



SMD Type Photodiode with Daylight Filter

Features

- Small double-end package
- High reliability
- High Reverse Breakdown
- High Sensitivity
- Spectral range of sensitivity: 700-1100nm
- Fast Response time
- RoHS compliance

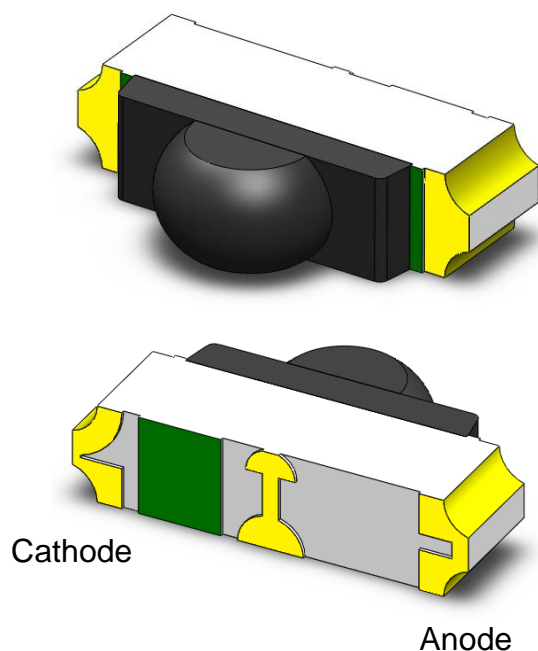
Applications

- 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



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	

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	
θ1/2	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	Ee=0mW /cm ² V _R =10V	-	-	10	nA	
V _{BR}	Reverse Breakdown Voltage	Ee=0mW /cm ² I _R =100uA	33	210	-	V	
V _{OC}	Open-Circuit Voltage	Ee=1mW /cm ² λ _P =940nm	-	0.3	-	V	
I _{SC}	Short-Circuit Current		-	1.0	-	μA	
I _{RL}	Reverse Light Current	Ee=1mW /cm ² λ _P =940nm, V _R =5V	1.0	1.47	-	μA	
C _T	Transition Capacitance	Ee=0mW /cm ² f=1MHz, V _R =5V	-	1.53	-	pF	



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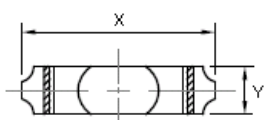
Switching Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
t_r	Rise Time	$V_R = 10V, R_L = 10k\Omega$	-	230	-	ns	3
t_f	Fall Time		-	200	-		

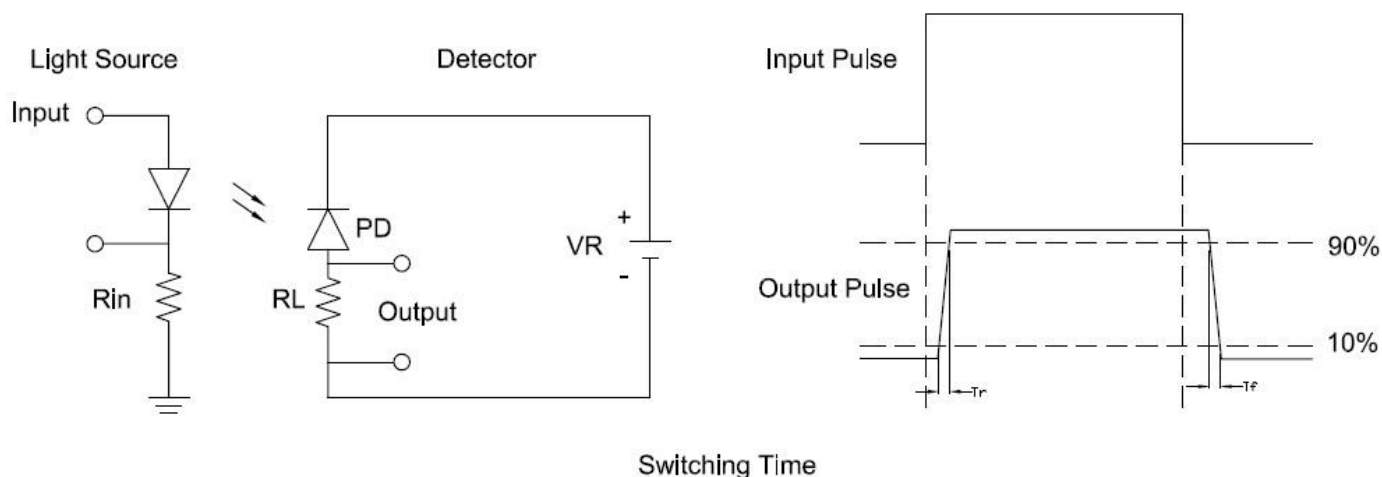
Notes:

1 : Soldering time ≤ 5 seconds.

2 : Test conditions :

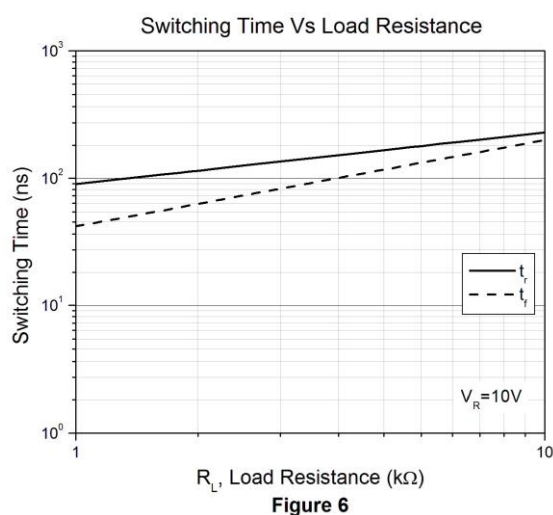
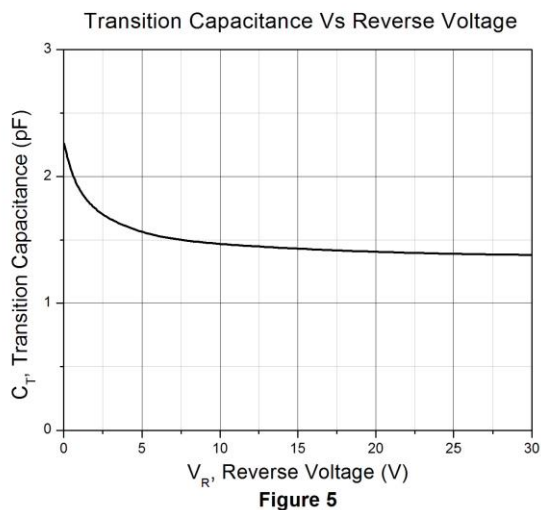
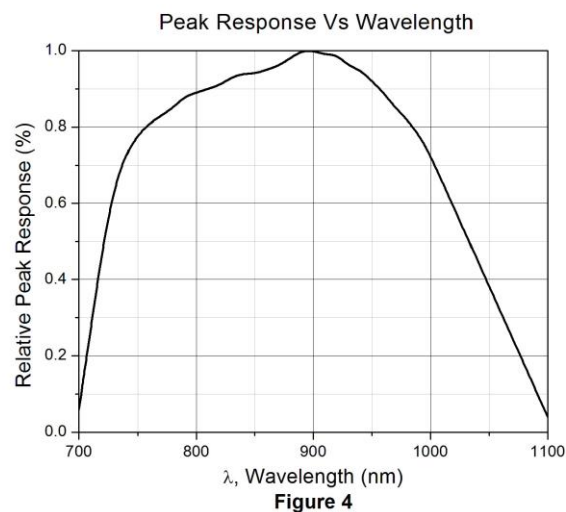
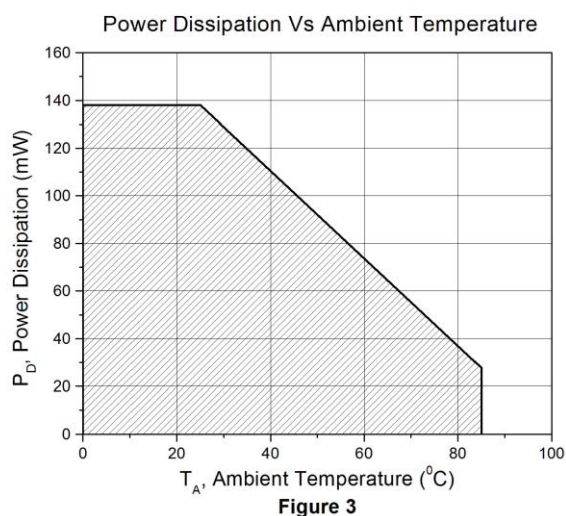
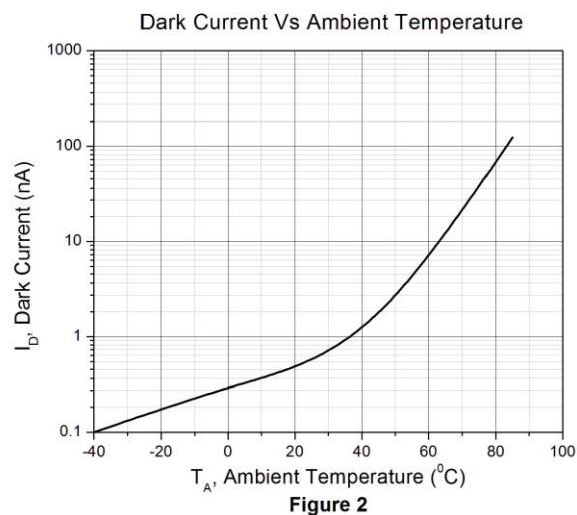
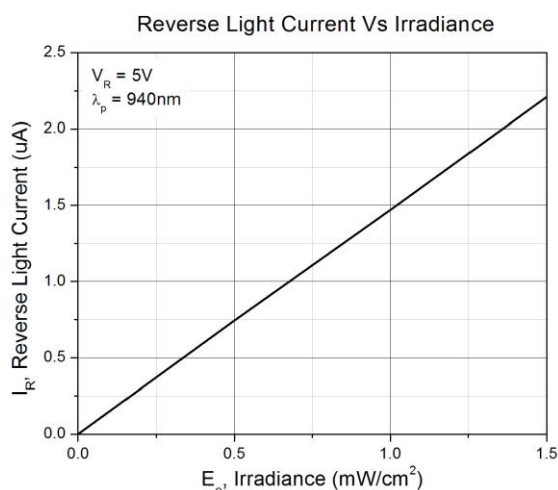


