



HIRP3010Q20-B30

SMD Type 850nm Infrared Emitter

Features

- Small double-end package
- Viewing Angle at X axis (Note3) = $\pm 65^\circ$
- High reliability
- Good spectral matching to Si photo detector
- RoHS compliance

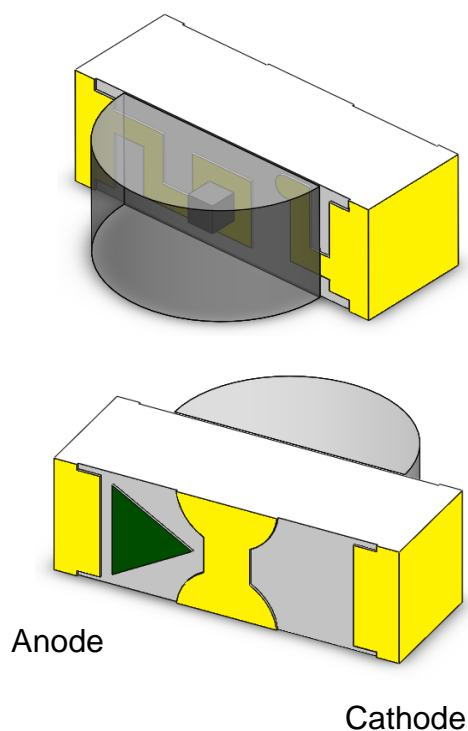
Applications

- Infrared sensor
- Light barrier
- Infrared Touch Panel Solutions

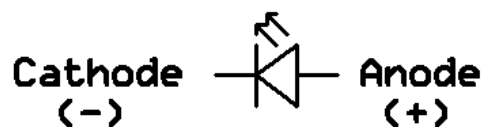
Description

The HIRP3010Q20-B30 is a GaAlAs infrared LED housed in a miniature SMD package. The device has a peak wavelength of 850nm LED spectrally matched with phototransistor or photodiode.

Package Outline



Schematic





HIRP3010Q20-B30

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Absolute Maximum Rating at 25°C

| Symbol | Parameters | Ratings | Units | Notes |
|------------------|--|------------|-------|-------|
| I _F | Continuous Forward Current | 70 | mA | |
| I _{FP} | Peak Forward Current | 0.7 | A | 1 |
| V _R | Reverse Voltage | 5 | V | |
| T _{opr} | Operating Temperature | -40 ~ +85 | °C | |
| T _{stg} | Storage Temperature | -40 ~ +100 | °C | |
| T _{sol} | Soldering Temperature | 260 | °C | 2 |
| P _D | Power Dissipation at(or below) 25°C Free Air Temperature | 140 | mW | |

Electro-Optical Characteristics *TA = 25°C (unless otherwise specified)*

Optical Characteristics

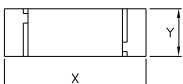
| Symbol | Parameters | Test Conditions | Min | Typ | Max | Units | Notes |
|------------------|-----------------------------|----------------------|-----|-----|-----|-------|-------|
| I _e | Radiant Intensity | I _F =20mA | 1.0 | 2.1 | - | mW/sr | |
| | | I _F =70mA | - | 6.0 | - | | |
| λ _p | Peak Wavelength | I _F =20mA | 830 | 850 | 870 | nm | |
| Δλ | Spectral Bandwidth | I _F =20mA | - | 30 | - | nm | |
| θ _{1/2} | Angle of Half Intensity (X) | I _F =20mA | - | ±65 | - | deg | 3 |
| | Angle of Half Intensity (Y) | | - | ±65 | - | | |

Electrical Characteristics

| Symbol | Parameters | Test Conditions | Min | Typ | Max | Units | Notes |
|----------------|-----------------|----------------------|------|------|-----|-------|-------|
| V _F | Forward Voltage | I _F =20mA | 1.30 | 1.40 | 1.7 | V | |
| | | I _F =70mA | 1.40 | 1.56 | 2.0 | | |
| I _R | Reverse Current | V _R =5V | - | - | 10 | μA | |

Notes:

- 1 : I_{FP} Conditions--Pulse Width ≤ 100μs and Duty ≤ 1%.
- 2 : Soldering time ≤ 5 seconds.
- 3 : Test condition :





