



Features

- Small double-end package
- Viewing Angle at X axis (Note3) = $\pm 22.5^\circ$
- High reliability
- Good spectral matching to Si photo detector
- RoHS compliance

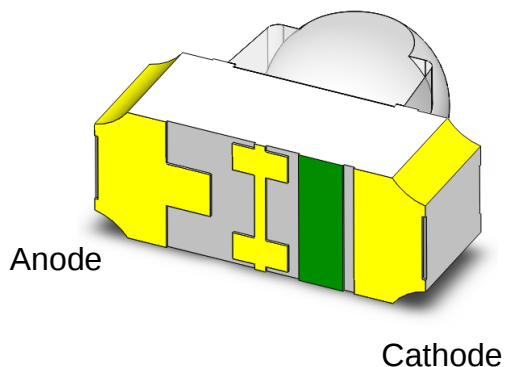
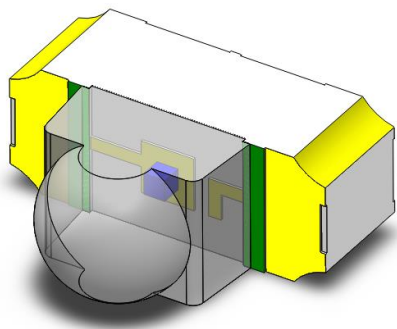
Applications

- Infrared sensor
- Infrared Touch Panel Solutions

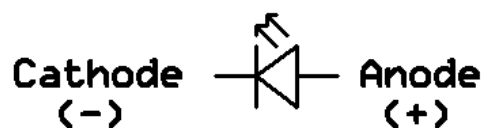
Description

The IRP3012V24-E5 is a GaAlAs infrared LED housed in a miniature SMD package. The device has a peak wavelength of 940nm LED spectrally matched with phototransistor or photodiode.

Package Outline



Schematic





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	119	mW	
R_{THJA}	Junction to Ambient Thermal Resistance	540	°C/W	

Electro-Optical Characteristics $T_A = 25^\circ\text{C}$ (unless otherwise specified)

Optical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I_e	Radiant Intensity	$I_F=20\text{mA}$	3.5	4.65	-	mW/sr	
		$I_F=70\text{mA}$	-	16.0	-		
λ_p	Peak Wavelength	$I_F=20\text{mA}$	-	940	-	nm	
$\Delta\lambda$	Spectral Bandwidth	$I_F=20\text{mA}$	-	30	-	nm	
$\theta_{1/2}$	Angle of Half Intensity (X)	$I_F=20\text{mA}$	-	± 22.5	-	deg	3
	Angle of Half Intensity (Y)			± 20			

Electrical Characteristics

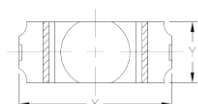
Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V_F	Forward Voltage	$I_F=20\text{mA}$	1.0	1.25	1.5	V	
		$I_F=70\text{mA}$	1.1	1.38	1.7		
I_R	Reverse Current	$V_R=5\text{V}$	-	-	10	μA	

Notes:

1: I_{FP} Conditions--Pulse Width $\leq 100\mu\text{s}$ and Duty $\leq 1\%$.

2: Soldering time ≤ 5 seconds.

3 : Test condition :





