



SMD Type Photo Diode with Daylight Filter

Features

- Small double-end package
- High reliability
- Spectral range of sensitivity: 760-1100nm
- Fast Response time
- RoHS compliance

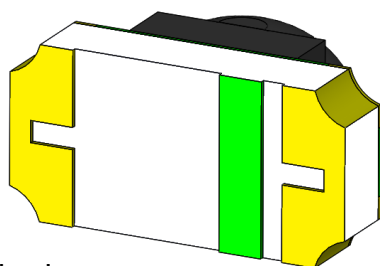
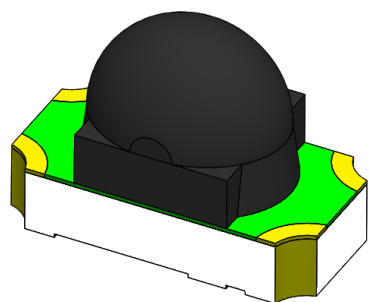
Applications

- Infrared sensor

Description

The PDP91608BT11 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 _{to}	Total Power Dissipation	150	mW	

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

Optical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
λ	Spectral Bandwidth	-	760	-	1100	nm	
λ _P	Peak Sensitivity	-	-	900	-	nm	
θ _{1/2}	View Angle at X axis	V _R =5V	-	±52.5	-	deg	
	View Angle at Y axis		-	±47.5	-	deg	

Electrical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I _D	Dark Current	Ee=0mW /cm ² V _R =10V	-	-	10	nA	
V _{BR}	Reverse Breakdown Voltage	Ee=0mW /cm ² I _R =100uA	33	-	-	V	
V _{OC}	Open-Circuit Voltage	Ee=1mW /cm ² λ _P =940nm	-	0.30	-	V	
I _{SC}	Short-Circuit Current		-	1.50	-	μA	
I _R	Reverse Light Current	Ee=1mW /cm ² λ _P =940nm, V _R =5V	1.0	1.83	-	μA	
C _T	Transition Capacitance	Ee=0mW /cm ² f=1MHz, V _R =5V	-	0.85	-	pF	



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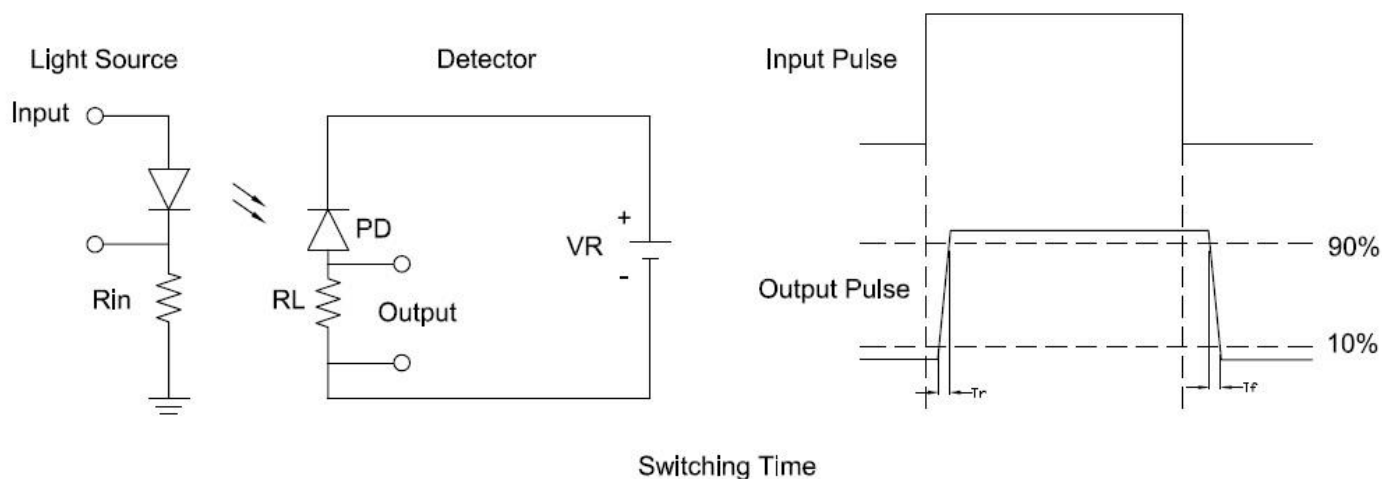
Switching Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
t_r	Rise Time	$V_R = 10V, R_L = 10k\Omega$	-	400	-	ns	2
t_f	Fall Time		-	400	-		

Notes:

1 : Soldering time ≤ 5 seconds.

