Kingbright

**2.0x1.25mm INFRA-RED EMITTING DIODE**

AP2012F3C

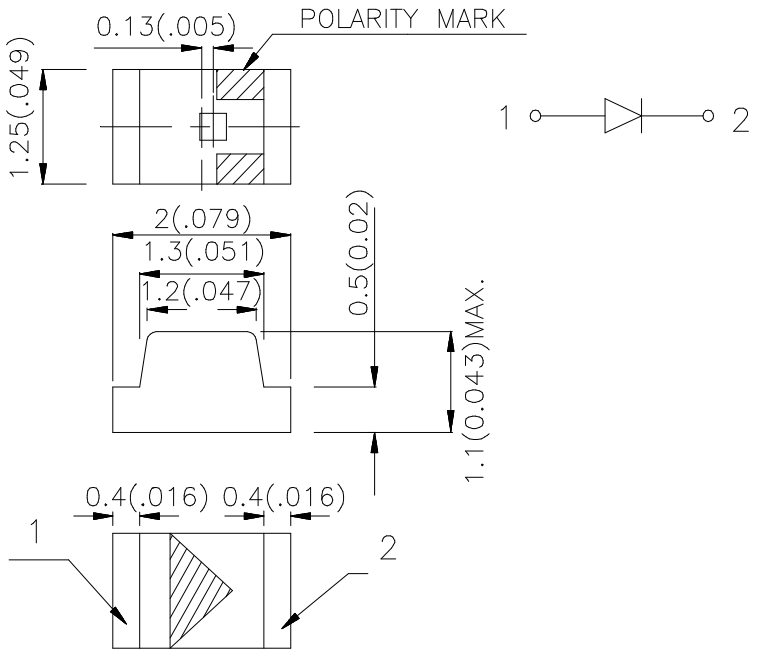
## Features

●2.0mmx1.25mm SMT LED,1.1mm THICKNESS.
●MECHANICALLY AND SPECTRALLY MATCHED TO THE PHOTOTRANSISTOR.
●WATER CLEAR LENS.
●PACKAGE: 2000PCS / REEL.
●RoHS COMPLIANT.

## Description

F3 Made with Gallium 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. Specifications are subject to change without notice.

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## Selection Guide

| Part No. | Dice | Lens Type | Po (mW/sr) @ 20mA | | Viewing Angle |
|---|---|---|---|---|---|
| | | | Min. | Typ. | 2θ1/2 |
| AP2012F3C | GaAs | WATER CLEAR | 0.4 | 1.2 | 120° |

Note:
1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

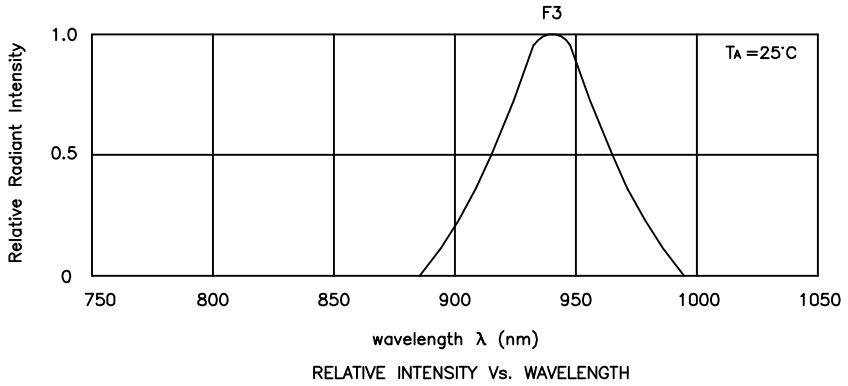
## Electrical / Optical Characteristics at $T_A$=25°C

| Item | P/N | Symbol | Typ. | Max. | Units | Test Conditions |
|---|---|---|---|---|---|---|
| Forward Voltage | F3 | $V_F$ | 1.2 | 1.6 | V | $I_F$=20mA |
| Reverse Current | F3 | $I_R$ | - | 10 | uA | $V_R$=5V |
| Capacitance | F3 | C | 90 | - | pF | $V_F$=0V;f=1MHz |
| Peak Spectral Wavelength | F3 | λP | 940 | - | nm | $I_F$=20mA |
| Spectral Bandwidth | F3 | Δλ1/2 | 50 | - | nm | $I_F$=20mA |