Typical Characteristic Curves

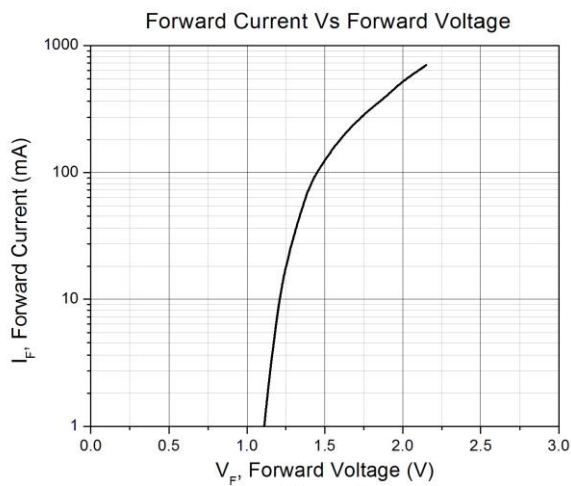


Figure 1

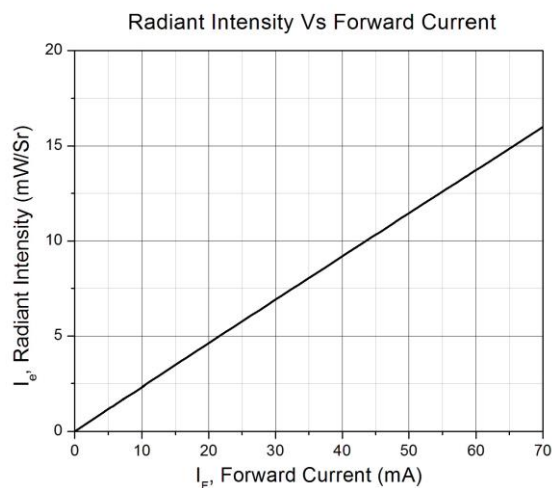


Figure 2

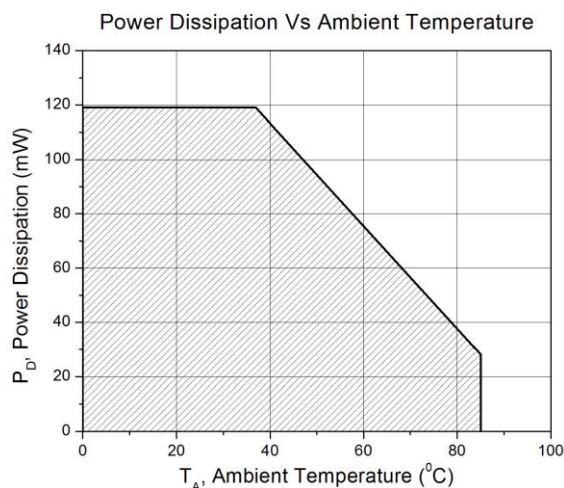


Figure 3

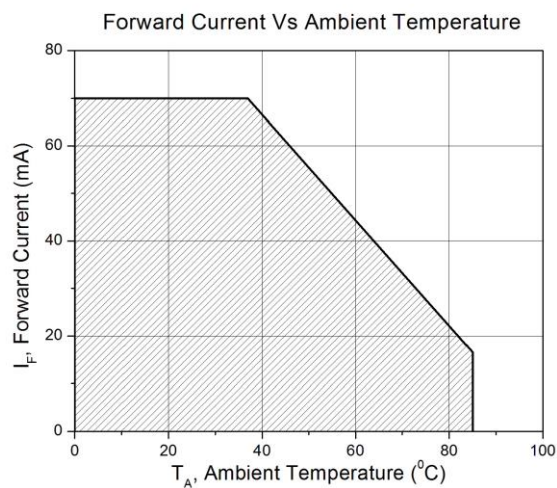


Figure 4

