



SMD Type Photo Diode with Daylight Filter

Features

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

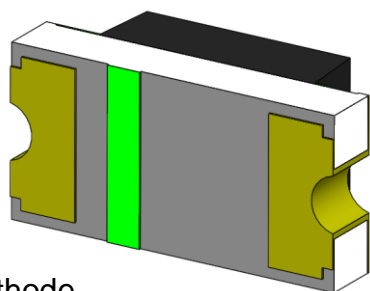
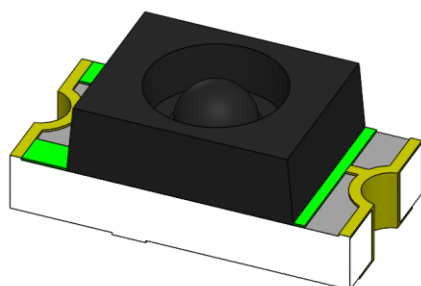
Applications

- Infrared sensor

Description

The PDP93015BT12 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	140	mW	

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	
θ _{1/2}	View Angle	V _R =5V	-	±52.5	-	deg	

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 =100μA	33	-	-	V	
V _{OC}	Open-Circuit Voltage	E _e =1mW /cm ²	-	0.29	-	V	
I _{SC}	Short-Circuit Current	λ _P =940nm	-	1.0	-	μA	
I _{RL}	Reverse Light Current	E _e =1mW /cm ² λ _P =940nm, V _R =5V	0.50	1.3	-	μA	
C _T	Transition Capacitance	E _e =0mW /cm ² f=1MHz, V _R =5V	-	3.65	-	pF	



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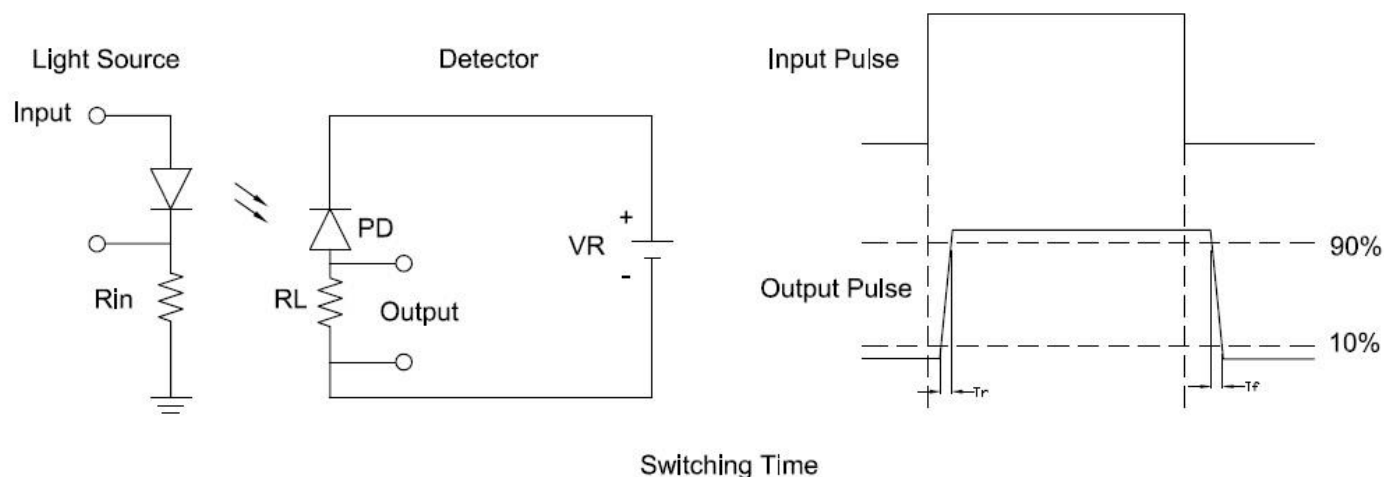
Switching Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
t_r	Rise Time	$V_R = 10V, R_L = 10k\Omega$	-	820	-	ns	2
t_f	Fall Time		-	940	-		

Notes:

1 : Soldering time ≤ 5 seconds.

