

Part Number: APT2012F3C

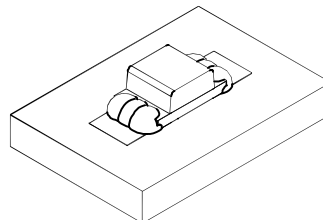
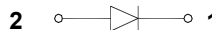
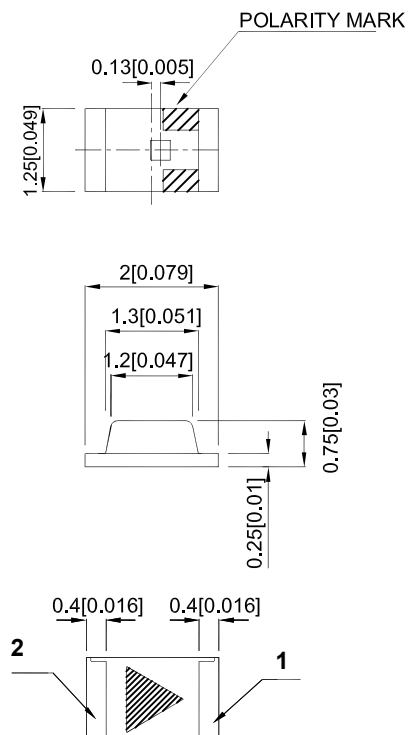
### Features

- 2.0mmx1.25mm SMT LED, 0.75mm thickness.
- Mechanically and spectrally matched to the 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  $\pm 0.1$  (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]<br>@ 20mA |      | Viewing<br>Angle [1] |
|------------|-----------|-------------|--------------------------|------|----------------------|
|            |           |             | Min.                     | Typ. | 2θ1/2                |
| APT2012F3C | 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 <sub>F</sub> | 1.2  | 1.6  | V     | I <sub>F</sub> =20mA      |
| Reverse Current          | F3  | I <sub>R</sub> |      | 10   | uA    | V <sub>R</sub> = 5V       |
| Capacitance              | F3  | C              | 90   |      | pF    | V <sub>F</sub> =0V;f=1MHz |
| Peak Spectral Wavelength | F3  | λ <sub>P</sub> | 940  |      | nm    | I <sub>F</sub> =20mA      |
| Spectral Bandwidth       | F3  | Δλ1/2          | 50   |      | nm    | I <sub>F</sub> =20mA      |

### Notes:

1. Forward Voltage: +/-0.1V.

2. Wavelength value is traceable to the CIE127-2007 compliant national standards.

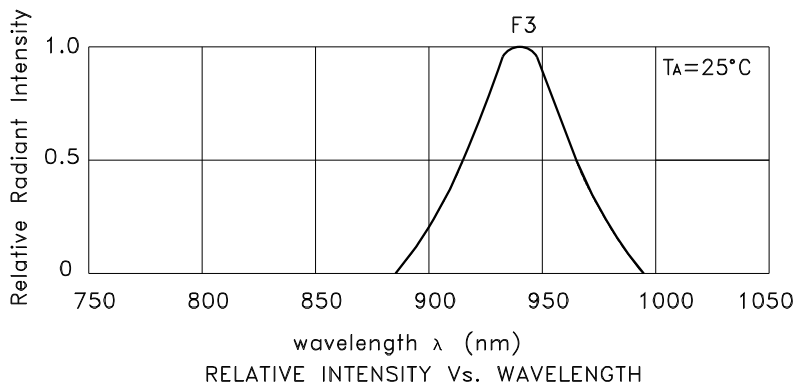
3. Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