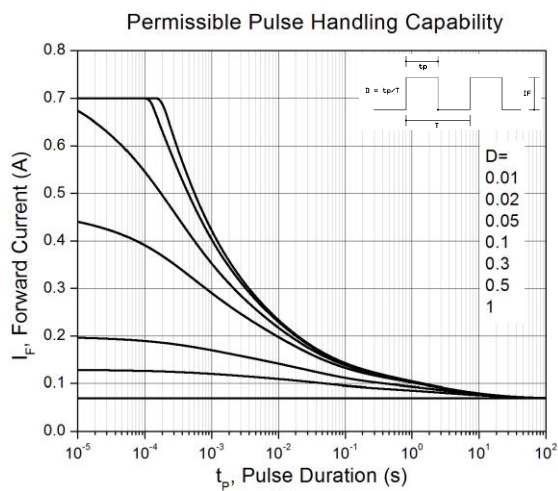


Figure 5

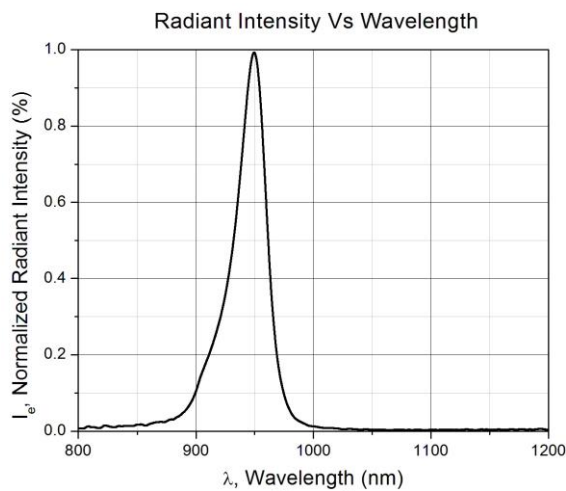


Figure 6



Typical Characteristic Curves

Angular Displacement at X axis

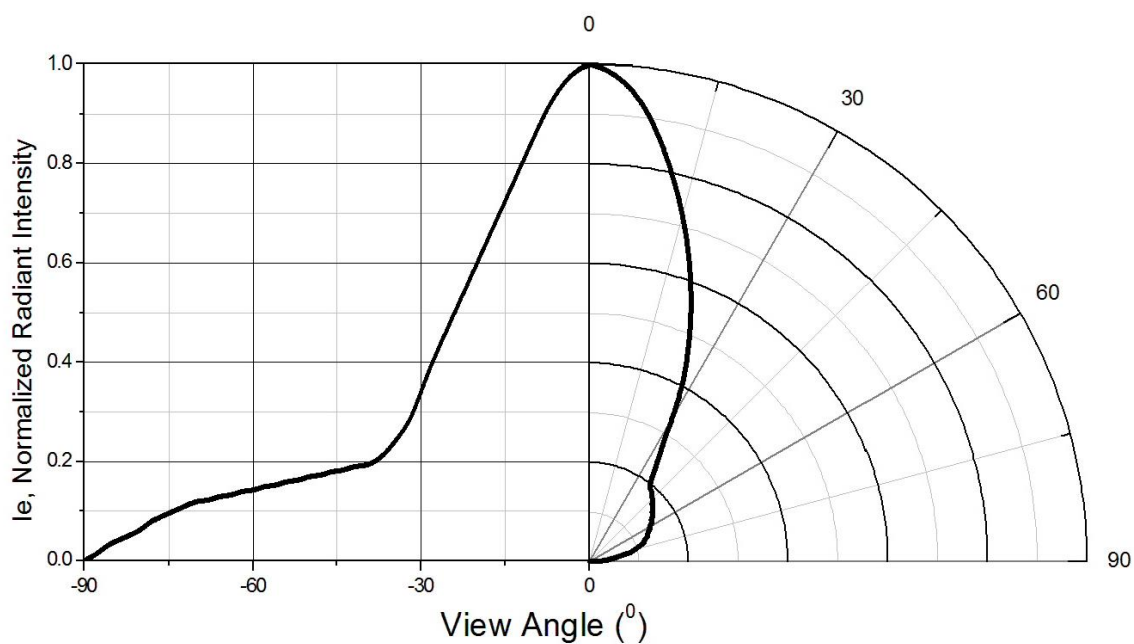


Figure 7

Angular Displacement at Y axis

