



SMD Type Phototransistor with Daylight Filter

Features

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

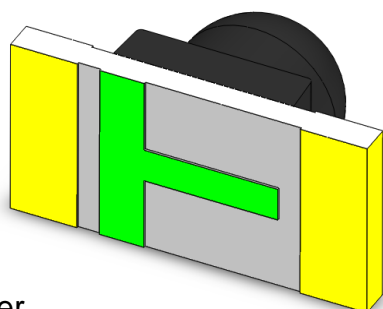
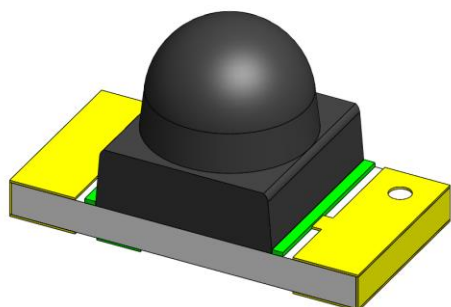
Applications

- Infrared sensor

Description

The PTP83216BT18 is silicon NPN Phototransistor housed in a miniature SMD package. The device comes with a superior filtering for visible light by utilizing special black molding compound.

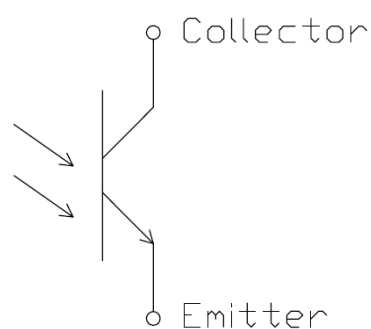
Package Outline



Emitter

Collector

Schematic





SMD Type Phototransistor with Daylight Filter

Absolute Maximum Rating at 25°C

Symbol	Parameters	Ratings	Units	Notes
I _C	Collector Current	20	mA	
B _V CE0	Collector-Emitter Voltage	35	V	1
B _V ECO	Emitter-Collector Voltage	5	V	2
T _{opr}	Operating Temperature	-40 ~ +85	°C	
T _{stg}	Storage Temperature	-40 ~ +100	°C	
T _{sol}	Soldering Temperature	260	°C	3
P _{to}	Total Power Dissipation	150	mW	

Optical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
λ	Spectral Bandwidth	-	700	-	1100	nm	
λ _P	Peak Sensitivity	-	-	880	-	nm	
θ _{1/2}	View Angle	V _{CE} =5V	-	±15	-	deg	

Electrical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I _{CEO}	Dark Current	E _e =0mW /cm ² V _{CE} =20V	-	-	100	nA	
V _{CE(sat)}	Collector-Emitter Saturation Voltage	E _e =1mW /cm ² I _C =1.4mA	-	-	0.4	V	
I _C	Collector Light Current	E _e =1mW /cm ² λ _P =940nm, V _{CE} =5V	1.4	2.8	6.4	mA	4
C _T	Terminal Capacitance	E _e =0mW /cm ² f=1MHz, V _{CE} =5V	-	3.80	-	pF	



SMD Type Phototransistor with Daylight Filter

Switching Characteristics

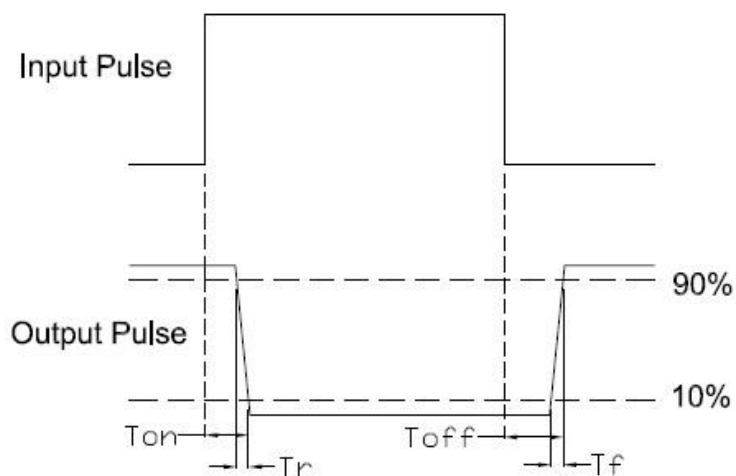
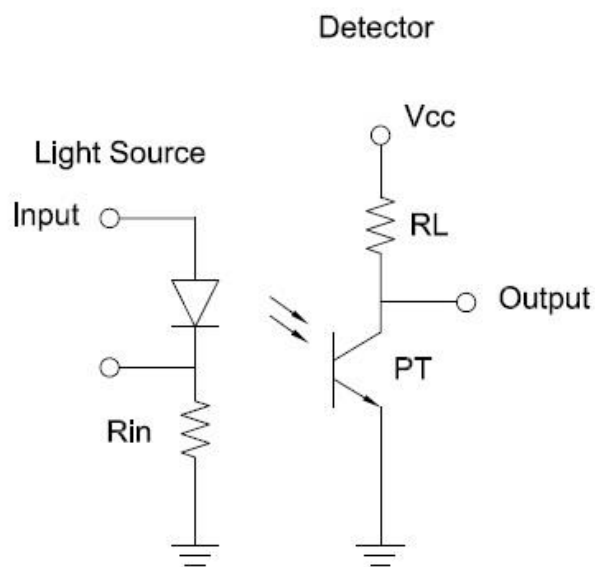
Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
t_r	Rise Time	$V_{ce} = 5V, R_L = 100\Omega$ $I_C = 1.0mA$	-	6	-	μs	5
t_f	Fall Time		-	7	-		
t_{on}	Turn on Delay Time		-	11	-		
t_{off}	Turn off Delay Time		-	7.9	-		