Typical Characteristic Curves

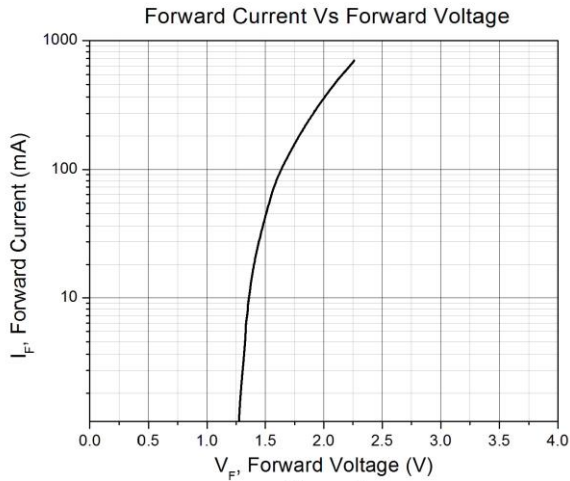


Figure 1

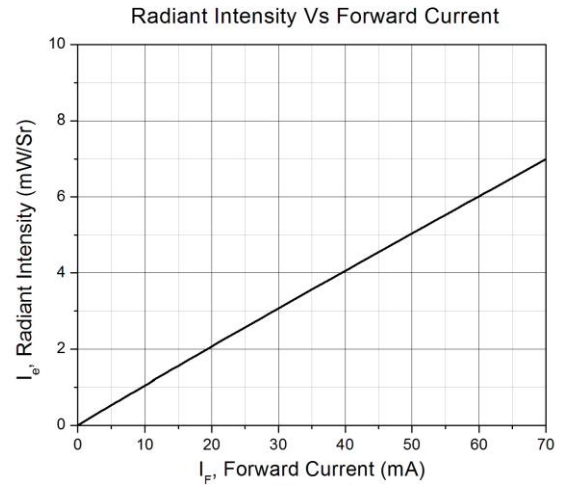


Figure 2

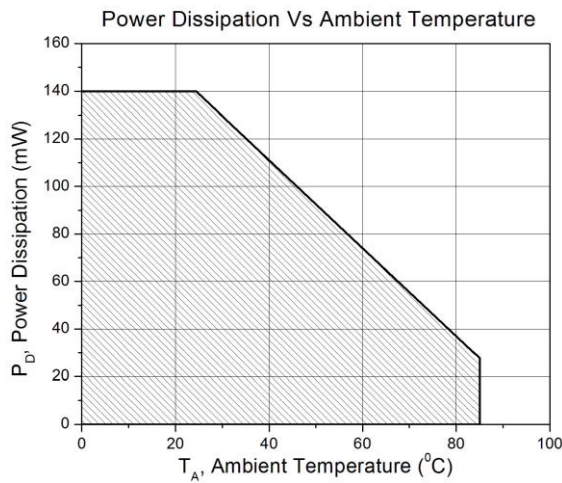


Figure 3

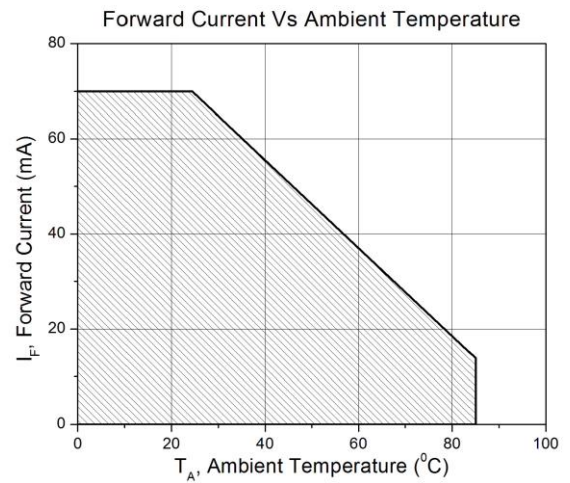


Figure 4