3 : Test circuit :





Typical Characteristic Curves





Typical Characteristic Curves

Angular Displacement at X axis

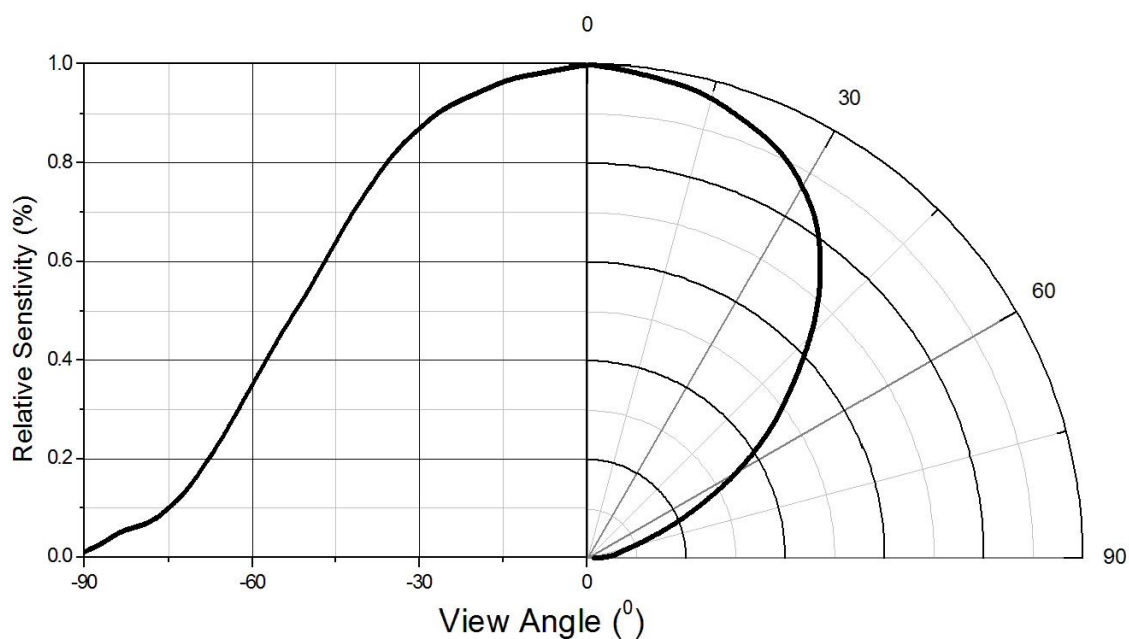