2 : Test circuit :





Typical Characteristic Curves

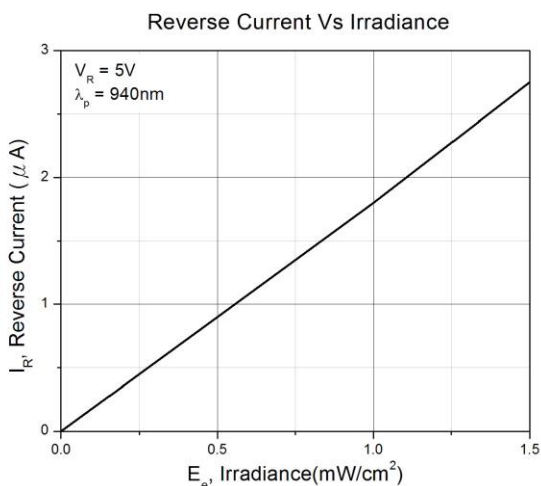


Figure 1

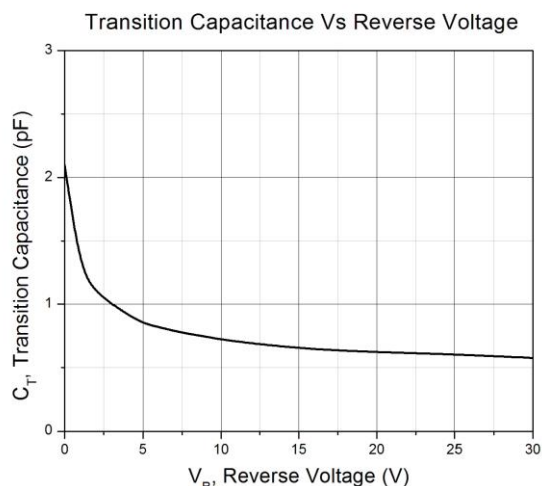


Figure 2

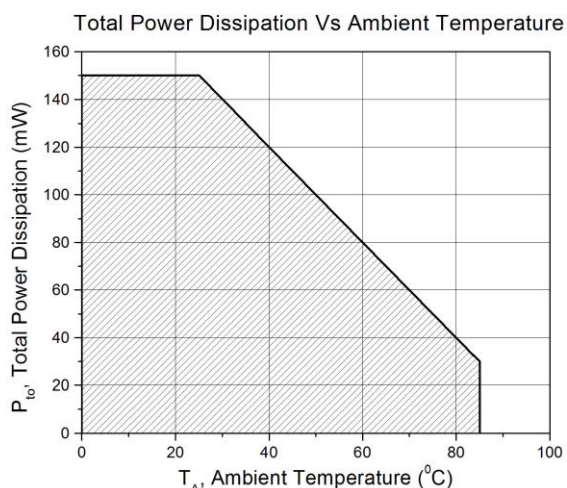