2 : Test circuit :





Typical Characteristic Curves

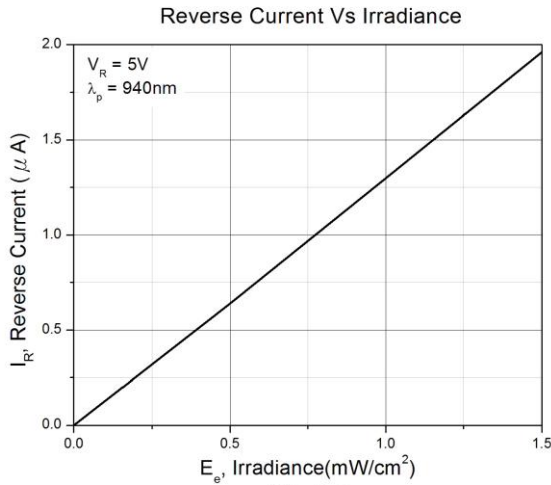


Figure 1

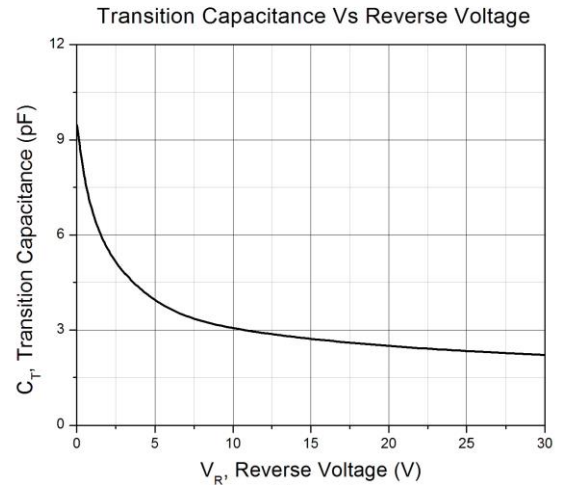


Figure 2

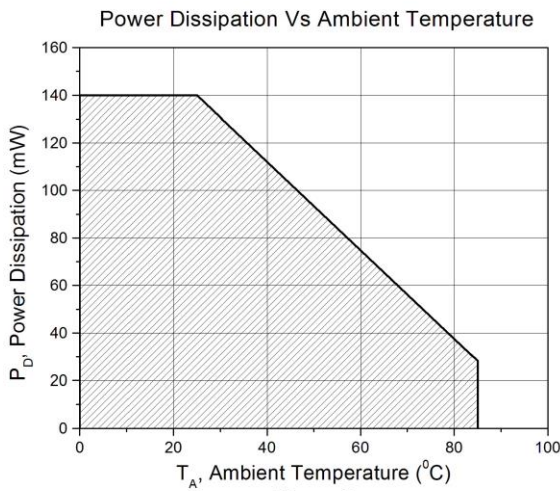


Figure 3

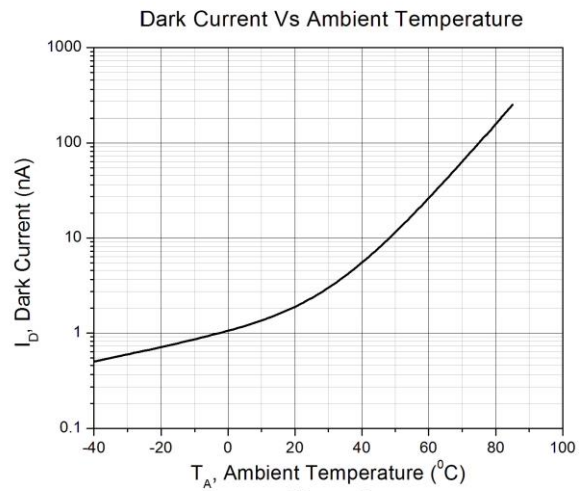