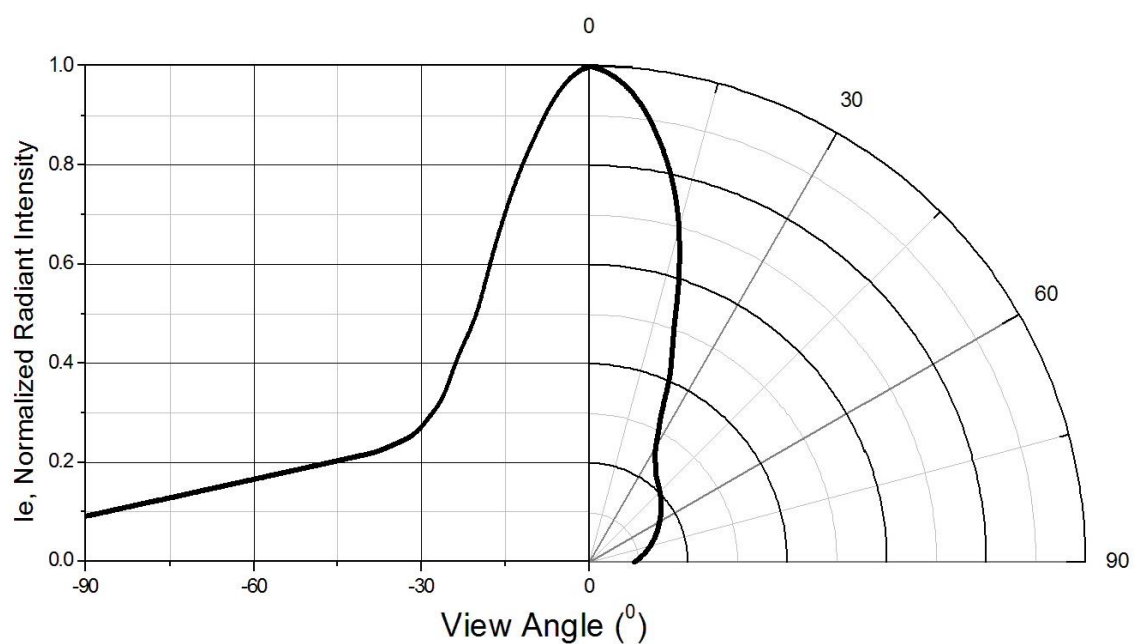


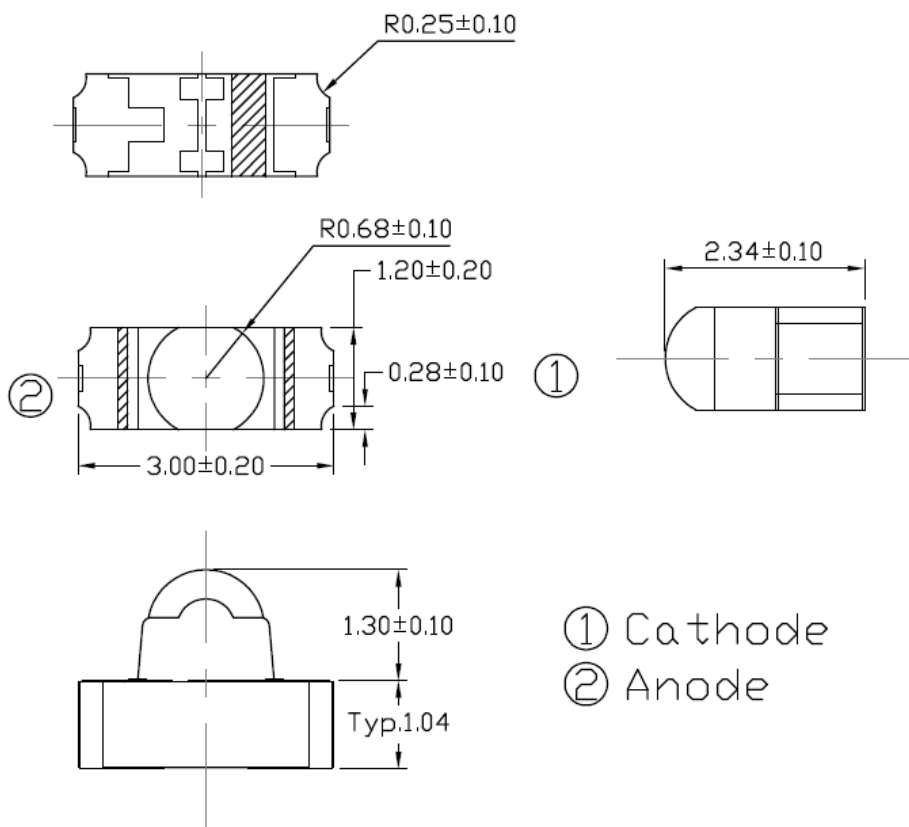
Figure 8



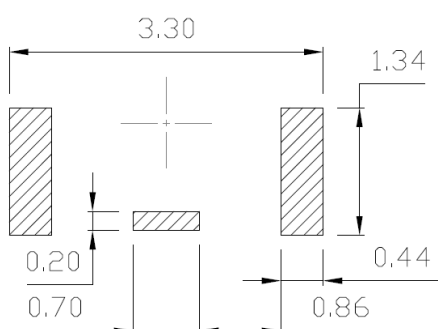
IRP3012V24-E5

SMD Type 940nm Infrared Emitter

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