Figure 7

Angular Displacement at Y axis

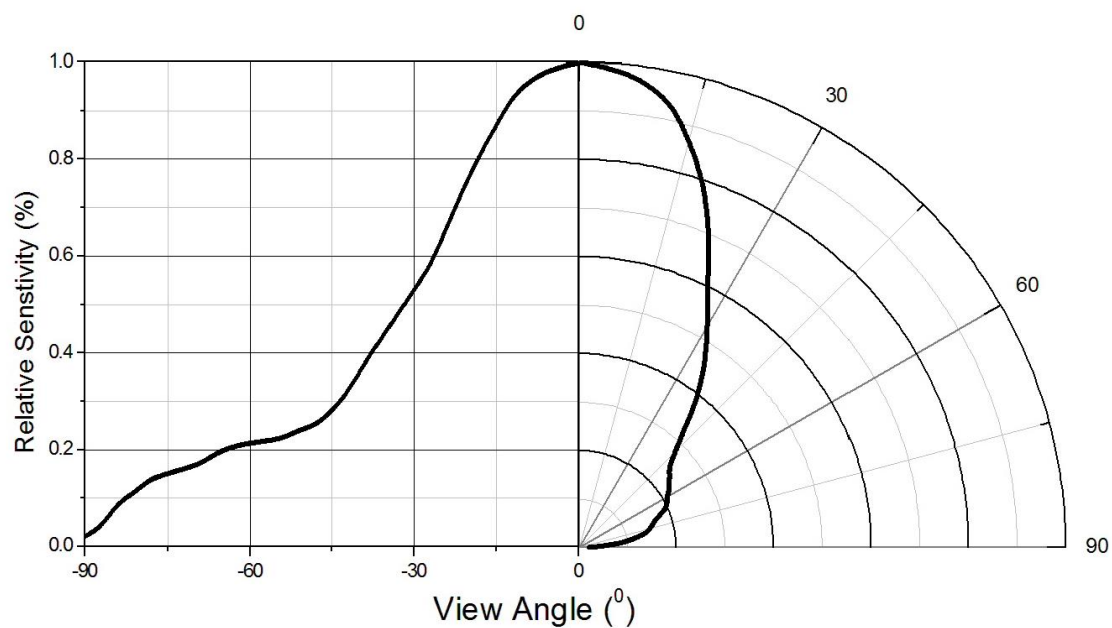
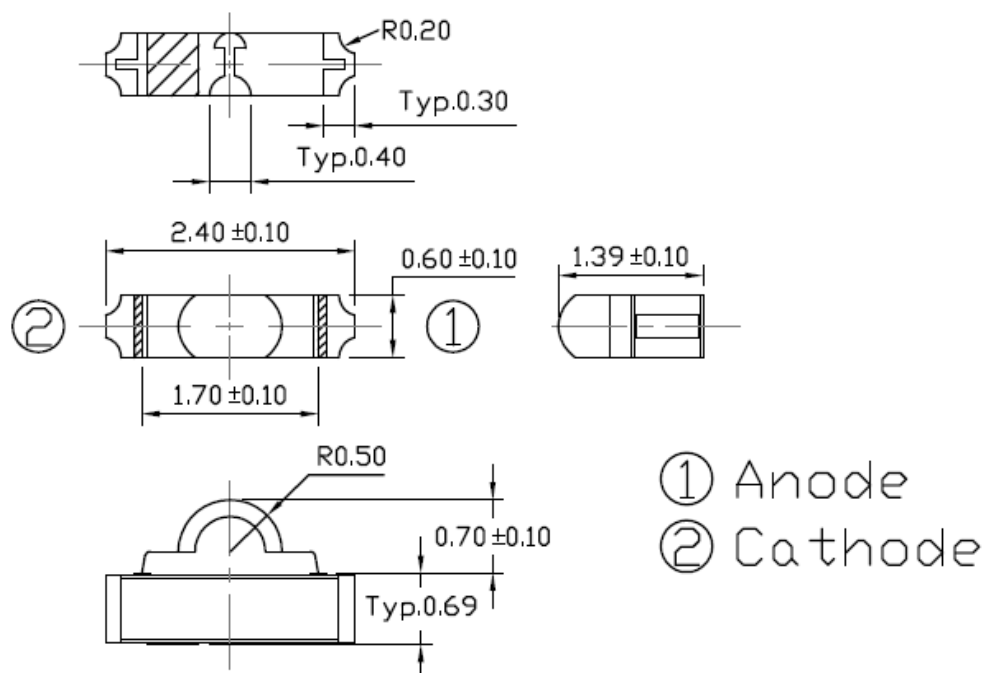


