



PDP92406BT14

SMD Type Photo Diode

Features

- Small double-end package
- High reliability
- High Reverse Breakdown
- High Sensitivity
- Fast Response time
- RoHS compliance

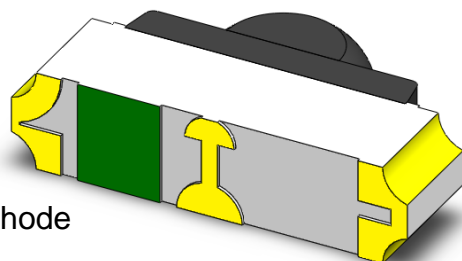
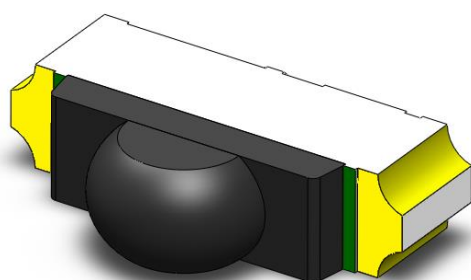
Applications

- Infrared sensor
- Light barrier
- Infrared Touch Panel Solutions

Description

The PDP92406BT14 is a silicon photo diode housed in a miniature SMD package. The device comes with a superior filtering for visible light by utilizing special black molding compound.

Package Outline



Cathode

Anode

Schematic





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Absolute Maximum Rating at 25°C

Symbol	Parameters	Ratings	Units	Notes
V _R	Reverse Voltage	33	V	
T _{opr}	Operating Temperature	-40 ~ +85	°C	
T _{stg}	Storage Temperature	-40 ~ +100	°C	
T _{sol}	Soldering Temperature	260	°C	1
P _D	Power Dissipation at(or below) 25°C Free Air Temperature	138	mW	
R _{THJA}	Junction to Ambient Thermal Resistance	540	°C/W	



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

Optical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
λ	Spectral Bandwidth	-	700	-	1100	nm	
λ_P	Peak Sensitivity	-	-	900	-	nm	
$\theta_{1/2}$	View Angle at X axis	$V_R=5V$	-	± 52.5	-	deg	2
	View Angle at Y axis		-	± 32.5	-		

Electrical Characteristics

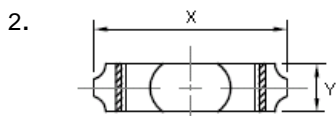
Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I_D	Dark Current	$E_e=0mW/cm^2$ $V_R=10V$	-	-	10	nA	
V_{BR}	Reverse Breakdown Voltage	$E_e=0mW/cm^2$ $I_R=100\mu A$	33	210	-	V	
V_{OC}	Open-Circuit Voltage	$E_e=1mW/cm^2$ $\lambda_P=940nm$	-	0.3	-	V	
I_{SC}	Short-Circuit Current		-	1.0	-	μA	
I_R	Reverse Light Current	$E_e=1mW/cm^2$ $\lambda_P=940nm, V_R=5V$	1.0	1.47	-	μA	
C_T	Total Capacitance	$E_e=0mW/cm^2$ $f=1MHz, V_R=5V$	-	5.04	-	pF	

Switching Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
t_r	Rise Time	$V_R = 10V, R_L = 10k\Omega$	-	230	-	ns	
t_f	Fall Time		-	200	-		

Notes:

1. Soldering time \leq 5 seconds.





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Typical Characteristic Curves