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

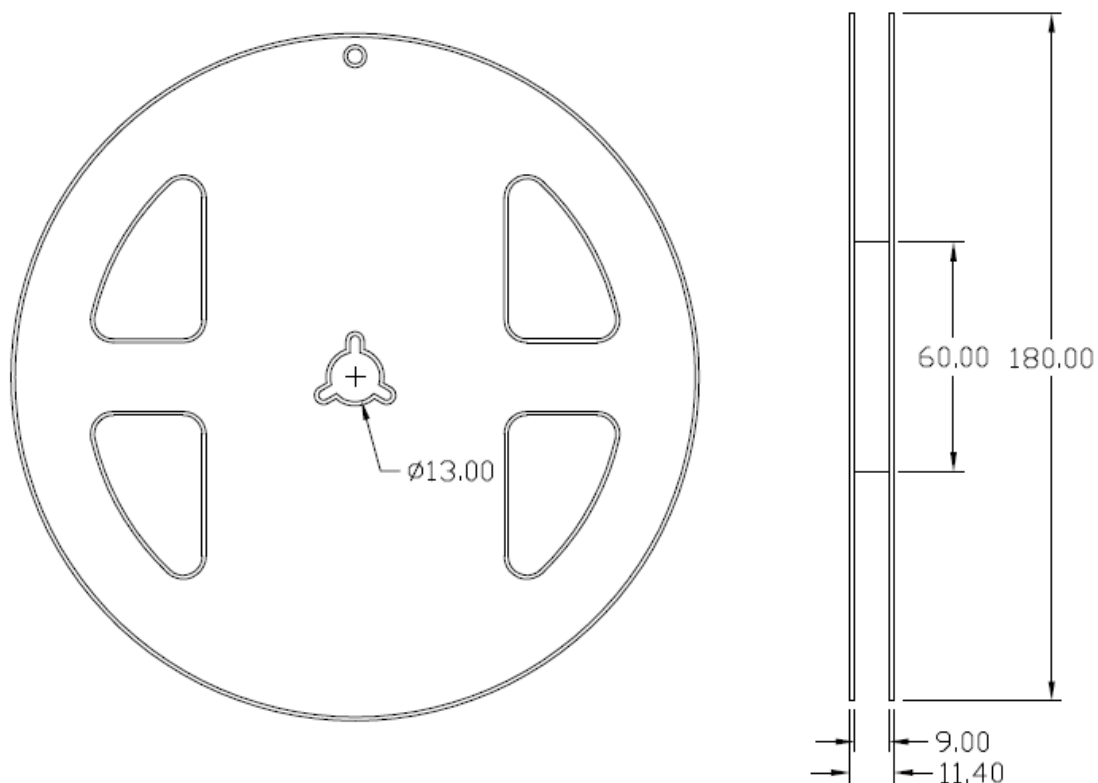


Ordering Information

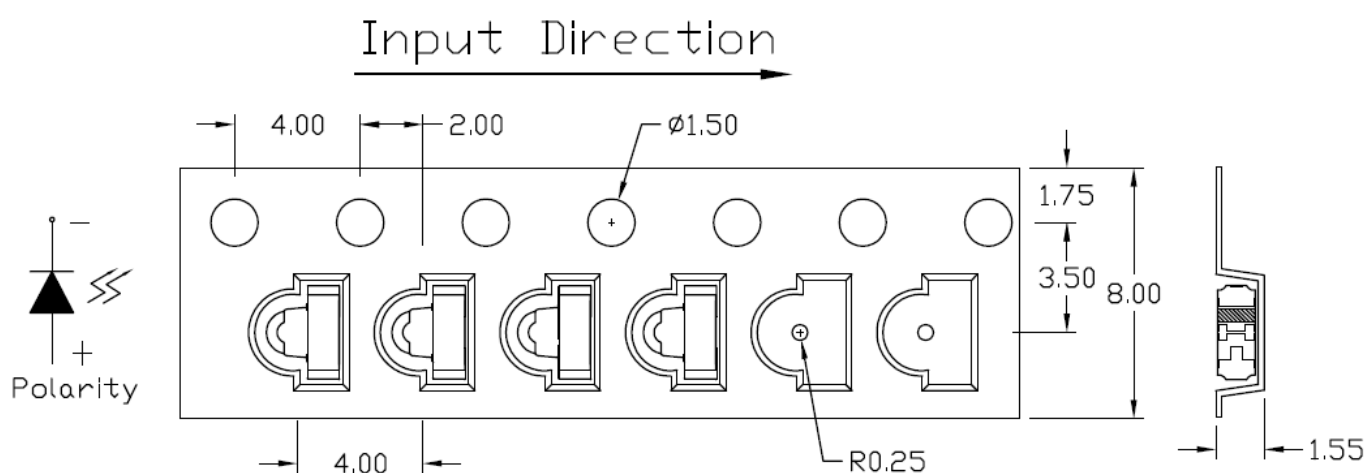
Part Number	Description	Quantity
IRP3012V24-E5	Tape & Reel	2000 pcs