Figure 3

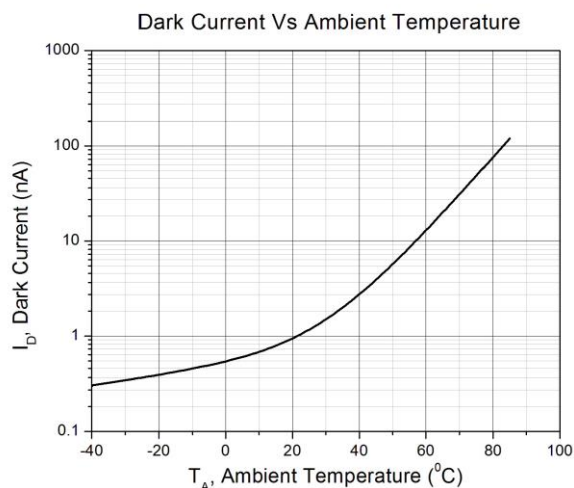


Figure 4

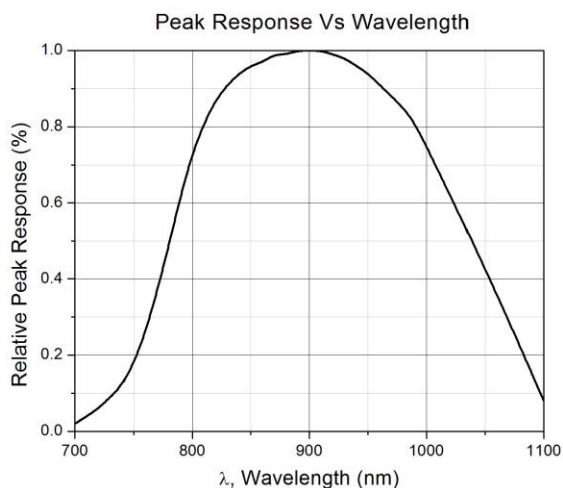


Figure 5

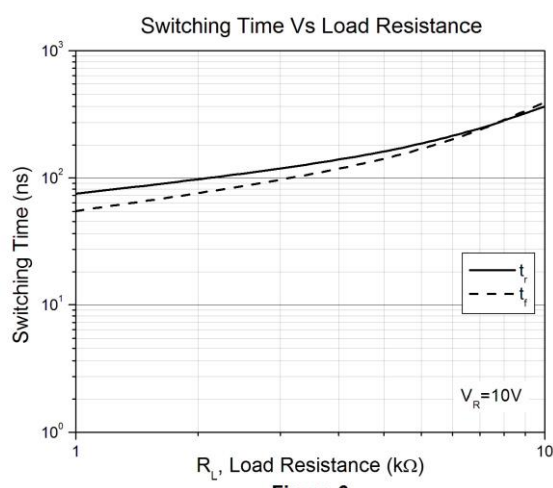


Figure 6



Typical Characteristic Curves