## Absolute Maximum Ratings at $T_A$=25°C

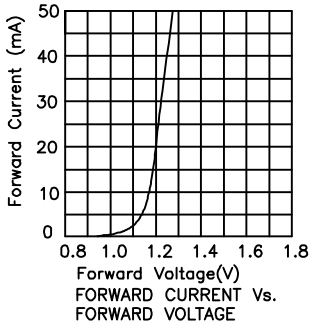
| Parameter | Symbol | F3 | Units |
|---|---|---|---|
| Power Dissipation | $P_T$ | 100 | mW |
| DC Forward Current | $I_F$ | 50 | mA |
| Peak Forward Current[1] | $i_{FS}$ | 1.2 | A |
| Reverse Voltage | $V_R$ | 5 | V |
| Operating Temperature | $T_A$ | -40 To +85 | °C |
| Storage Temperature | $T_{STG}$ | -40 To +85 | °C |

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

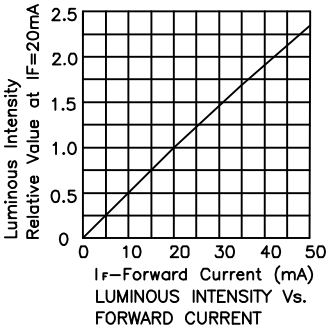


RELATIVE INTENSITY Vs. WAVELENGTH

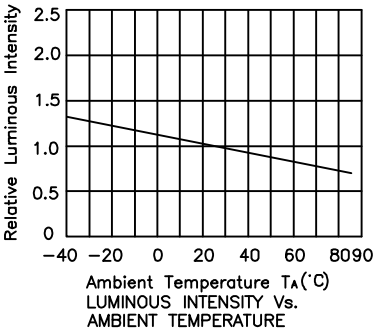
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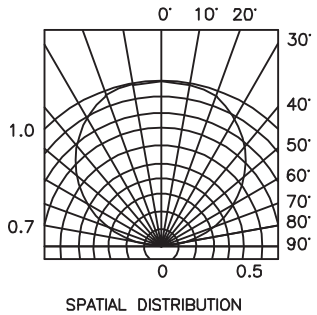
FORWARD CURRENT Vs.
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT



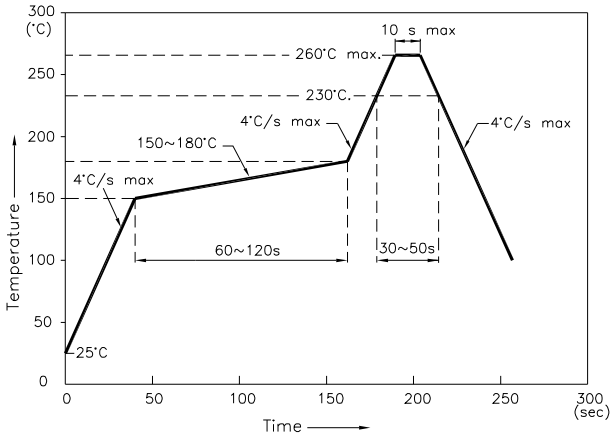
LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION

**AP2012F3C**

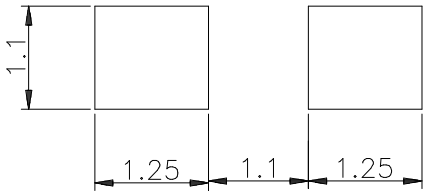
Reflow Soldering Profile For Lead-free SMT Process.



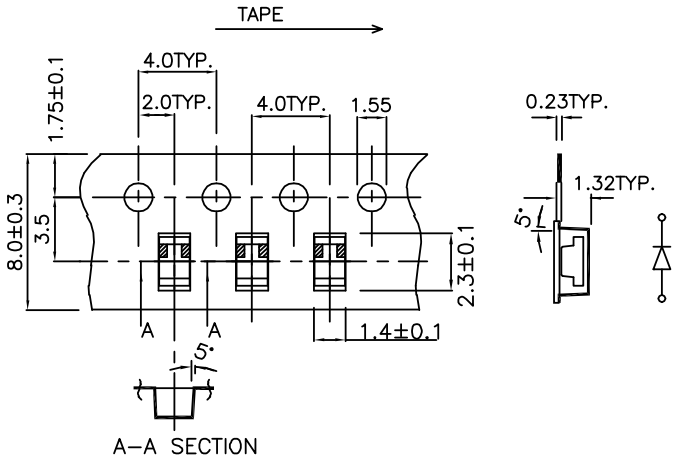

NOTES:

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)




## Tape Specifications (Units : mm)




Remarks:

If special sorting is required (e.g. binning based on forward voltage or radiant intensity), the typical accuracy of the sorting process is as follows:

1. Radiant Intensity: +/-15%
2. Forward Voltage: +/-0.1V

Note: Accuracy may depend on the sorting parameters.