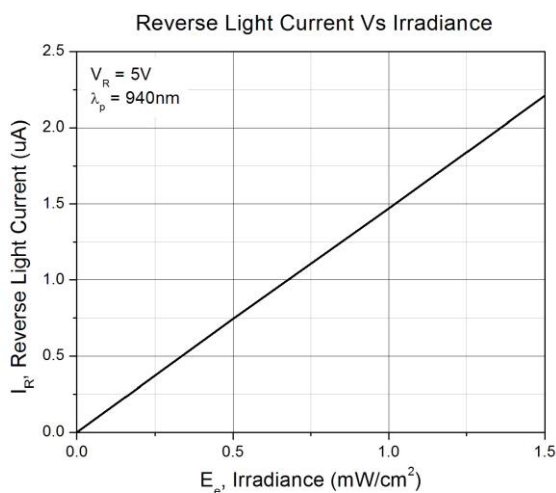


Figure 1

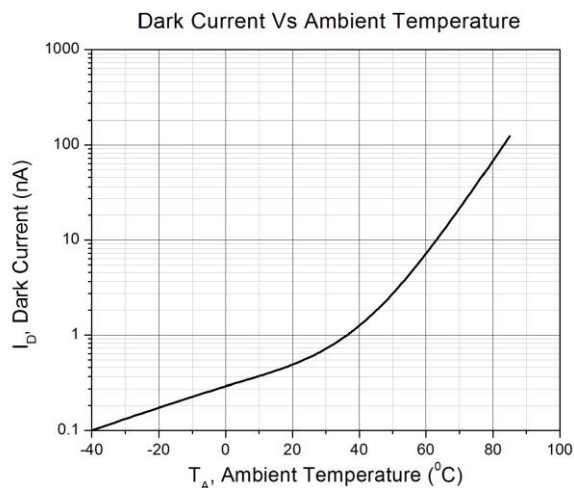


Figure 2

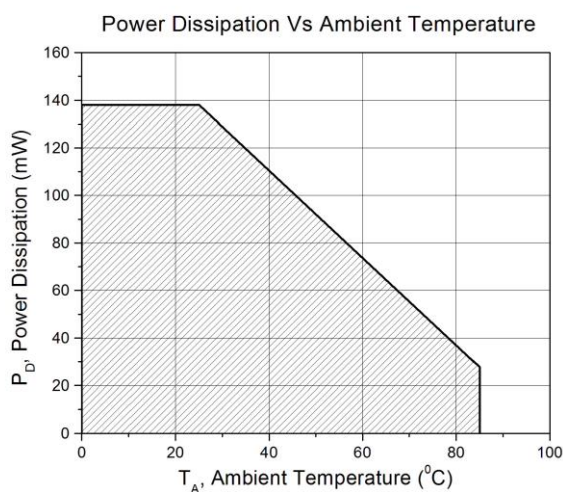


Figure 3

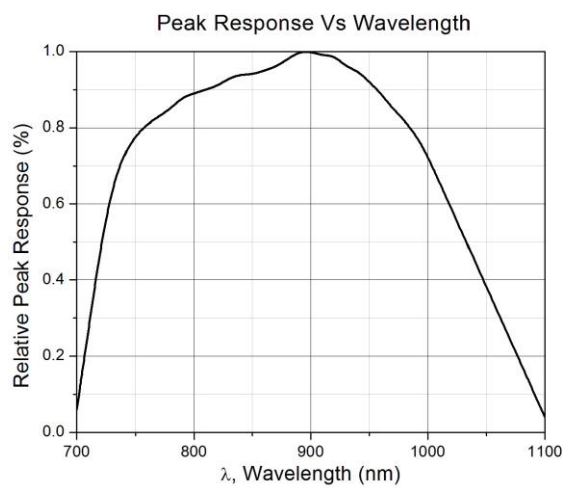


Figure 4

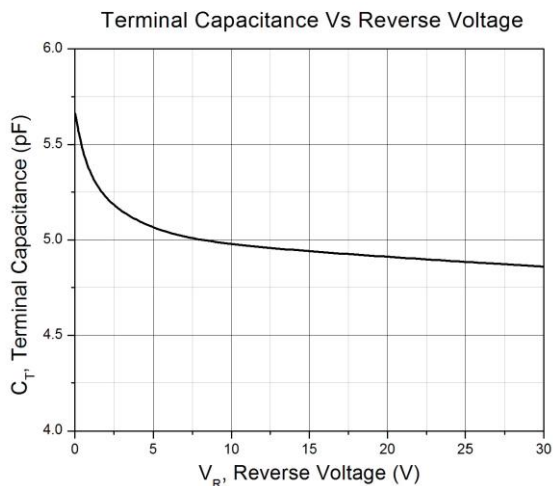