Angular Displacement at X axis

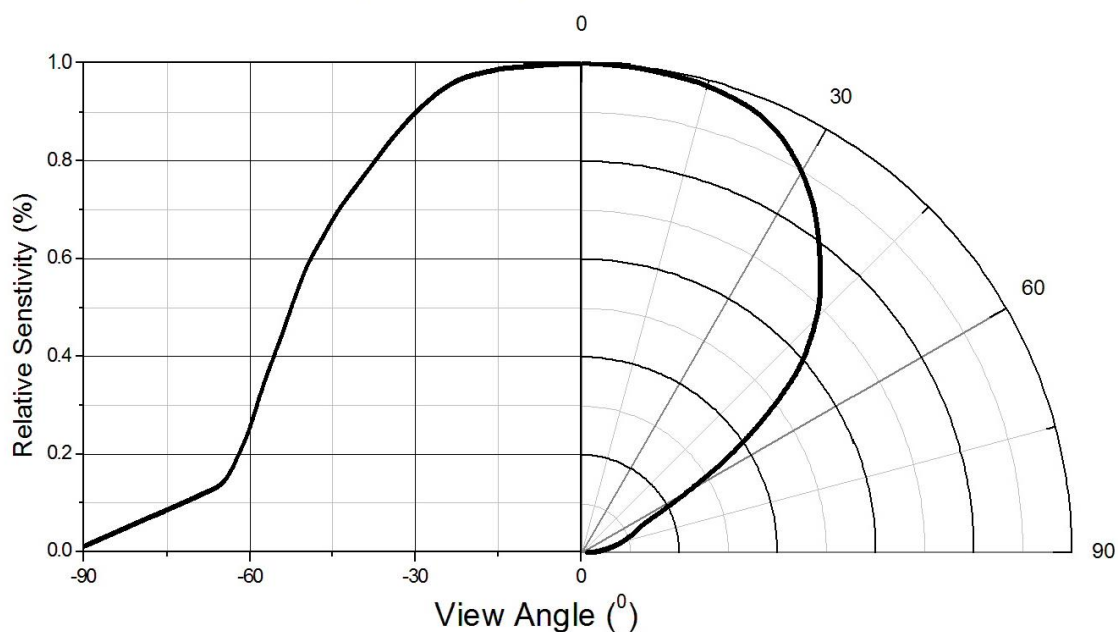


Figure 7

Angular Displacement at Y axis

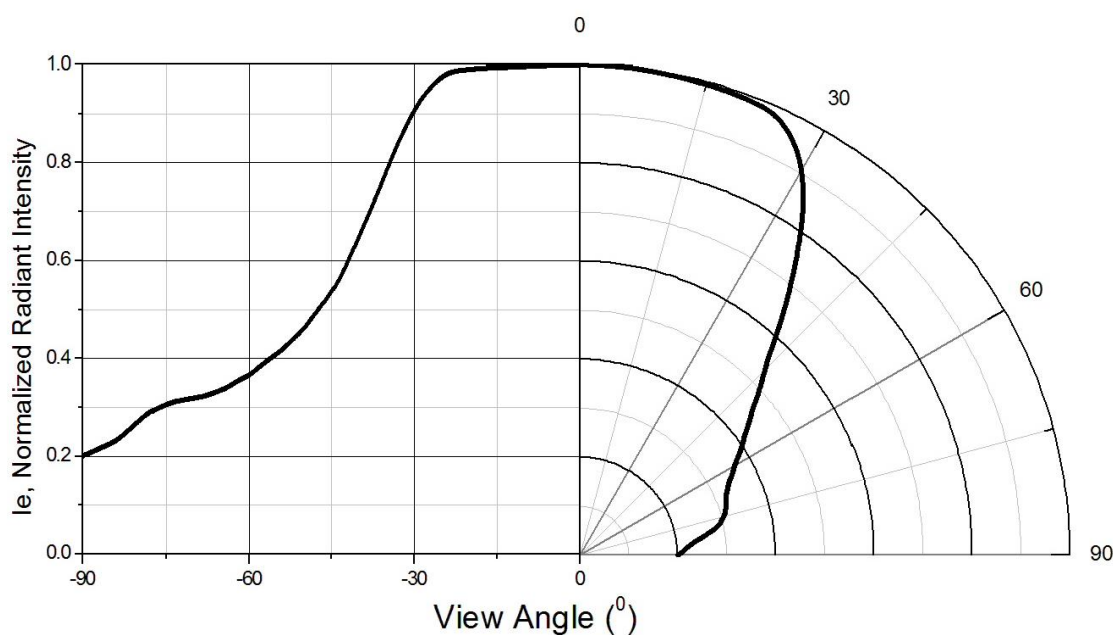
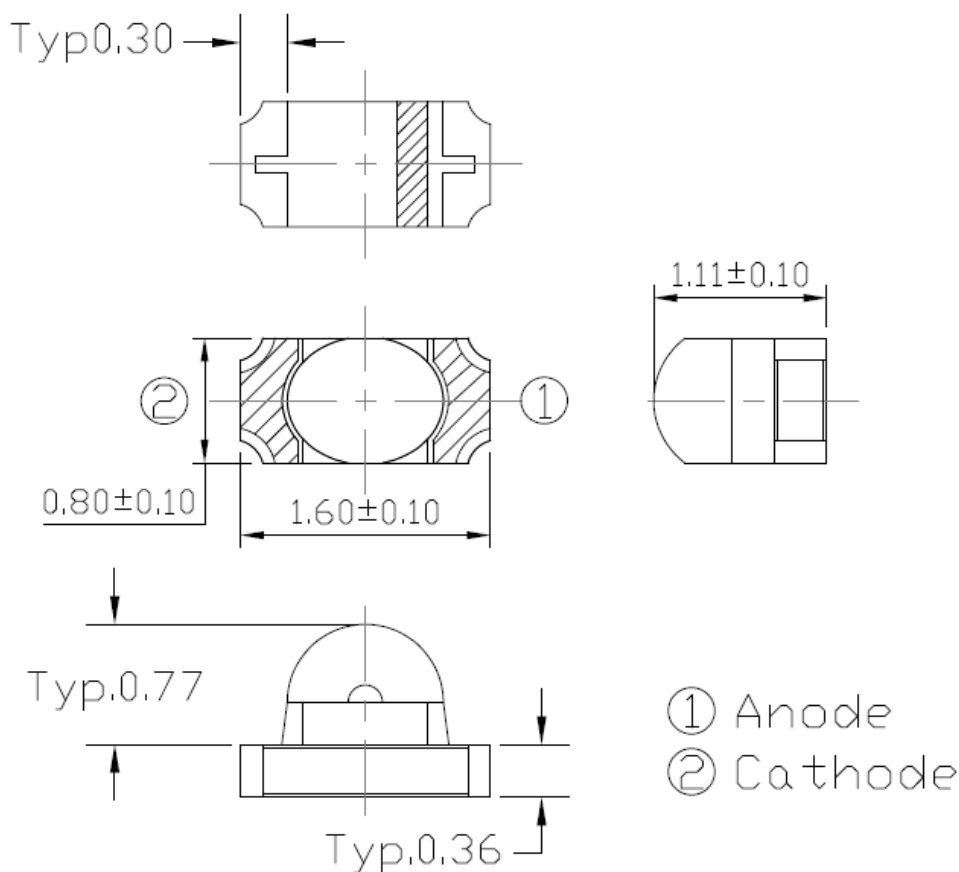


