Kingbright

2.0x1.25mm INFRARED EMITTING DIODE

Part Number: KP-2012SF4C

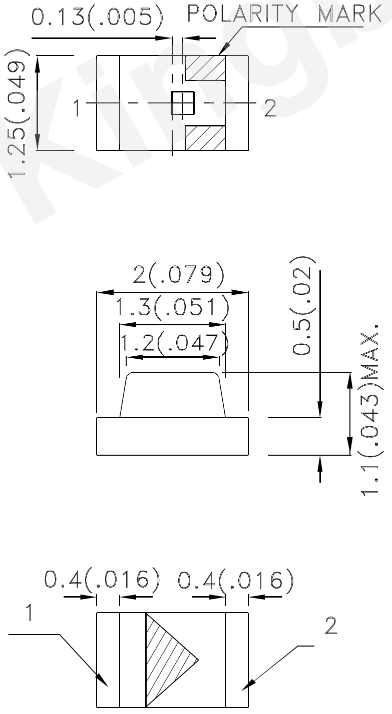
Features

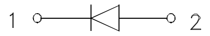
- 2.0mmx1.25mm SMT LED,1.1mm thickness.
- Mechanically and spectrally matched to the phototransistor.
- Package: 2000pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.

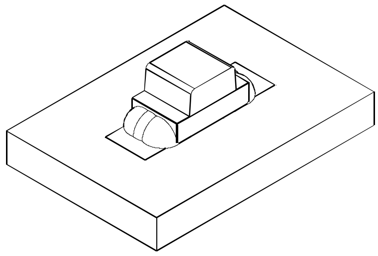
Description

SF4 Made with Gallium Aluminum Arsenide Infrared Emitting diodes.

Package Dimensions







Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.1(0.004") unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.

Selection Guide

Part No.	Dice	Lens Type	Po (mW/sr) [2] @ 20mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
KP-2012SF4C	SF4 (GaAlAs)	Water Clear	0.8	1.5	120°

Notes:
1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
2. Radiant Intensity/ luminous flux: +/-15%.
3. Radiant Intensity value is traceable to the CIE127-2007 compliant national standards.

Electrical / Optical Characteristics at TA=25°C

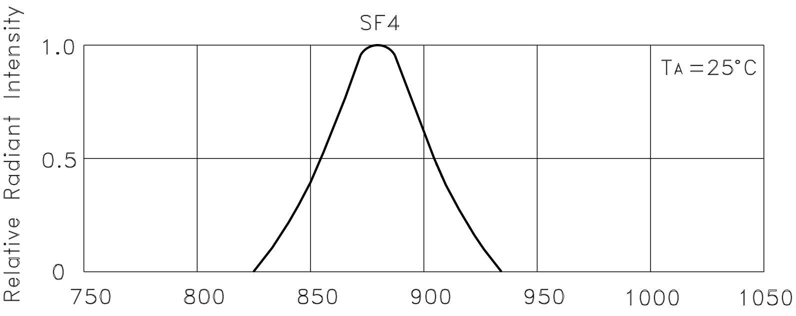
Parameter	P/N	Symbol	Typ.	Max.	Units	Test Conditions
Forward Voltage [1]	SF4	V_F	1.3	1.6	V	I_F=20mA
Reverse Current	SF4	I_R		10	uA	V_R = 5V
Capacitance	SF4	C	90		pF	V_F=0V;f=1MHz
Peak Spectral Wavelength	SF4	λ_P	880		nm	I_F=20mA
Spectral Bandwidth	SF4	$\Delta\lambda_{1/2}$	50		nm	I_F=20mA

Note:
1. Forward Voltage: +/-0.1V.
2.Wavelength value is traceable to the CIE127-2007 compliant national standards.

Absolute Maximum Ratings at TA=25°C

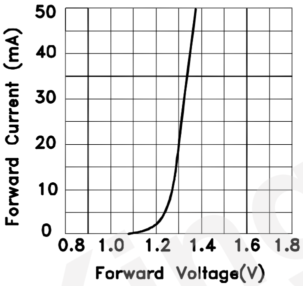
Parameter	Symbol	SF4	Units
Power dissipation	P_D	80	mW
DC Forward Current	I_F	50	mA
Peak Forward Current [1]	i_{FS}	1.2	A
Reverse Voltage	V_R	5	V
Operating Temperature	T_A	-40 To +85	°C
Storage Temperature	T_{STG}	-40 To +85	°C

Note:
1. 1/100 Duty Cycle, 10μs Pulse Width.

