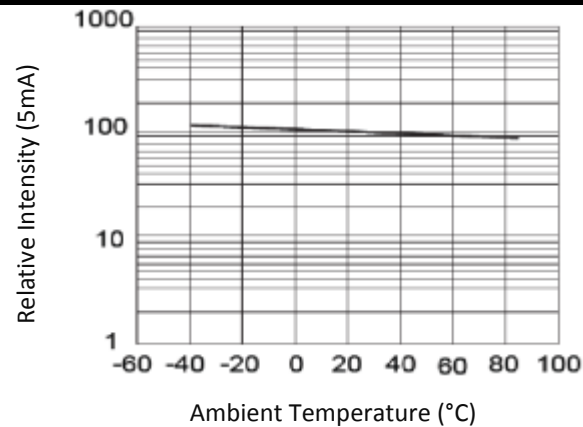
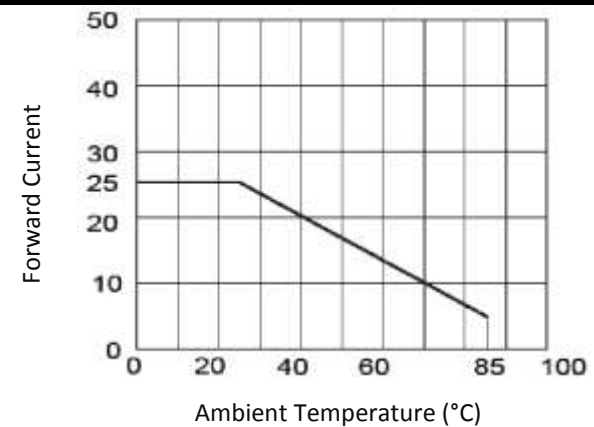
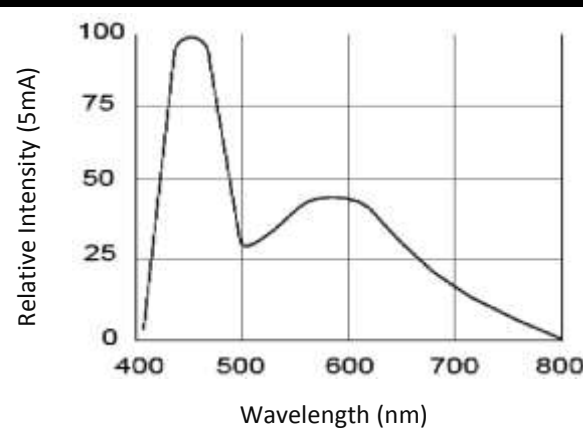
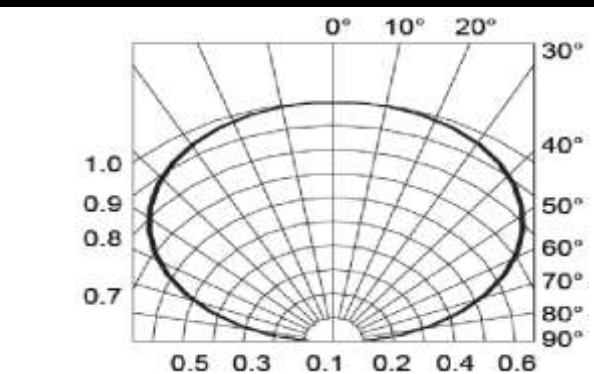
Code	Min.	Max.	Unit
28	2.6	2.7	V
29	2.7	2.8	
30	2.8	2.9	
31	2.9	3.0	

 Luminous Intensity Classifications ($I_F = 5\text{mA}$):