Figure 8

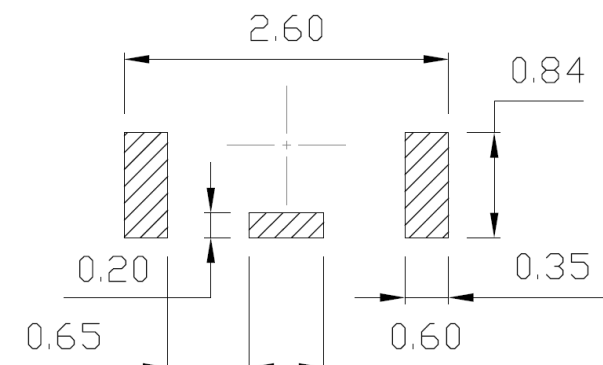


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Package Dimension *All dimensions are in mm, unless otherwise stated*



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



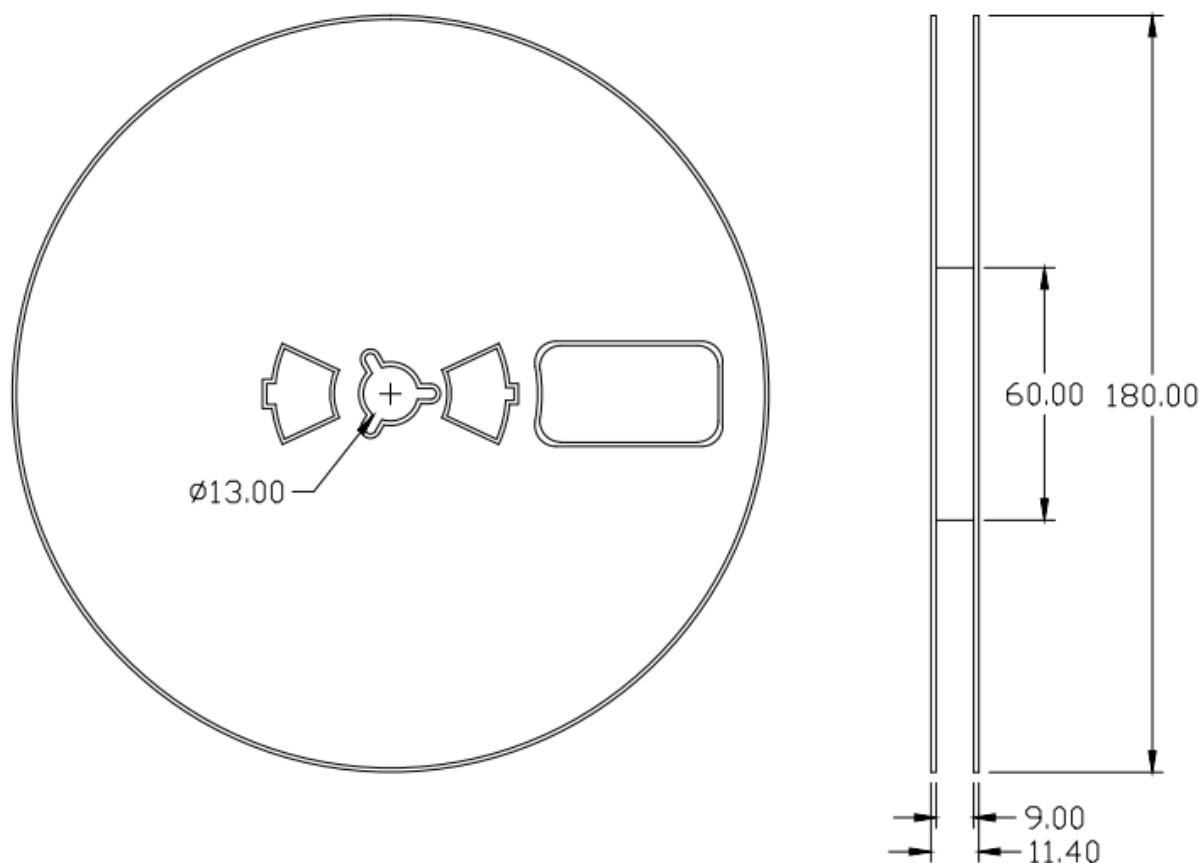