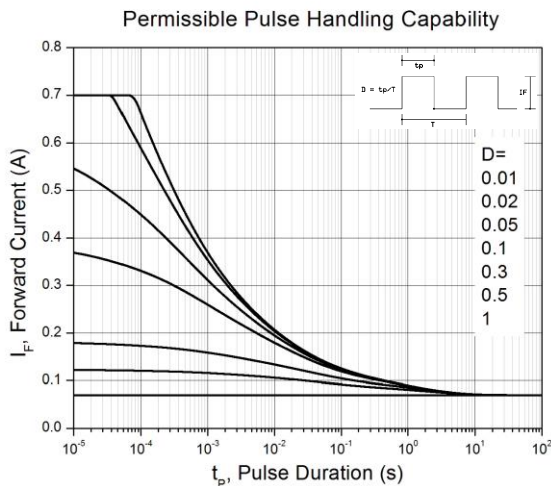


Figure 5

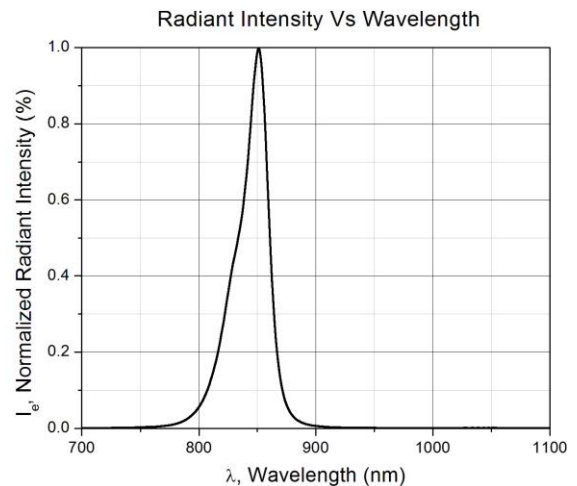


Figure 6



Typical Characteristic Curves

Angular Displacement at X axis

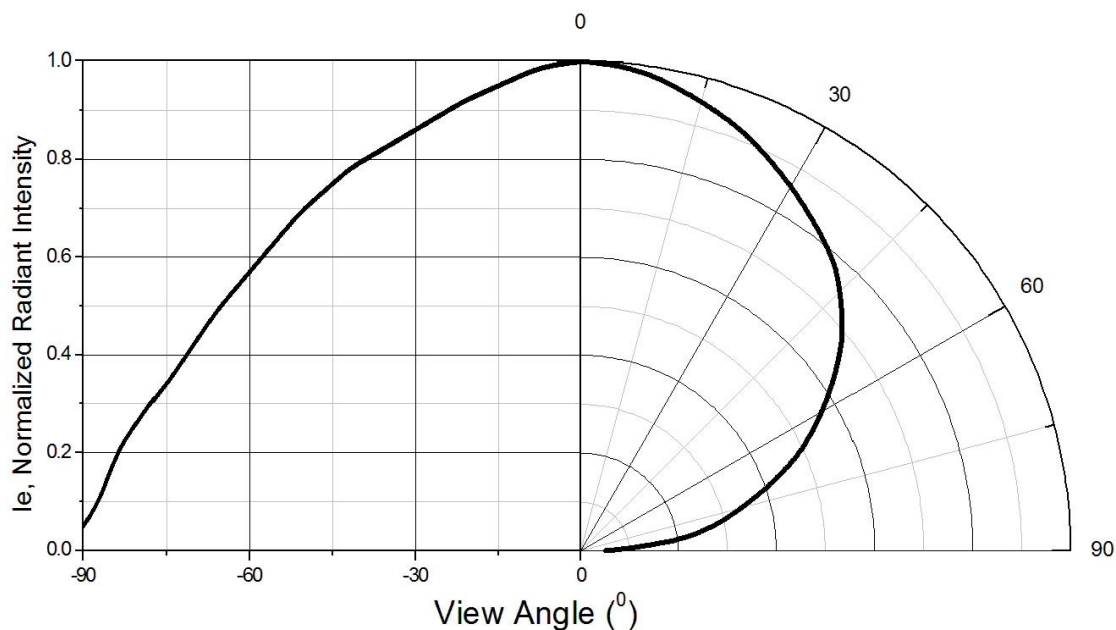


Figure 7

Angular Displacement at Y axis

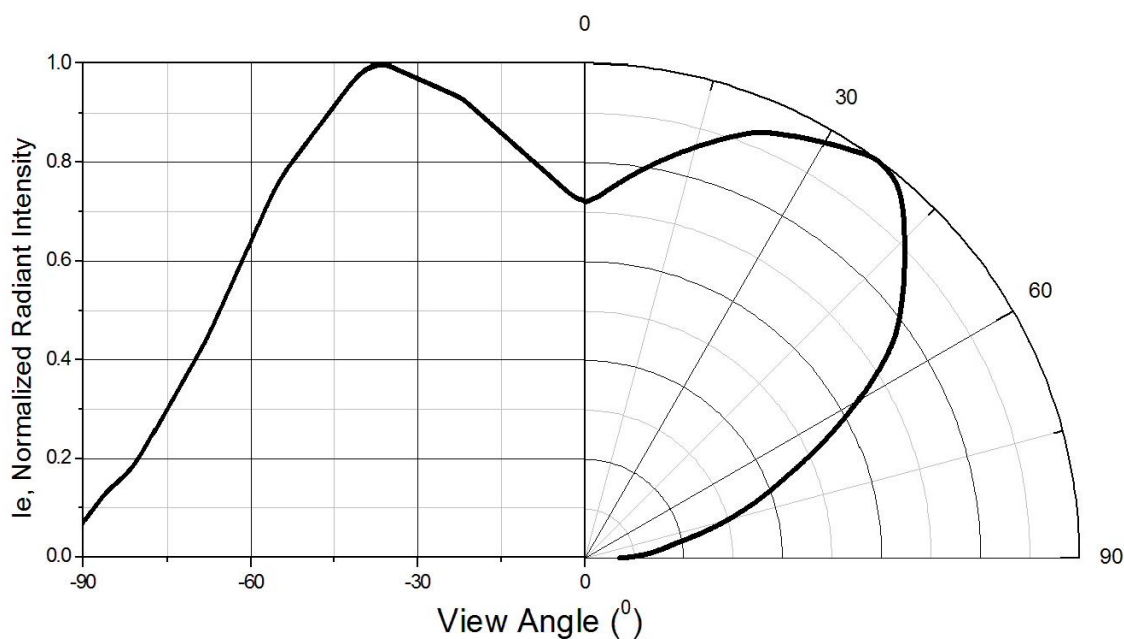