Figure 4

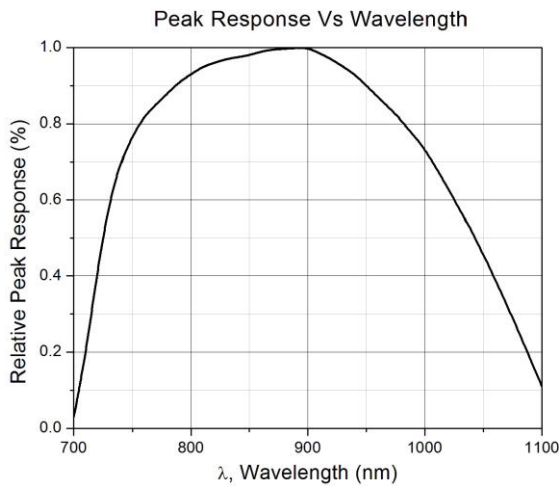


Figure 5

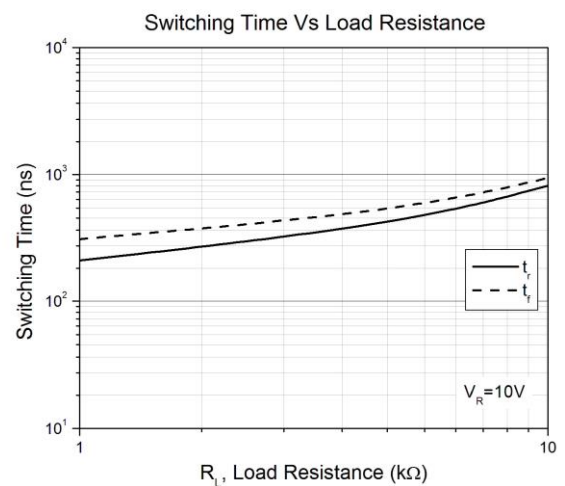


Figure 6



Typical Characteristic Curves

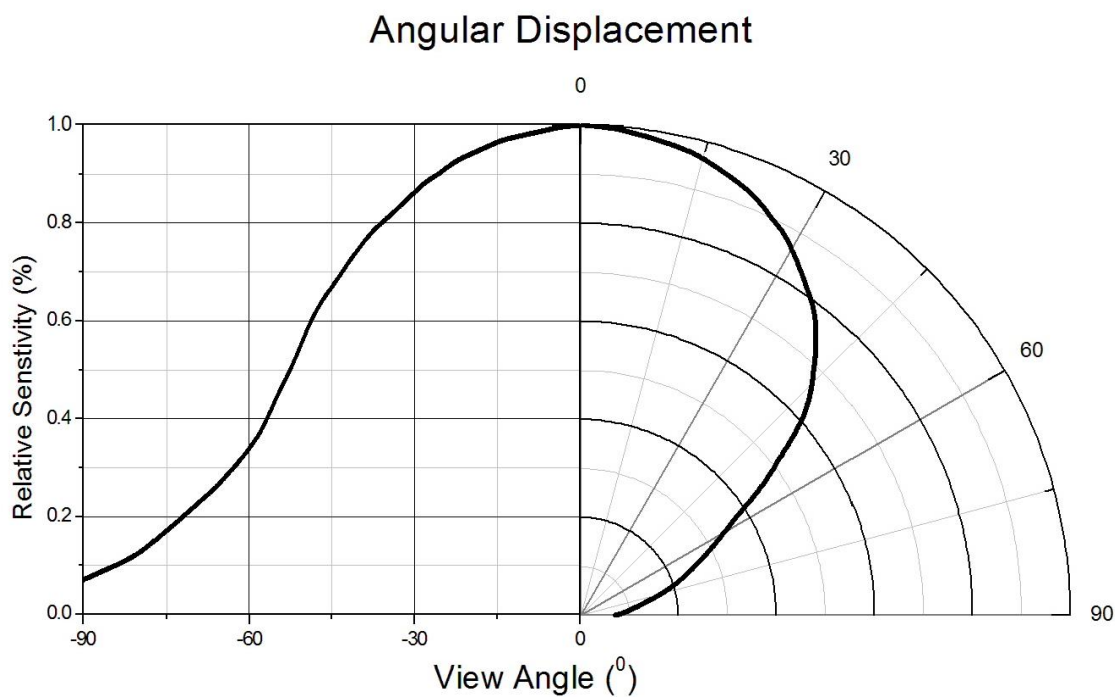
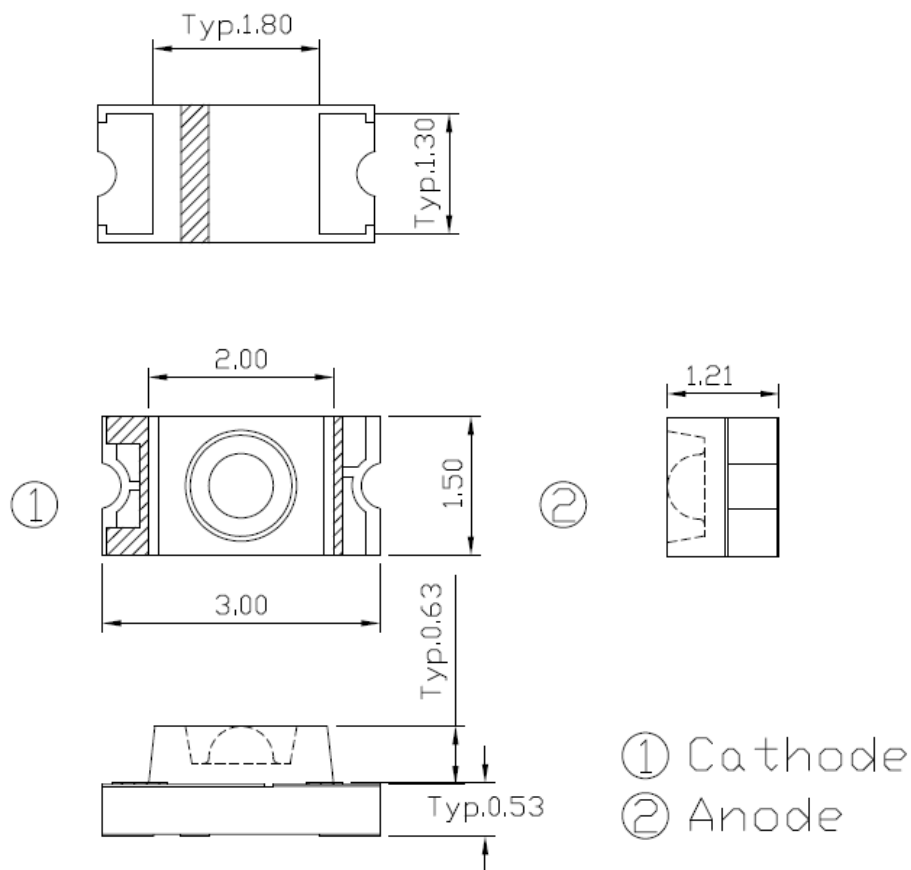