Code	Min.	Max.	Unit
P2	57	72	mcd
Q1	72	90	
Q2	90	112	

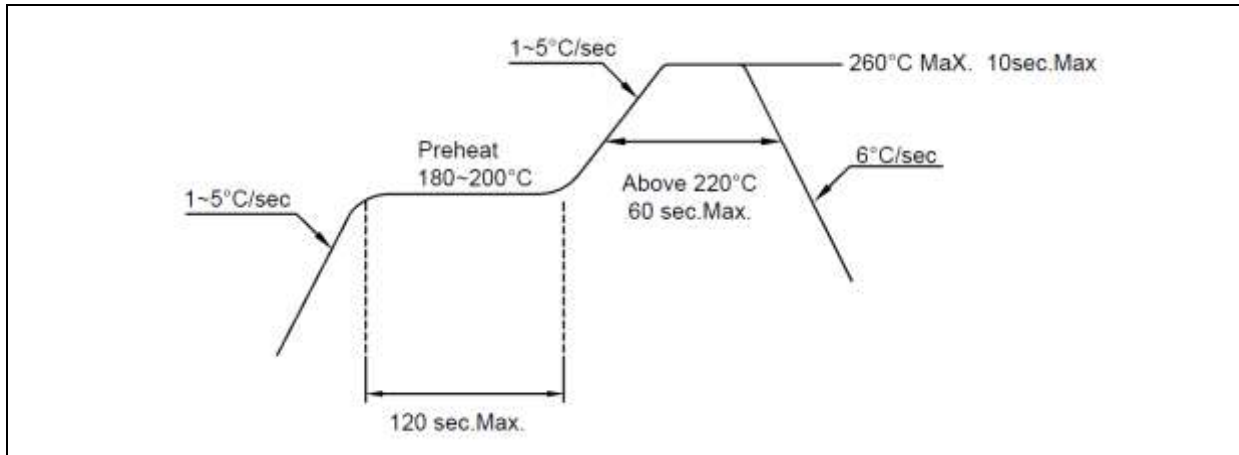
CIE CHROMATICITY DIAGRAM:

 Chromaticity Coordinates Classifications ($I_F = 5\text{mA}$):

	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
1	0.2740	0.2260	0.2740	0.2580	0.2940	0.2860	0.2940	0.2540
2	0.2740	0.2580	0.2740	0.2910	0.2940	0.3190	0.2940	0.2860
3	0.2940	0.2540	0.2940	0.2860	0.3140	0.3150	0.3140	0.2820
4	0.2940	0.2860	0.2940	0.3190	0.3140	0.3470	0.3140	0.3150

ELECTRO-OPTICAL CHARACTERISTICS:
Relative Intensity v.s. Forward Current

Forward Current v.s. Forward Voltage

Relative Intensity v.s. Temperature

Forward Current v.s. Temperature

Relative Intensity v.s. Wavelength

Directive Radiation


RECOMMENDED SOLDERING PROFILE:

Lead-free Solder:

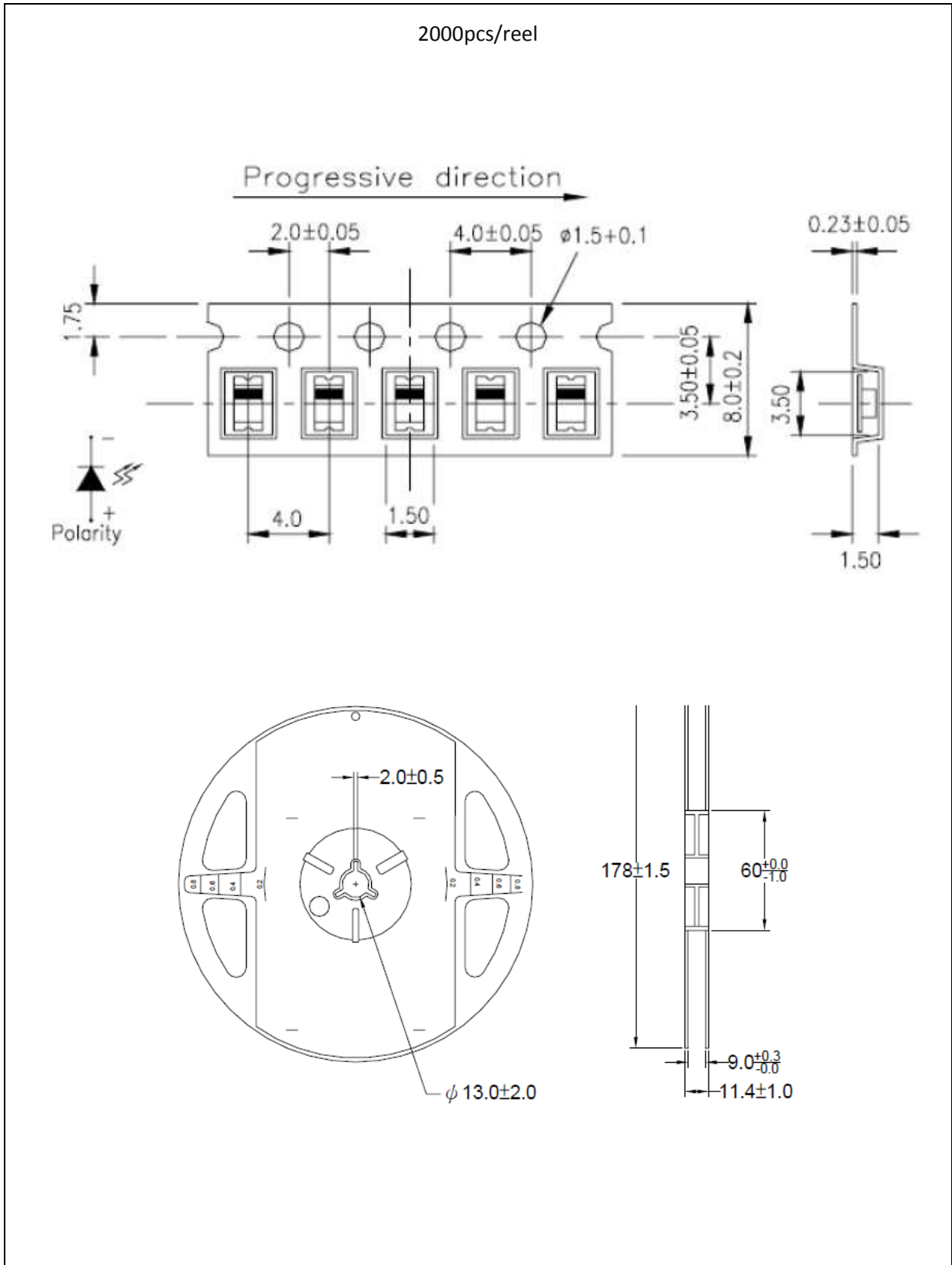


Note:

1. Maximum reflow soldering: 2 times.
2. Before, during, and after soldering, should not apply stress on the components and PCB board.

PACKING SPECIFICATION:

Reel Dimension:



PRECAUTIONS OF USE:

Storage:

It is recommended to store the products in the following conditions:

- Humidity: 60% R.H. Max.
- Temperature: 5°C~30°C (41°F ~86°F).

Shelf life in sealed bag: 12 month at 5°C~30°C and <60% R.H.

Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp-proof box with desiccating agent and apply baking at 60°C±5°C for 15hrs before use.

Baking:

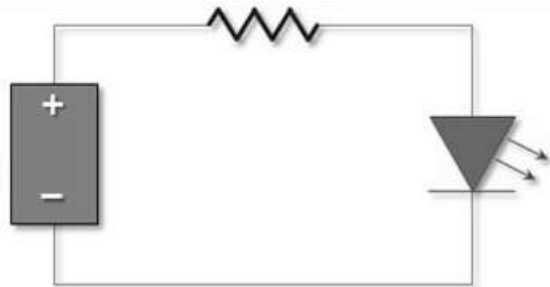
It is recommended to bake the LED before soldering if the pack has been unsealed for longer than 24hrs.

The suggested baking conditions are as followings:

- 70±3°C x 24hrs and <5%RH, taped / reel package.
- 100±3°C x 2hrs, bulk (loose) package.
- 130±3°C x 30min, bulk (loose) package.

It's normal to see slight color fading of carrier (light yellow) after baking in process.

Testing Circuit:



Must apply resistor(s) for protection (over current proof).

Cleaning:

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED carrier / package. Avoid putting any stress force directly on to the LED lens.

ESD (Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrostatic glove is recommended when handling the LED all time. All devices, equipment, machinery, work tables, and storage racks must be properly grounded.

In the events of manual working in process, make sure the devices are well protected from ESD at any time.

REVISION RECORD:

Version	Date	Summary of Revision
A1.0	13/03/2015	Datasheet set-up.
A1.1	16/03/2015	P/N add suffix RV indicating Reverse Mount.