Kingbright

**1.6x0.8mm INFRARED EMITTING DIODE**

Part Number: APT1608F3C

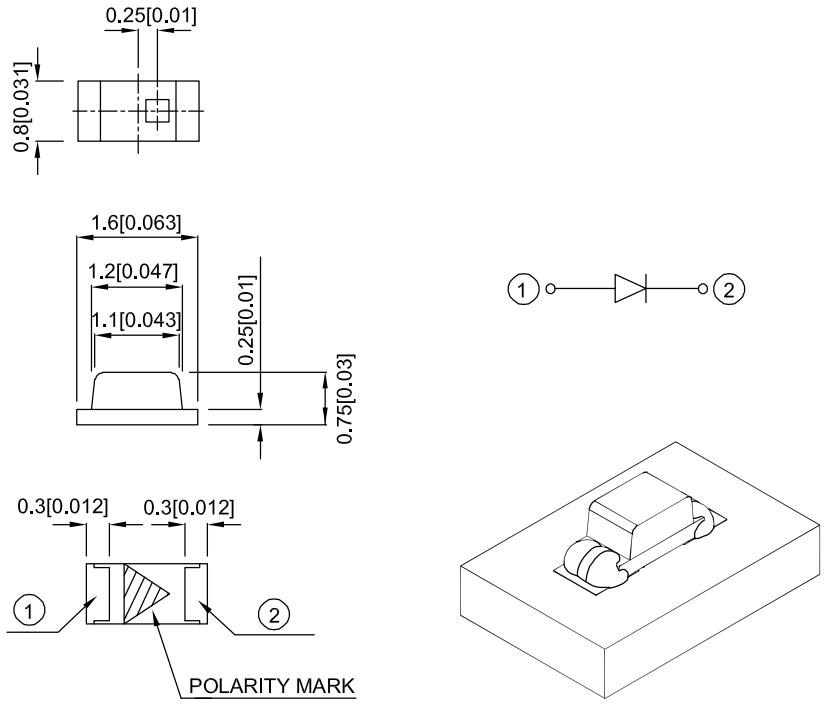
## Features

- 1.6mmX0.8mm SMT LED, 0.75mm thickness.
- Mechanically and spectrally matched to phototransistor.
- Package: 2000pcs / reel .
- Moisture sensitivity level : level 3.
- 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. 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 |
| APT1608F3C | F3 (GaAs) | Water Clear | 1.2 | 3 | 120° |
| | | | *0.8 | *2 | |

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%.
*Radiant Intensity value is traceable to the CIE127-2007 compliant national standards.

## Electrical / Optical Characteristics at TA=25°C

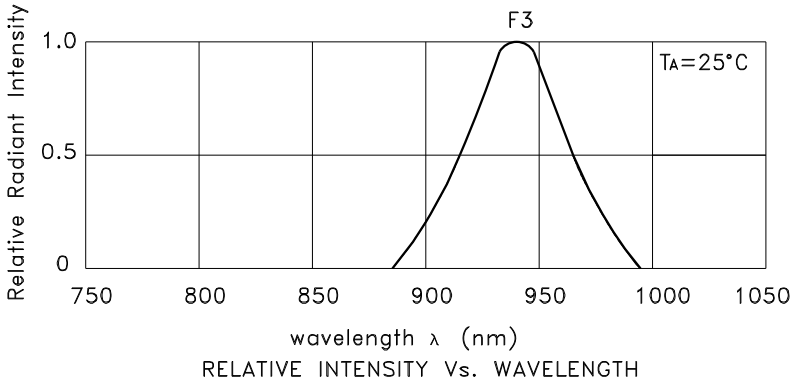
| Parameter | P/N | Symbol | Typ. | Max. | Units | Test Conditions |
|---|---|---|---|---|---|---|
| Forward Voltage [1] | F3 | $V_F$ | 1.2 | 1.6 | V | $I_F$=20mA |
| Reverse Current | F3 | $I_R$ | | 10 | uA | $V_R$ = 5V |
| Capacitance | F3 | C | 90 | | pF | $V_F$=0V;f=1MHz |
| Peak Spectral Wavelength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

Notes:
1. Forward Voltage: +/-0.1V.
2. Wavelength value is traceable to the CIE127-2007 compliant national standards.
3. Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