Ordering Information

Part Number	Description	Quantity
PDP92406BT14	Tape & Reel	5000 pcs

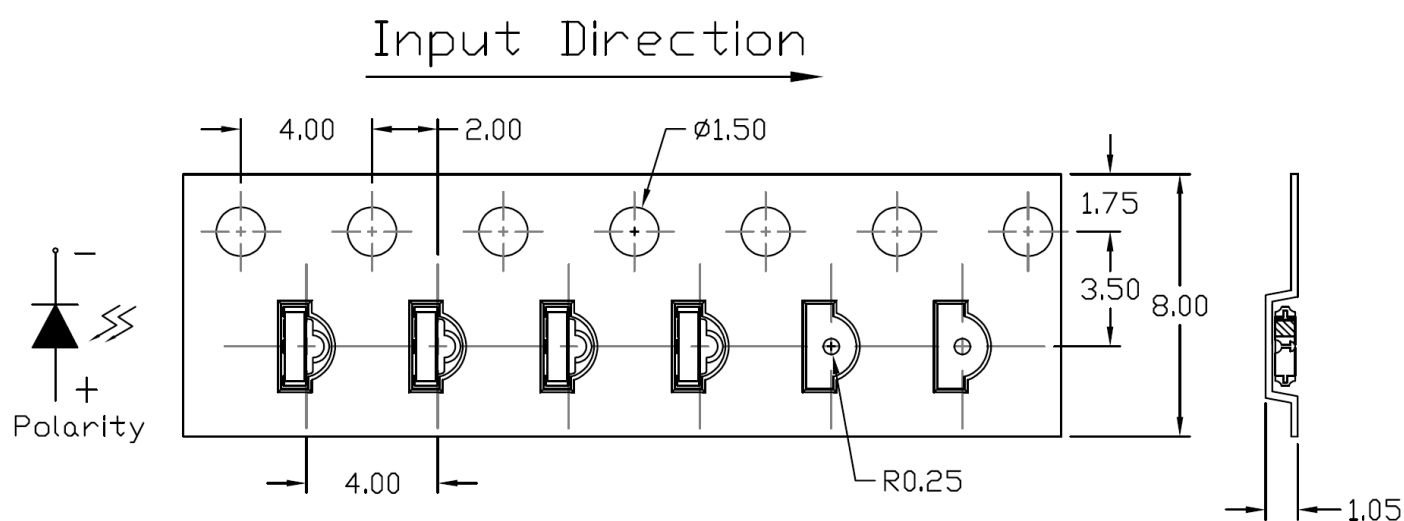


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Reel Dimension *All dimensions are in mm, unless otherwise stated*