Figure 5

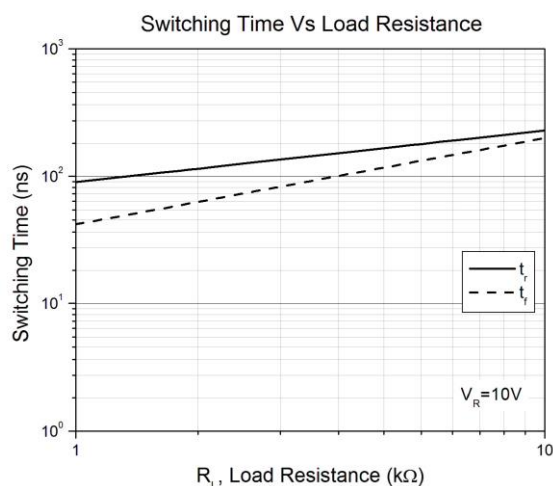


Figure 6



Typical Characteristic Curves

Angular Displacement at X axis

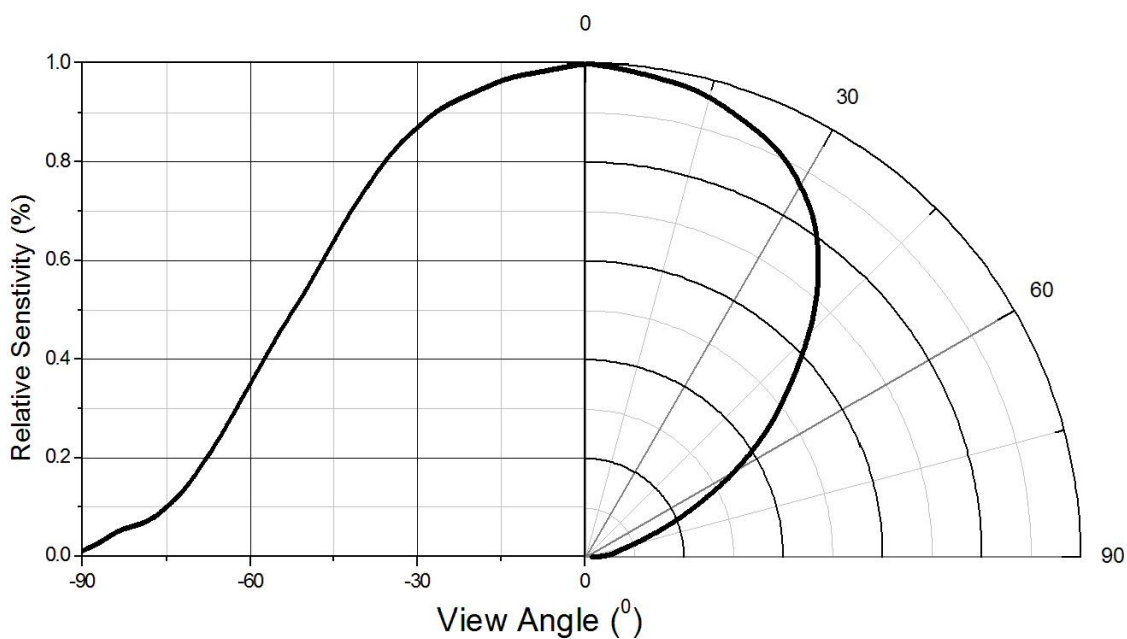


Figure 7

Angular Displacement at Y axis