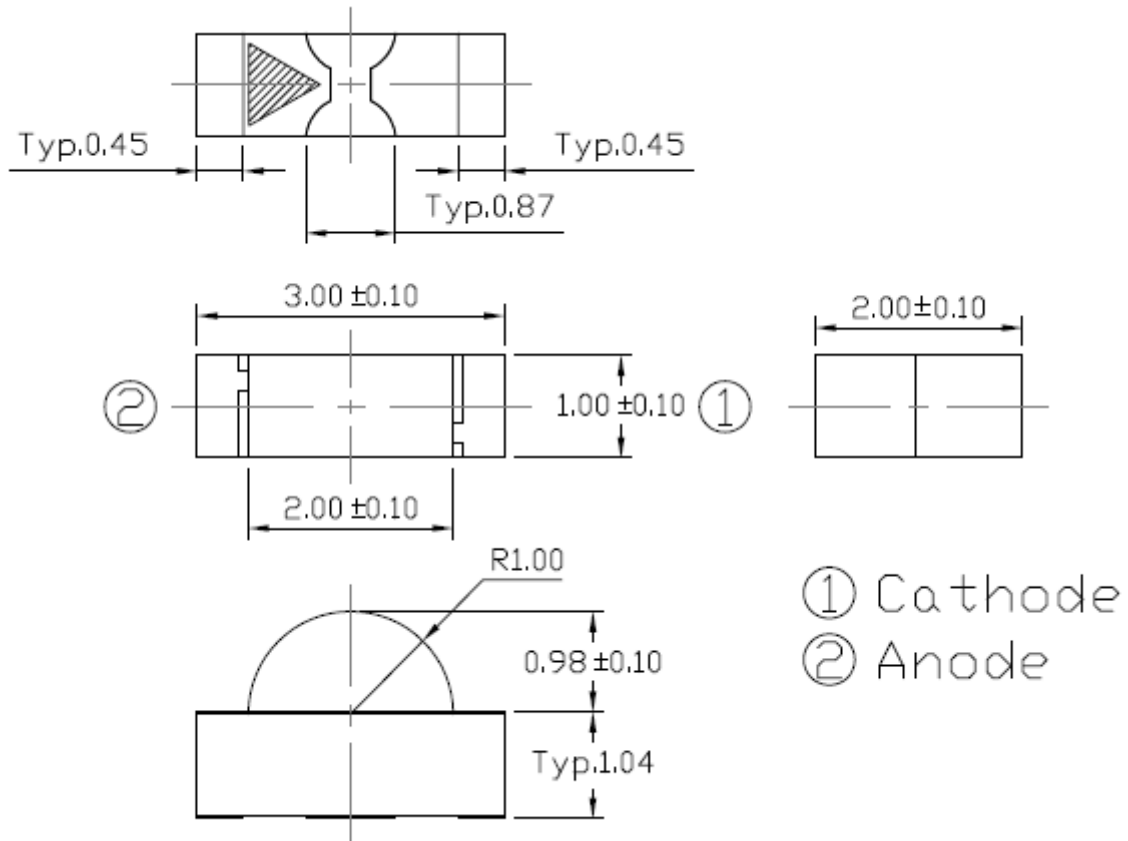
Figure 8



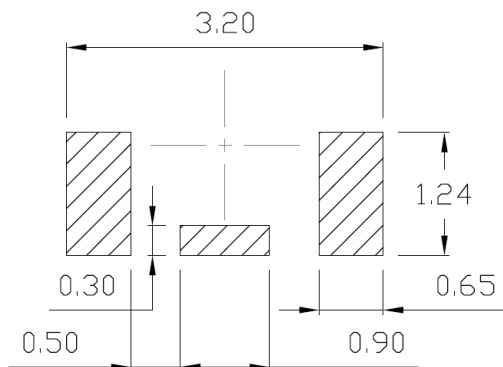
HIRP3010Q20-B30

SMD Type 850nm Infrared Emitter

Package Dimension *All dimensions are in mm, unless otherwise stated*