Figure 8

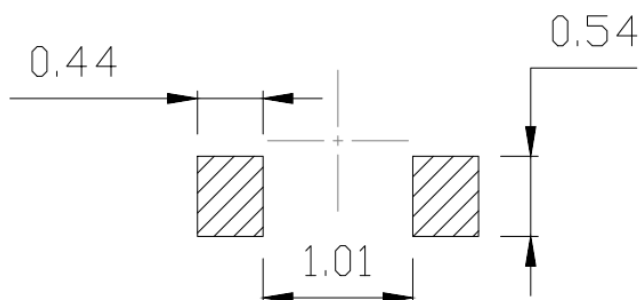


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Package Dimension *All dimensions are in mm, unless otherwise stated*



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



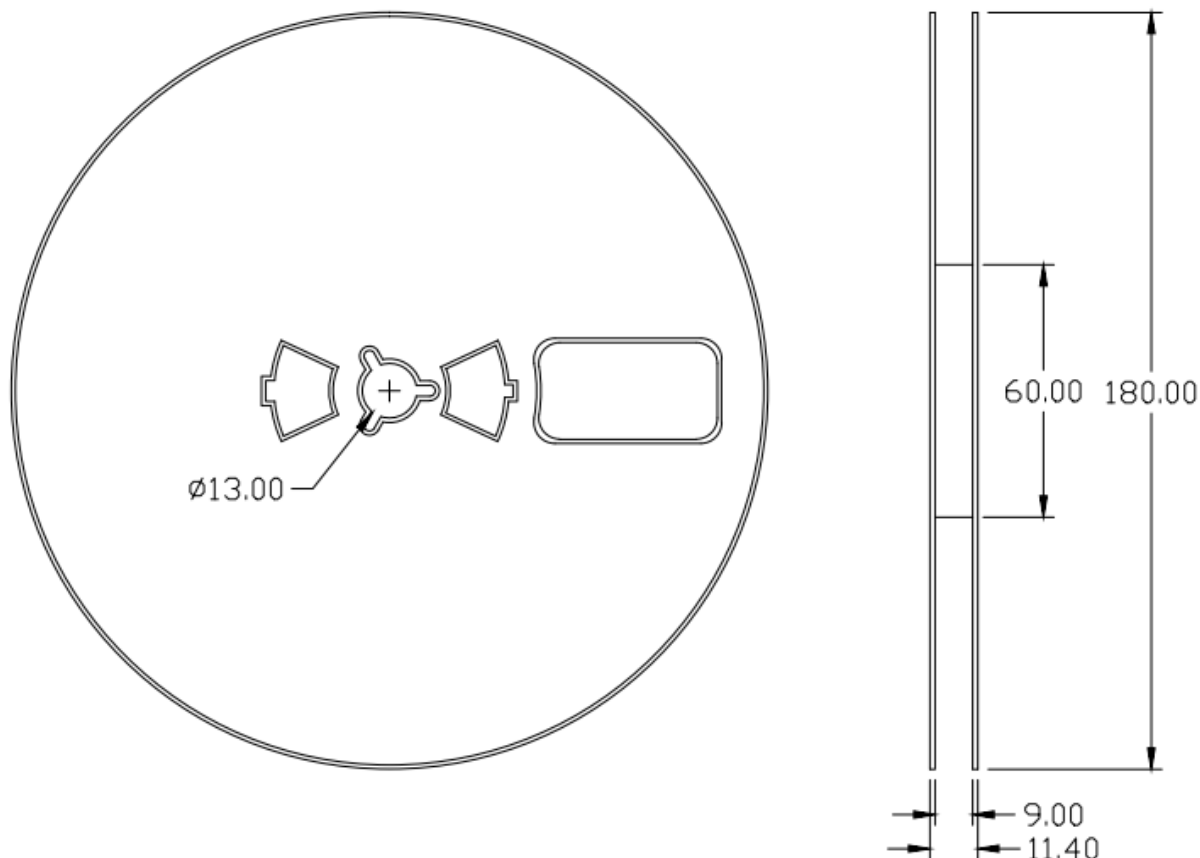