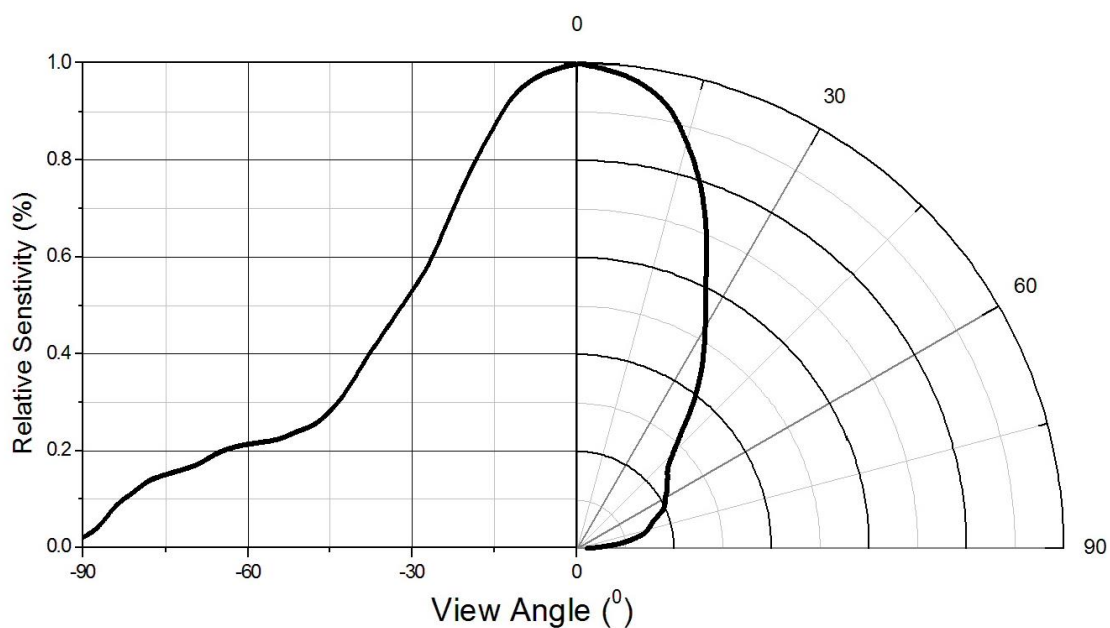


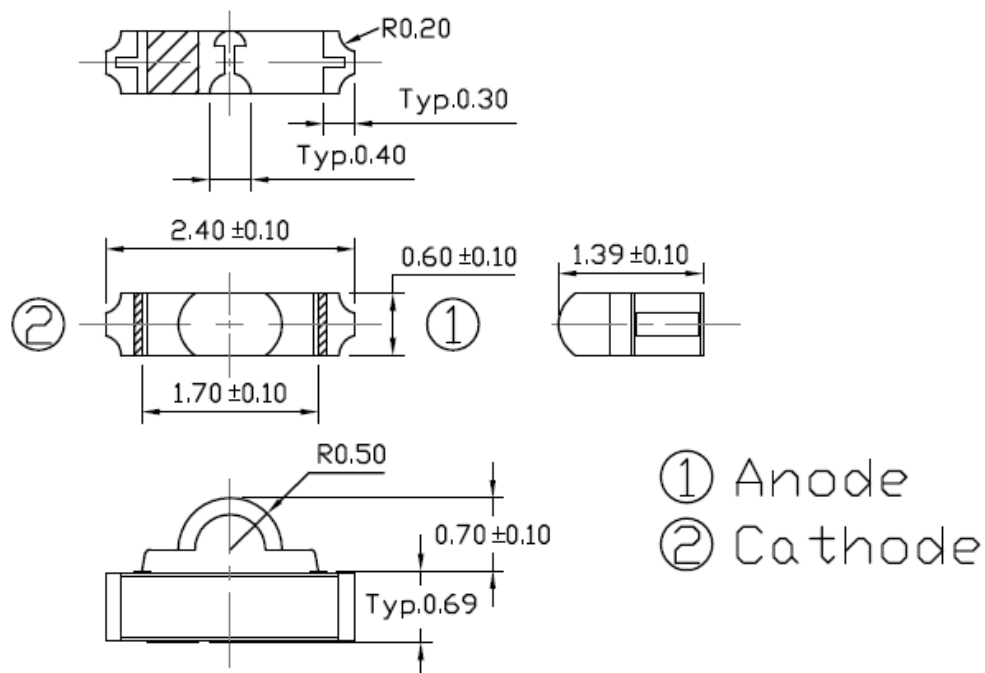
Figure 8



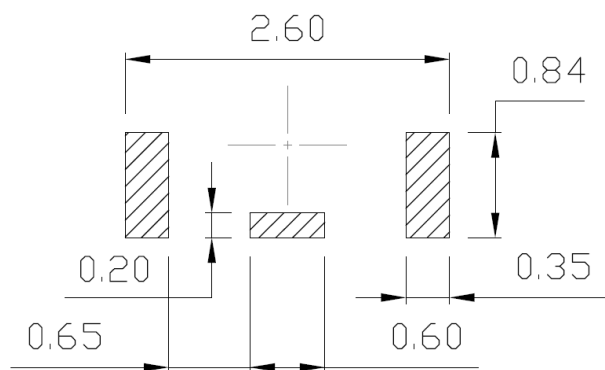
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Package Dimension *All dimensions are in mm, unless otherwise stated*