Recommended Soldering Mask *All dimensions are in mm, unless otherwise stated*



Ordering Information

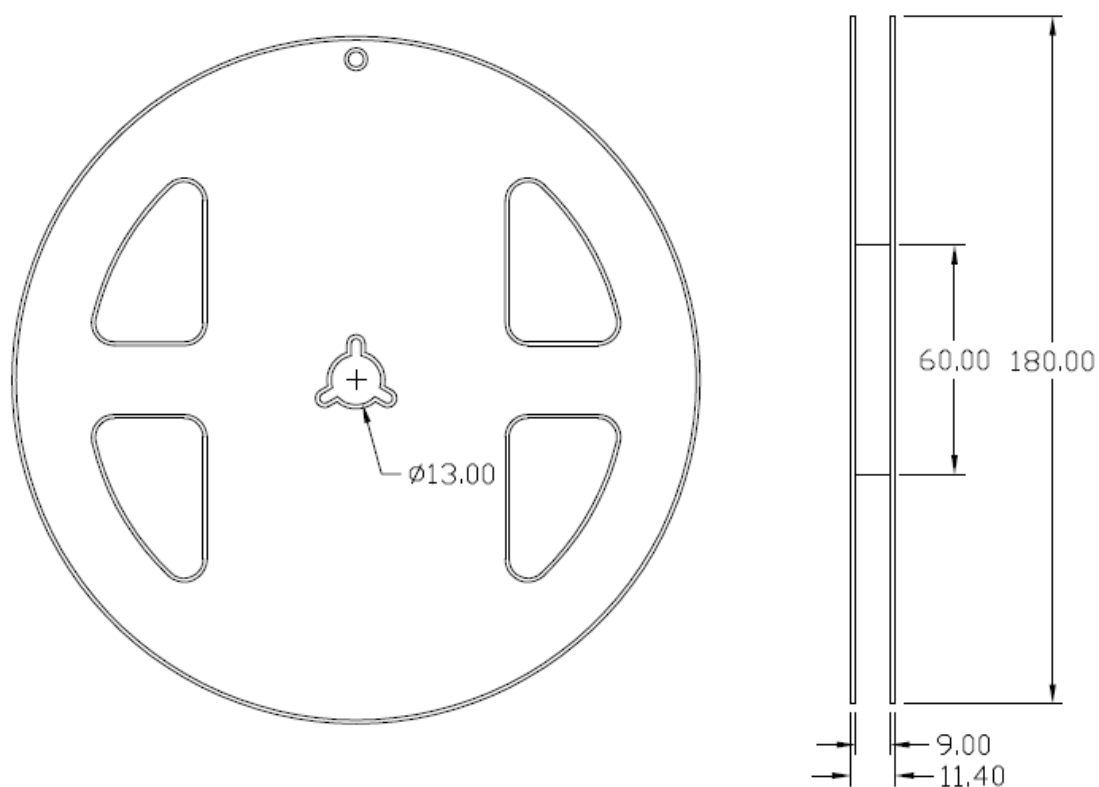
| Part Number | Description | Quantity |
|--------------------|--------------------|-----------------|
| HIRP3010Q20-B30 | Tape & Reel | 3000 pcs |