Ordering Information

Part Number	Description	Quantity
PDP91608BT11	Tape & Reel	3000 pcs

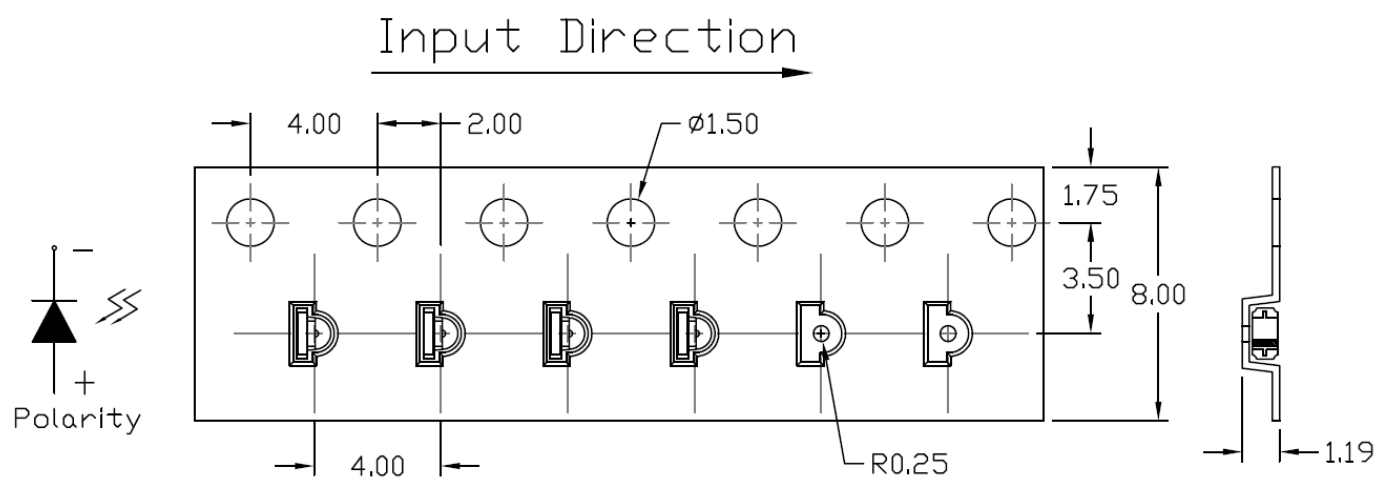


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Reel Dimension *All dimensions are in mm, unless otherwise stated*