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



Ordering Information

Part Number	Description	Quantity
PDP92406BT14	Tape & Reel	3000 pcs

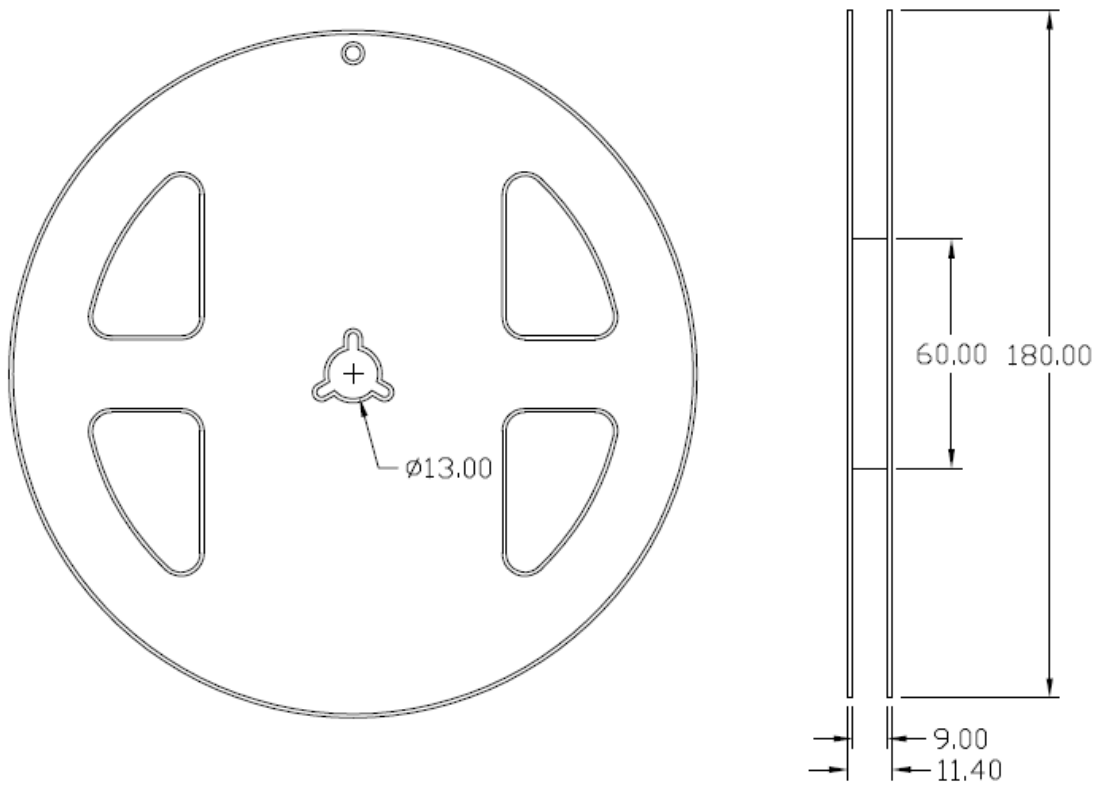


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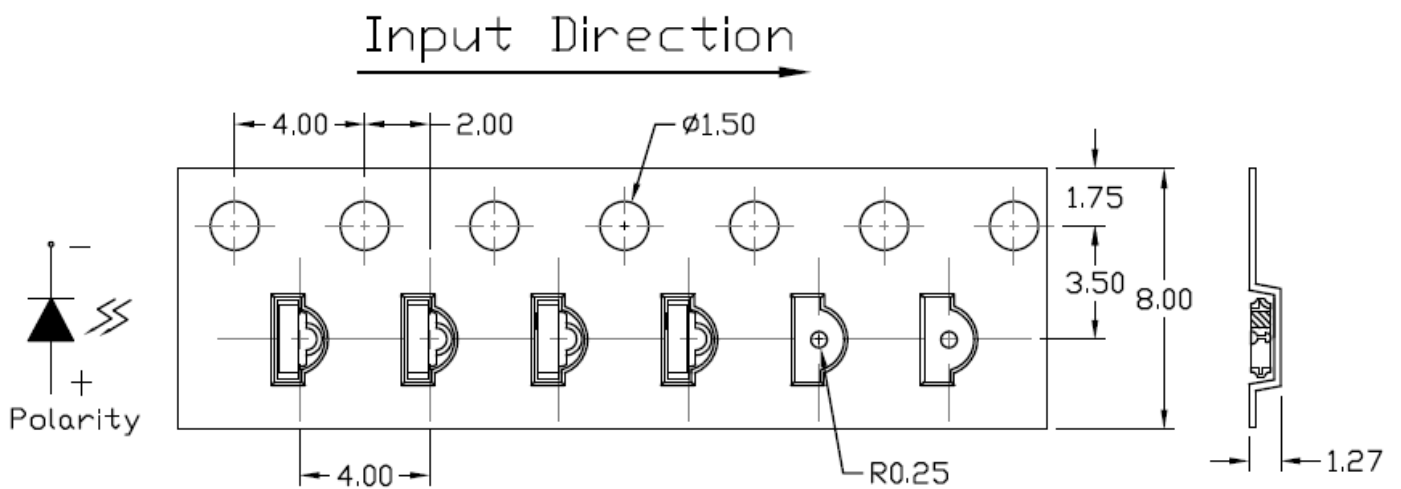
Reel Dimension