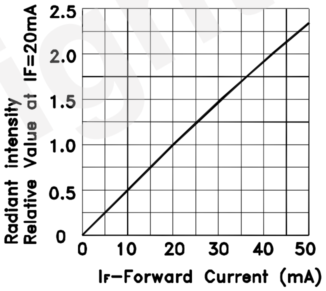


RELATIVE INTENSITY Vs. WAVELENGTH

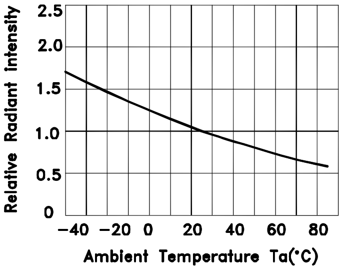
KP-2012SF4C



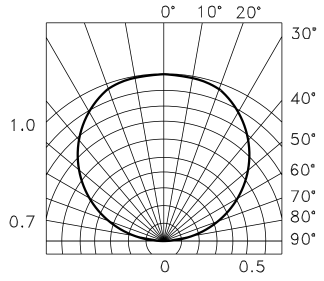
FORWARD CURRENT Vs. FORWARD VOLTAGE



RADIANT INTENSITY Vs. FORWARD CURRENT



RADIANT INTENSITY Vs. AMBIENT TEMPERATURE

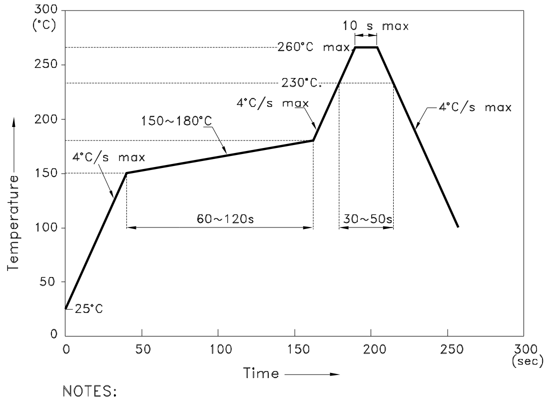


SPATIAL DISTRIBUTION

KP-2012SF4C

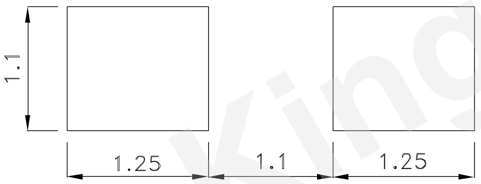
Reflow soldering is recommended and the soldering profile is shown below.
Other soldering methods are not recommended as they might cause damage to the product.

Reflow Soldering Profile For Lead-free SMT Process.

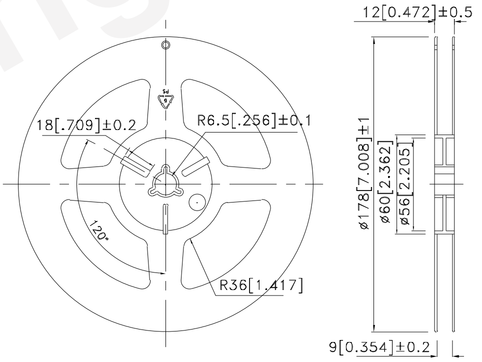


NOTES:
1.We recommend the reflow temperature 245°C(+/−5°C).The maximum soldering temperature should be limited to 260°C.
2.Don't cause stress to the epoxy resin while it is exposed to high temperature.
3.Number of reflow process shall be 2 times or less.

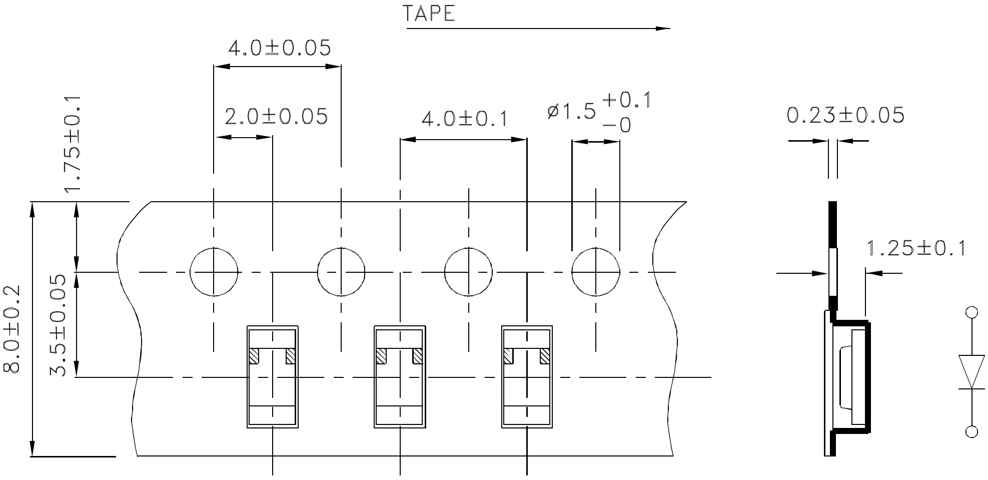
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