Figure 7

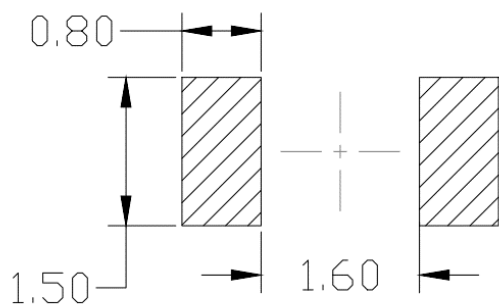


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Package Dimension *All dimensions are in mm, unless otherwise stated*



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



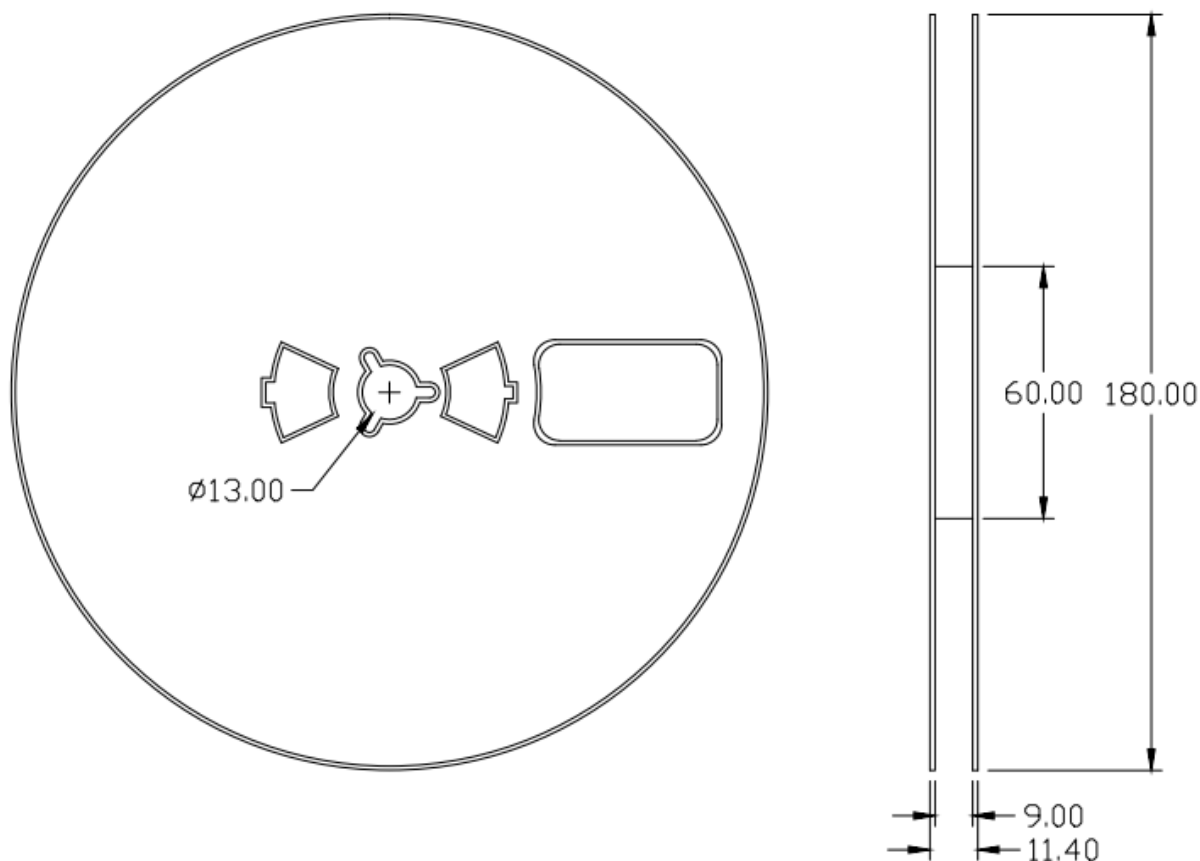
Ordering Information

Part Number	Description	Quantity