All dimensions are in mm, unless otherwise stated



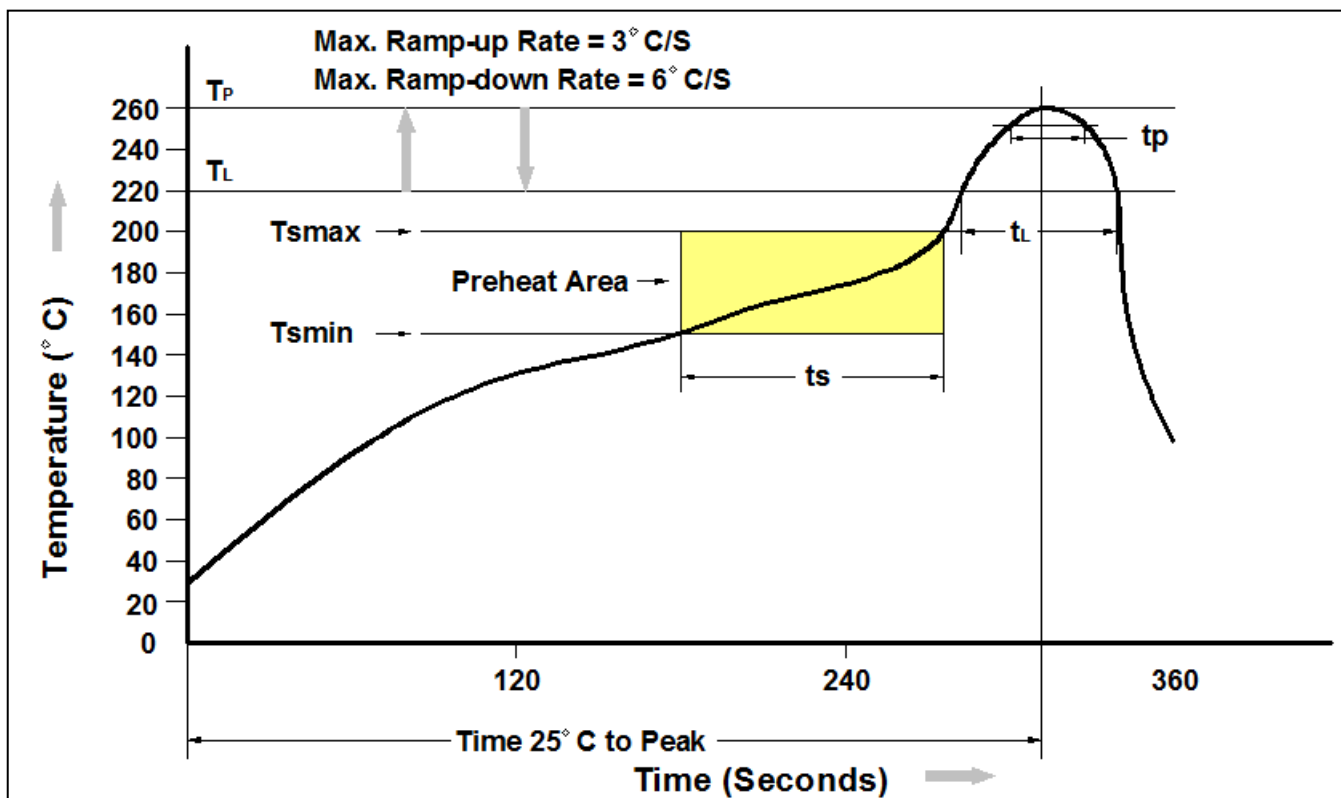
Tape Dimension

All dimensions are in mm, unless otherwise stated





Reflow Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T_{smin})	150°C
Temperature Max. (T_{smax})	200°C
Time (t_s) from (T_{smin} to T_{smax})	60-120 seconds
Ramp-up Rate (t_L to t_P)	3°C/second max.
Liquidous Temperature (T_L)	217°C
Time (t_L) Maintained Above (T_L)	60 – 150 seconds
Peak Body Package Temperature	260°C +0°C / -5°C
Time (t_P) within 5°C of 260°C	30 seconds
Ramp-down Rate (T_P to T_L)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.



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