## Absolute Maximum Ratings at TA=25°C

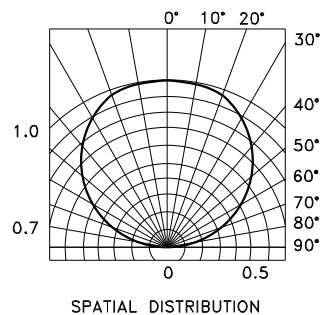
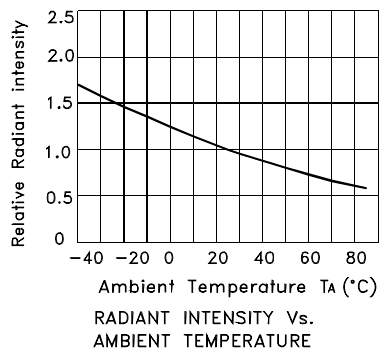
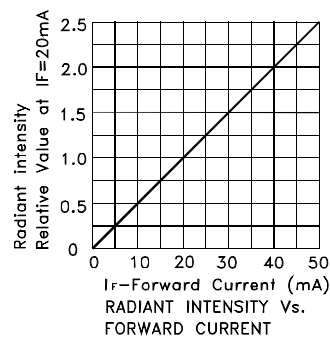
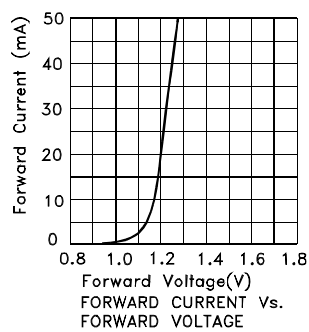
| Parameter                | Symbol           | F3         | Units |
|--------------------------|------------------|------------|-------|
| Power dissipation        | P <sub>D</sub>   | 80         | mW    |
| DC Forward Current       | I <sub>F</sub>   | 50         | mA    |
| Peak Forward Current [1] | i <sub>FS</sub>  | 1.2        | A     |
| Reverse Voltage          | V <sub>R</sub>   | 5          | V     |
| Operating Temperature    | T <sub>A</sub>   | -40 To +85 | °C    |
| Storage Temperature      | T <sub>STG</sub> | -40 To +85 | °C    |

### Note:

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



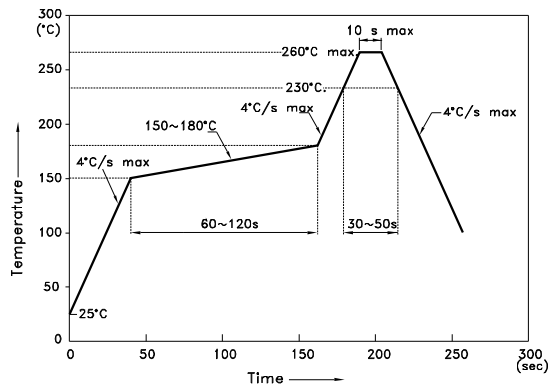
APT2012F3C



## APT2012F3C

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.

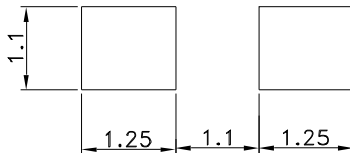
Reflow Soldering Profile For Lead-free SMT Process.



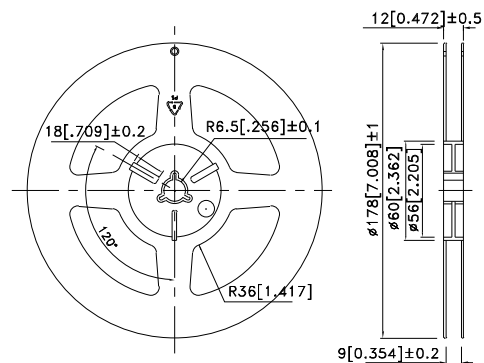
### NOTES:

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.