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





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Label Form Specification

CT Micro
International Corporation

MADE IN CHINA

Part no.: XXXXXXXXX
Serial no.: XX000XX
Lot no.: XXXXXXXXX
Q'ty: XXXX pcs
Date Code: 20XXXXX
Bin Code: X

RoHS
Pb-free

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

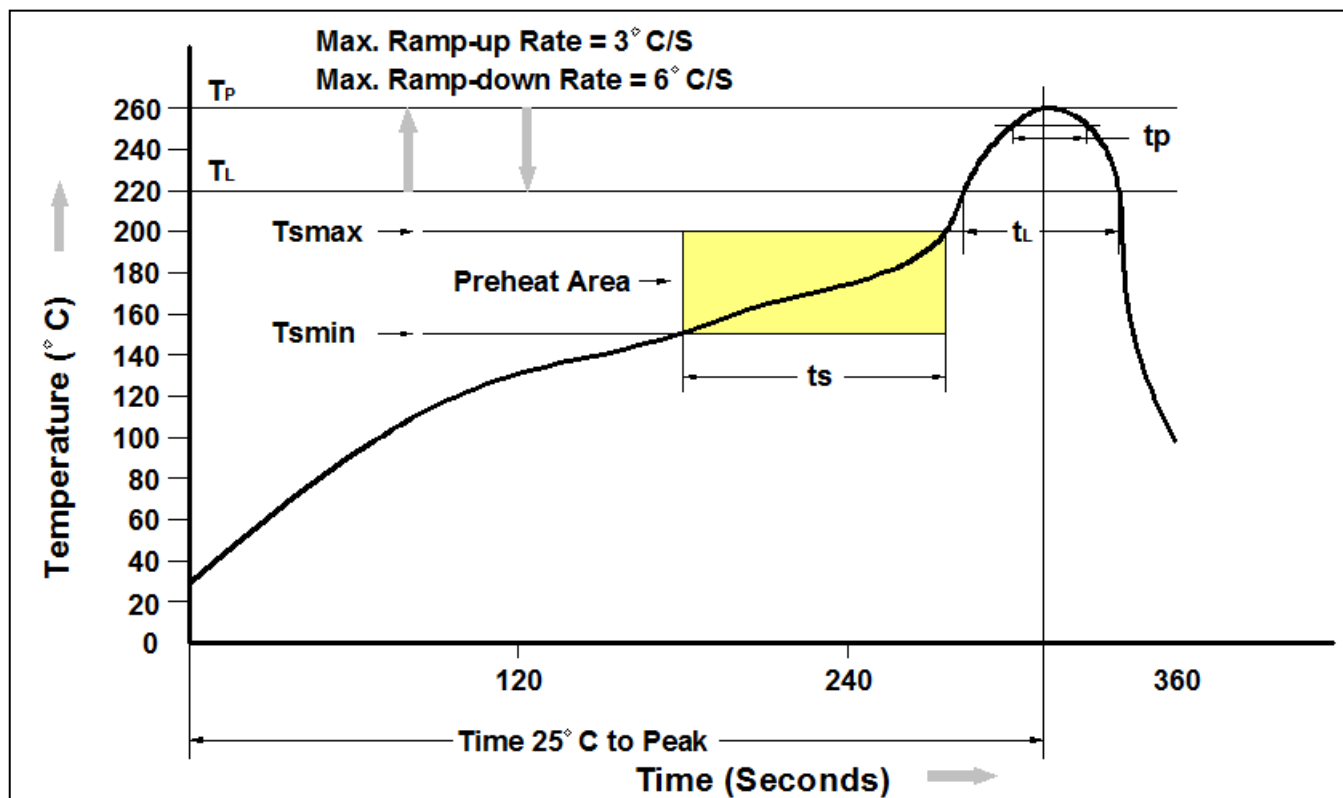
Storage Condition

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. (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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