PDP93015BT12	Tape & Reel	3000 pcs

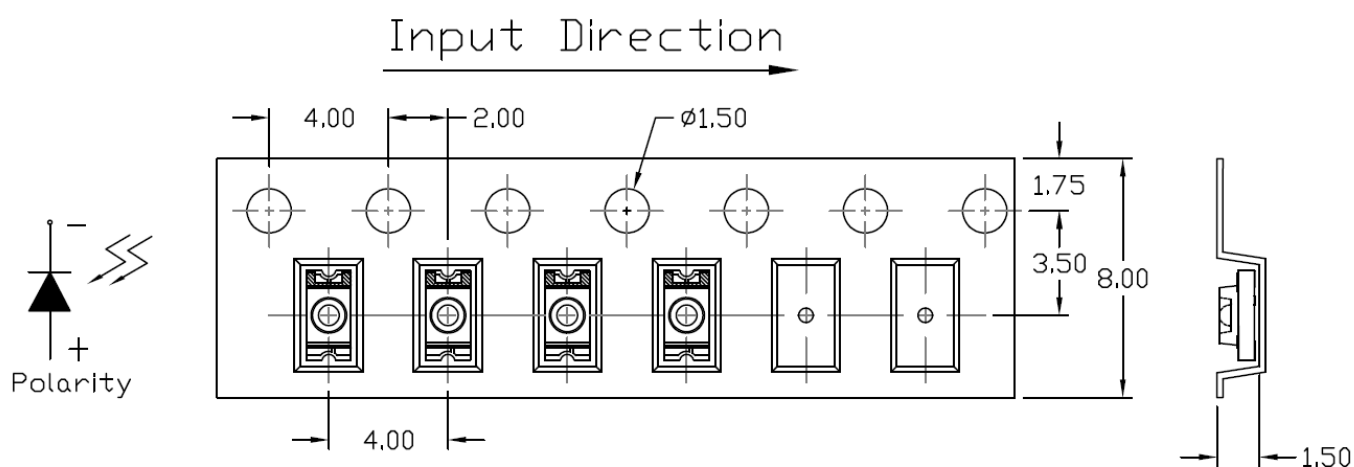


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Reel Dimension *All dimensions are in mm, unless otherwise stated*



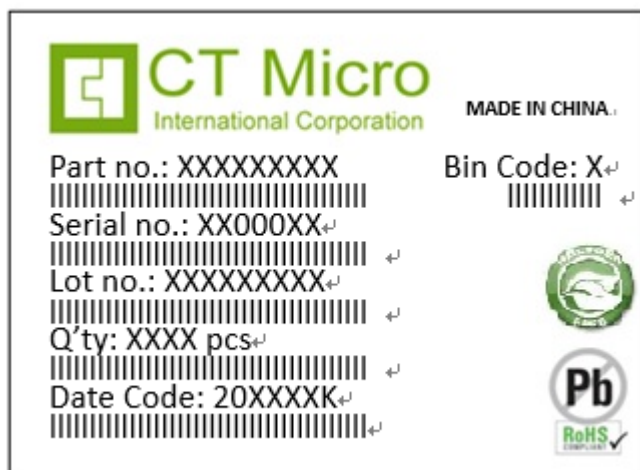
Tape Dimension *All dimensions are in mm, unless otherwise stated*