## Absolute Maximum Ratings at TA=25°C

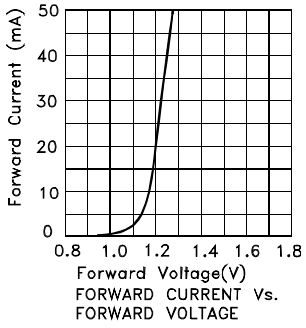
| Parameter | Symbol | F3 | Units |
|---|---|---|---|
| Power dissipation | $P_D$ | 80 | mW |
| DC Forward Current | $I_F$ | 50 | mA |
| Peak Forward Current [1] | $i_{FS}$ | 1.2 | A |
| Reverse Voltage | $V_R$ | 5 | V |
| Operating Temperature | $T_A$ | -40 To +85 | °C |
| Storage Temperature | $T_{STG}$ | -40 To +85 | °C |

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

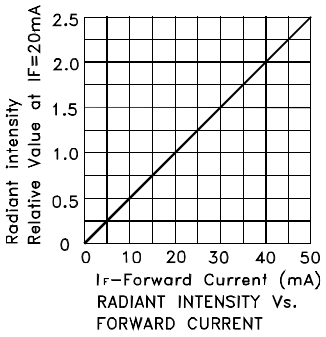


RELATIVE INTENSITY Vs. WAVELENGTH

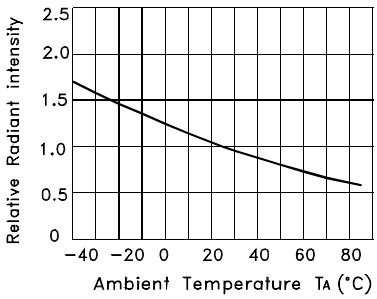
**APT1608F3C**



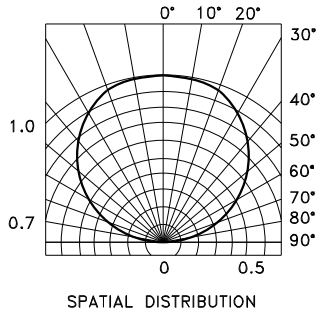
FORWARD CURRENT Vs.
FORWARD VOLTAGE



RADIANT INTENSITY Vs.
FORWARD CURRENT



RADIANT INTENSITY Vs.
AMBIENT TEMPERATURE

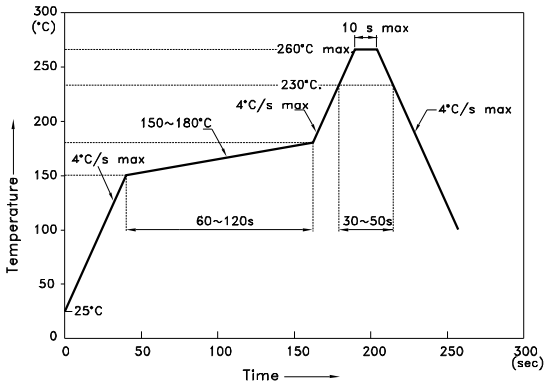


SPATIAL DISTRIBUTION

## APT1608F3C

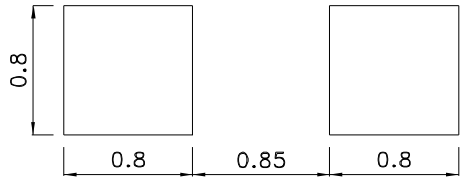
**Reflow soldering is recommended and the soldering profile is shown below.**
**Other soldering methods are not recommended as they might cause damage to the product.**

Reflow Soldering Profile For Lead-free SMT Process.