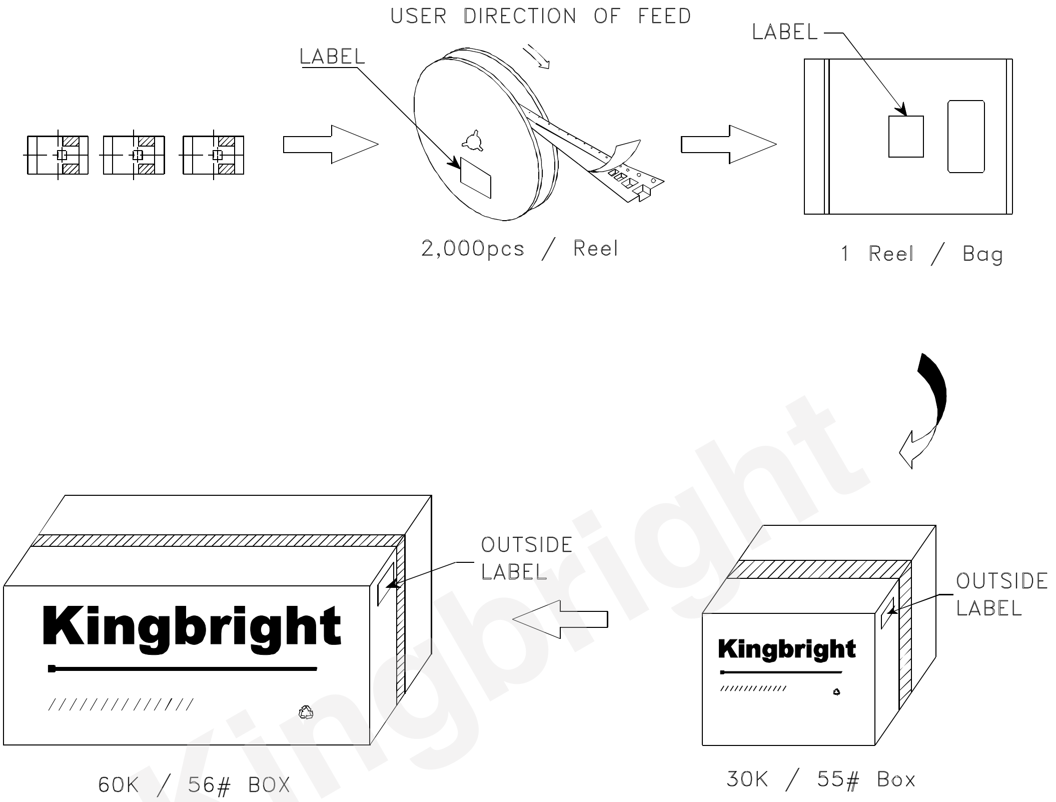
Reel Dimension

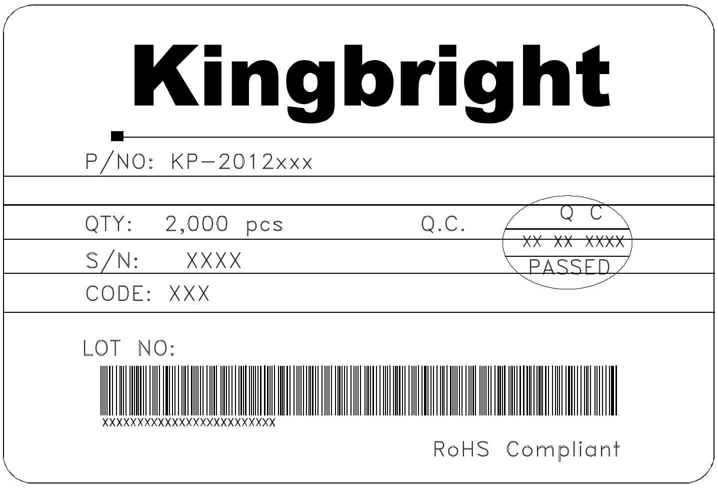


Tape Specifications (Units : mm)



PACKING & LABEL SPECIFICATIONS KP-2012SF4C





Kingbright

P/NO: KP-2012xxx

QTY: 2,000 pcs Q.C.

Q C
XX XX XXXX
PASSED

S/N: XXXX

CODE: XXX

LOT NO:

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RoHS Compliant

Detailed application notes are listed on our website.
http://www.kingbright.com/application_notes