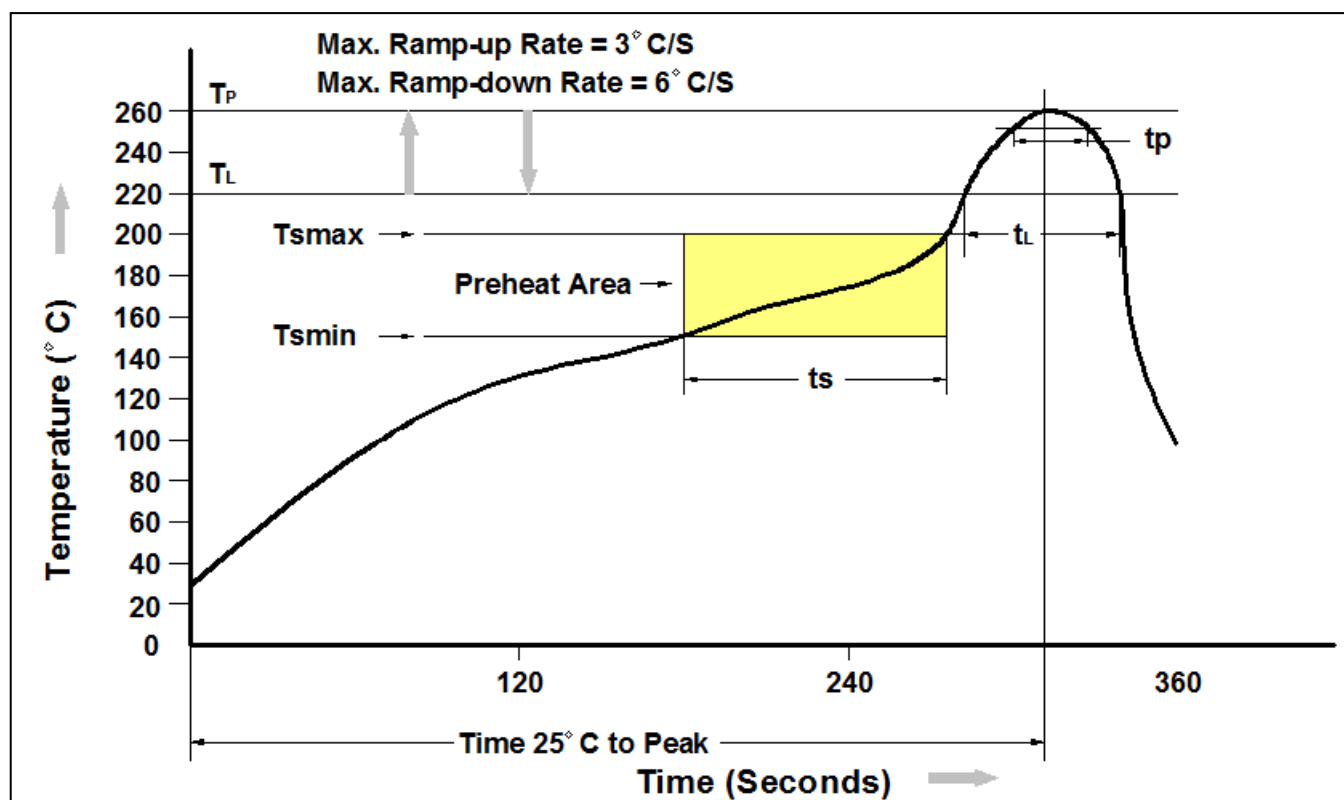
Tape Dimension *All dimensions are in mm, unless otherwise stated*





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Reflow Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T _{sm})	150°C
Temperature Max. (T _{sm})	200°C
Time (t _s) from (T _{sm} to T _{sm})	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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