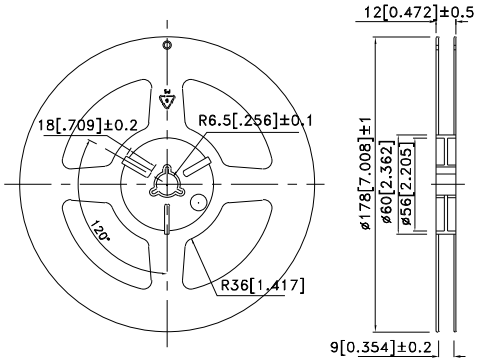



NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

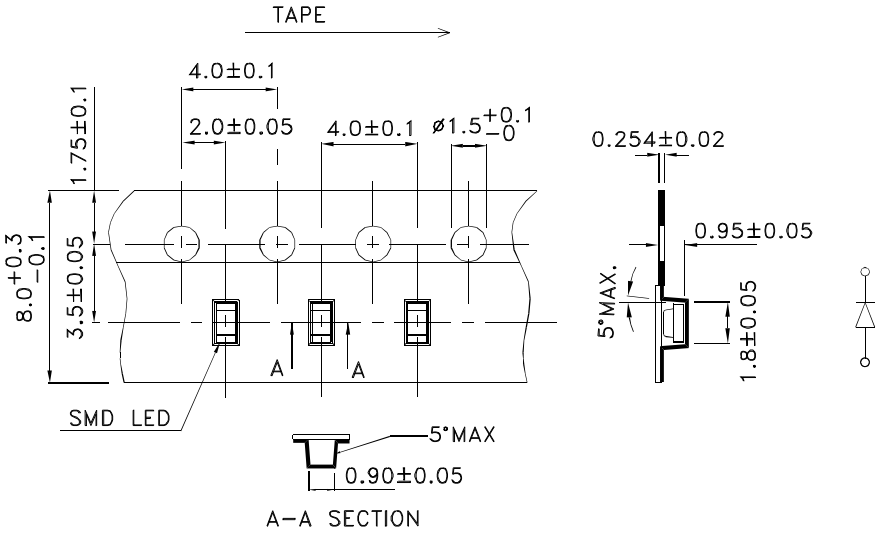
### Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)




### Reel Dimension




### Tape Specifications (Units : mm)



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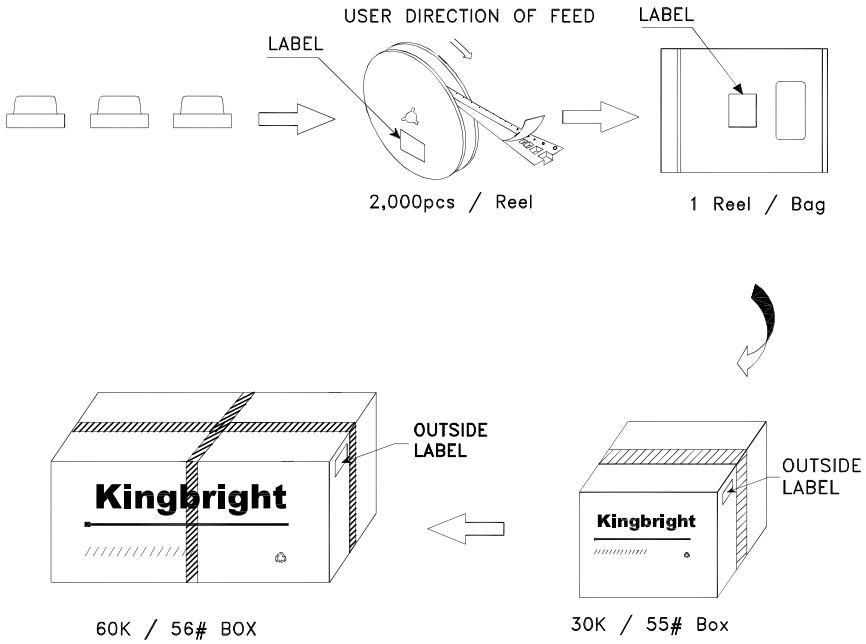
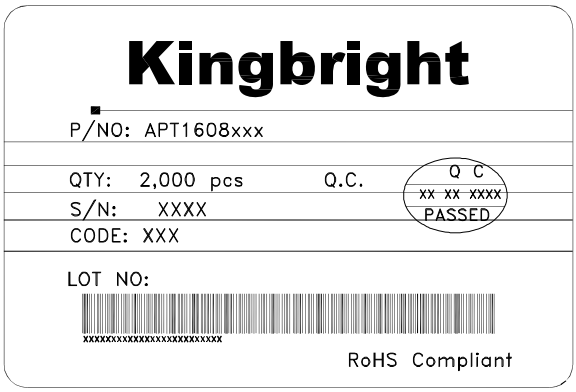
**PACKING & LABEL SPECIFICATIONS** **APT1608F3C**

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