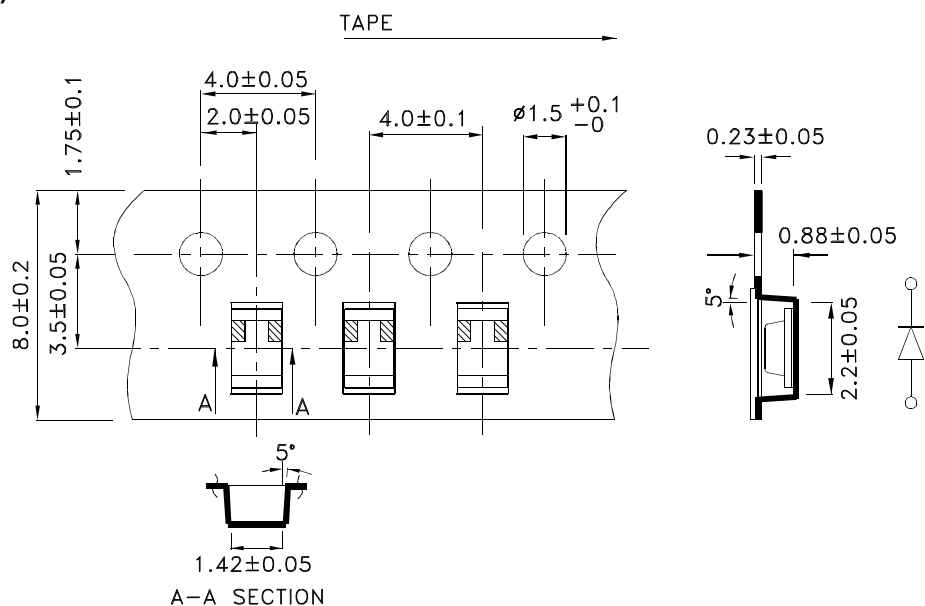
## Recommended Soldering Pattern (Units : mm; Tolerance: $\pm 0.1$ )



## Reel Dimension

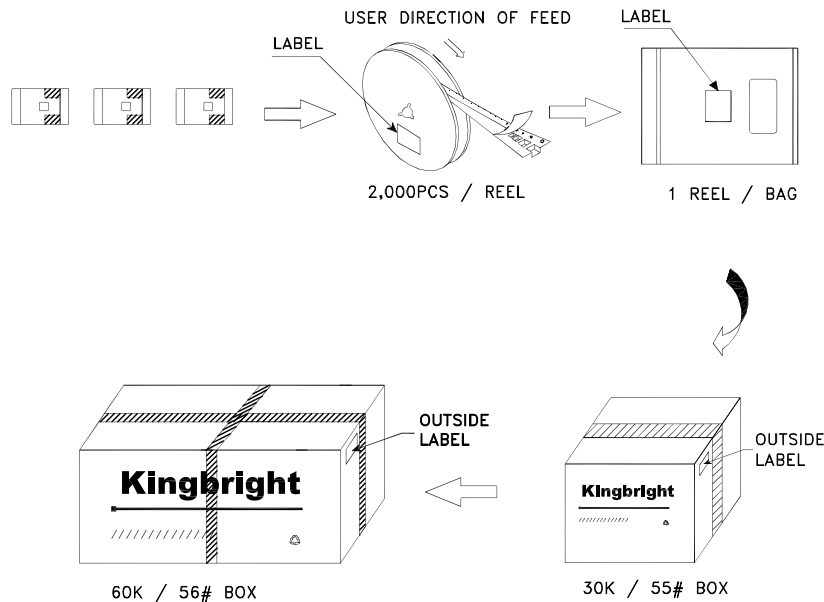


## Tape Specifications (Units : mm)



## PACKING & LABEL SPECIFICATIONS

APT2012F3C



|                                                                                     |                                                                                                                    |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| <b>Kingbright</b>                                                                   |                                                                                                                    |
| P/NO: APT2012xxx                                                                    |                                                                                                                    |
| QTY: 2,000 pcs                                                                      | Q.C. <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Q C<br/>XX XX XXXX<br/>PASSED</span> |
| S/N: XXXX                                                                           |                                                                                                                    |
| CODE: XXX                                                                           |                                                                                                                    |
| LOT NO:                                                                             |                                                                                                                    |
|  |                                                                                                                    |
| RoHS Compliant                                                                      |                                                                                                                    |

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