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Label Form Specification



Part no: CTM Production Number
 Serial no: Production Number
 Lot no: Lot number
 Q'ty: Packing Quantity
 Date Code: Manufacture Date
 Bin Code: I_{RL} Ranks
 MADE IN CHINA: Production Place

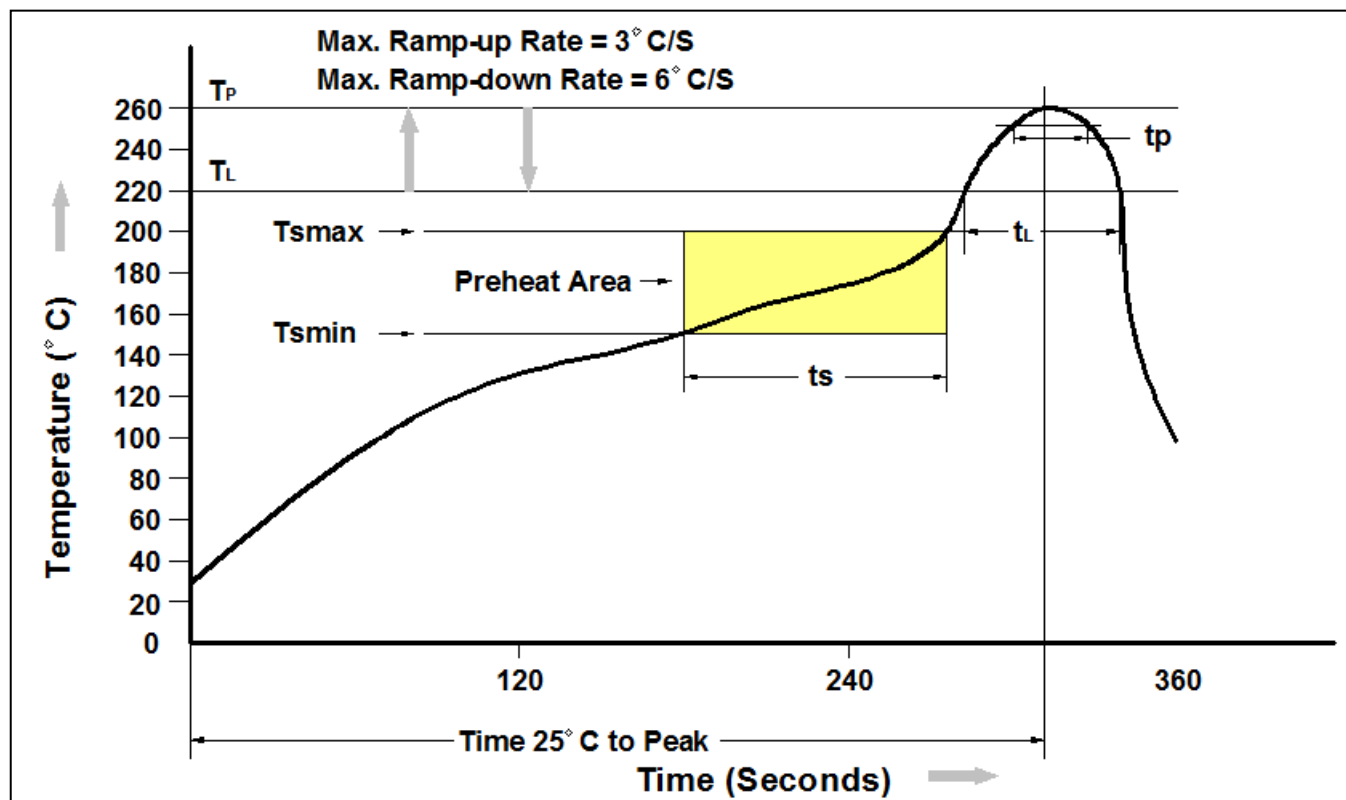
Storage Condition

1. Do not open moisture proof bag before the products are ready to use.
2. The moisture barrier bag should be stored at 30°C and 90%R.H. max. before opening.
Shelf life of non-opened bag is 12 months after the bag sealing date.
3. After opening the moisture barrier bag floor life is 168h at 30°C/60%RH. max. Unused LEDs should be resealed into moisture barrier bag. (Refer to J-STD-020 Standard)
4. If the moisture absorbent material has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the J-STD-033 Standard conditions.



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Reflow Profile



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