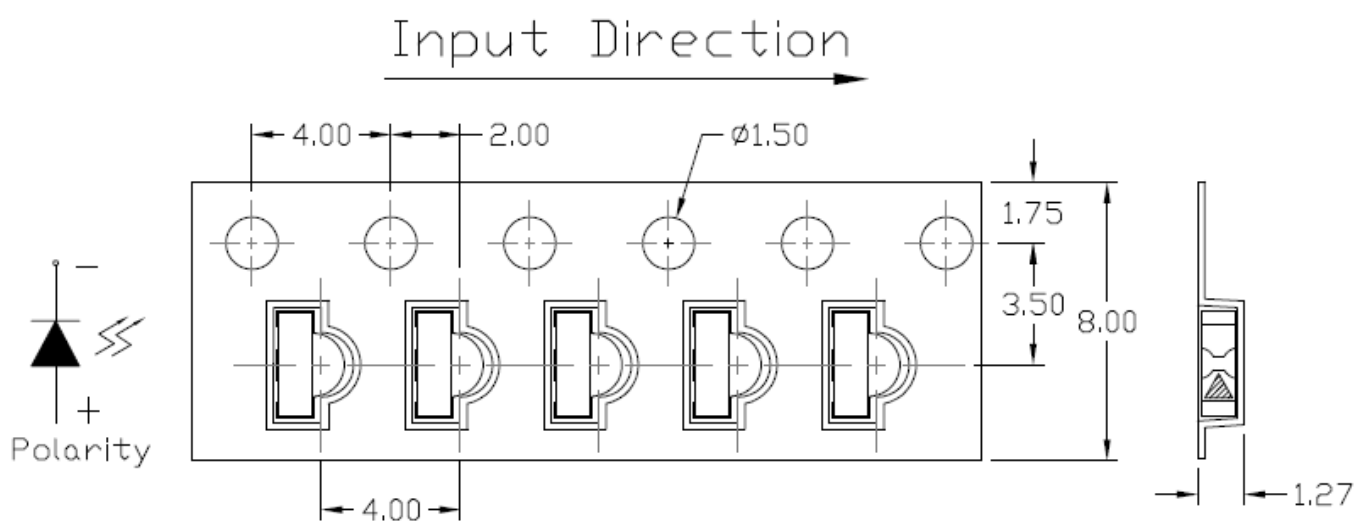
HIRP3010Q20-B30

SMD Type 850nm Infrared Emitter

Reel Dimension *All dimensions are in mm, unless otherwise stated*

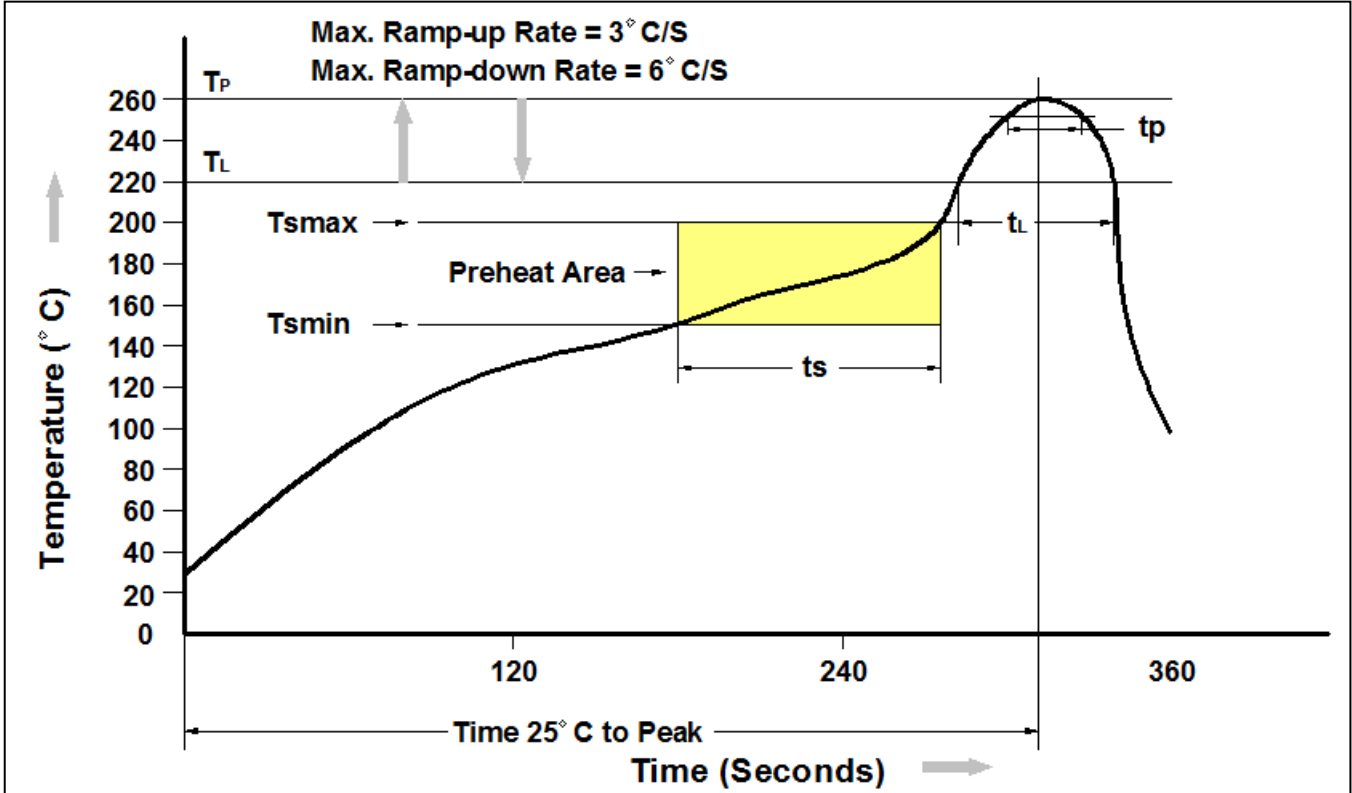


Tape Dimension *All dimensions are in mm, unless otherwise stated*





Reflow Profile



| Profile Feature | Pb-Free Assembly Profile |
|---------------------------------|--------------------------|
| Temperature Min. (Tsmin) | 150°C |
| Temperature Max. (Tsmax) | 200°C |
| Time (ts) from (Tsmin to Tsmax) | 60-120 seconds |
| Ramp-up Rate (tL to tP) | 3°C/second max. |
| Liquidous Temperature (TL) | 217°C |
| Time (tL) Maintained Above (TL) | 60 – 150 seconds |
| Peak Body Package Temperature | 260°C +0°C / -5°C |
| Time (tP) within 5°C of 260°C | 30 seconds |
| Ramp-down Rate (TP to TL) | 6°C/second max |
| Time 25°C to Peak Temperature | 8 minutes max. |



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