SMD Type 940nm Infrared Emitter

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

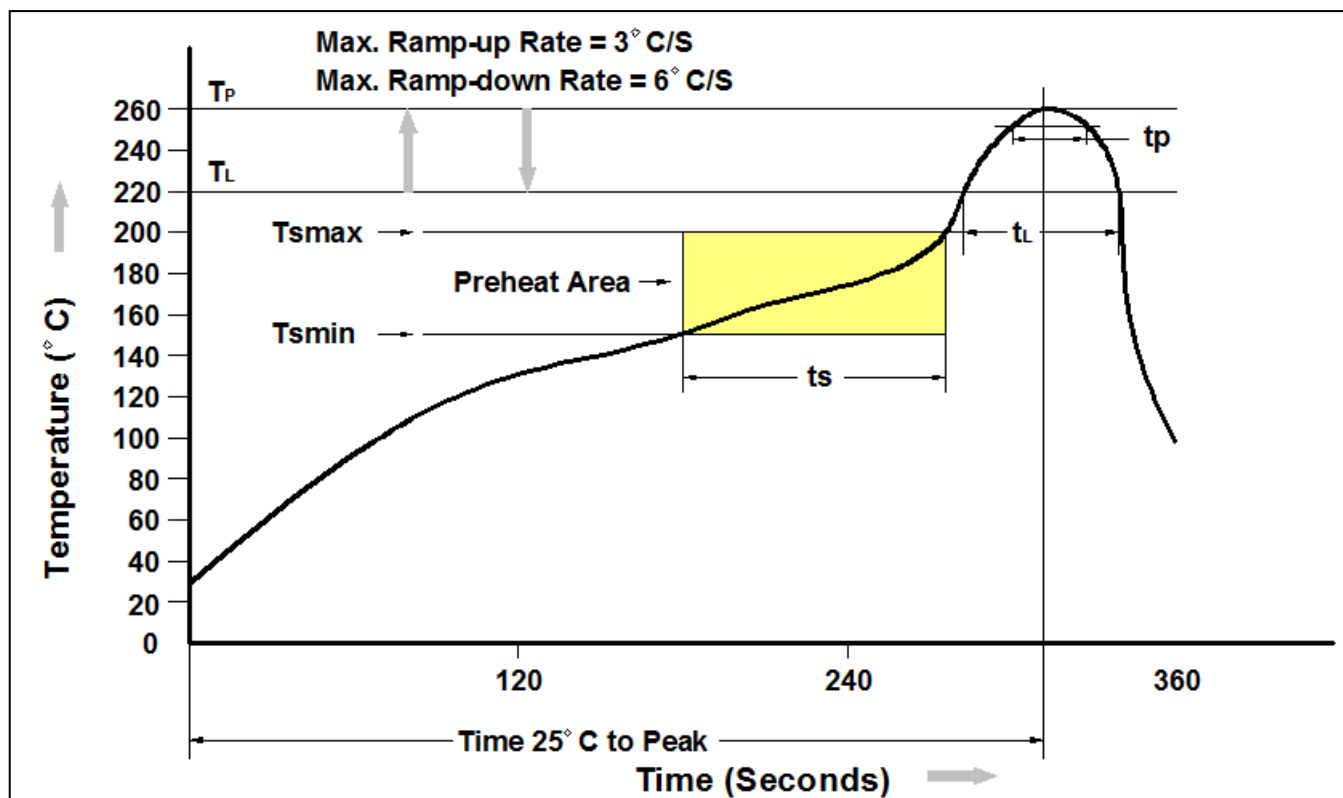


Tape Dimension *All dimensions are in mm, unless otherwise stated*





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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