Notes:

- 1 : Test conditions : $I_C = 100\mu A, E_e = 0mW/cm^2$.
- 2 : Test conditions : $I_E = 100\mu A, E_e = 0mW/cm^2$.
- 3 : Soldering time ≤ 5 seconds.
- 4 : I_C Bin Rank :

Bin Code	P3	P4	P5
Min	1.4	2.0	3.2
Max	2.8	4.4	6.4

5 : Test circuit:



Switching Time



Typical Characteristic Curves

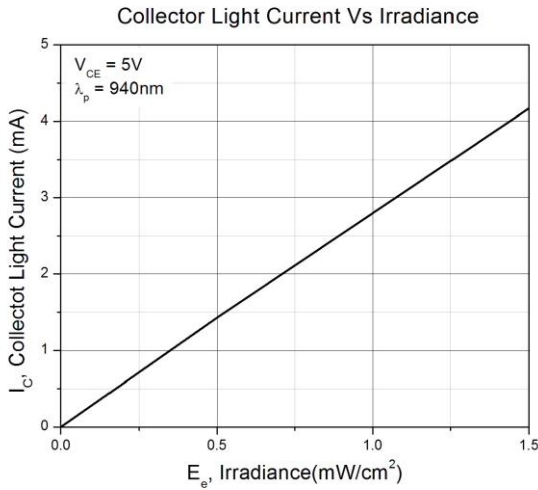


Figure 1

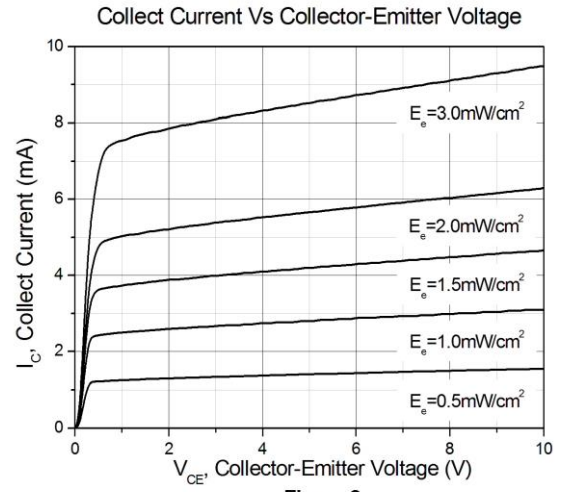


Figure 2

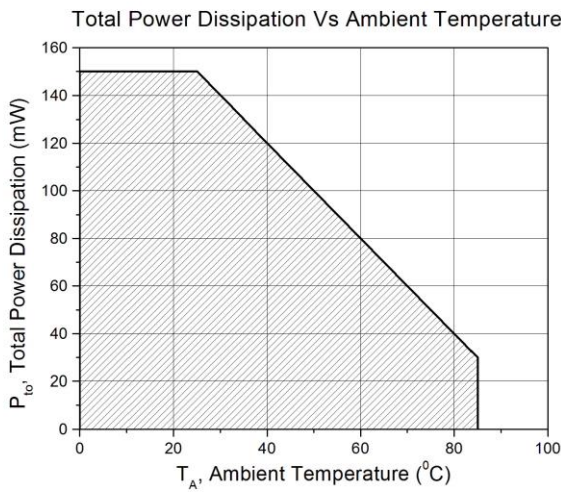


Figure 3

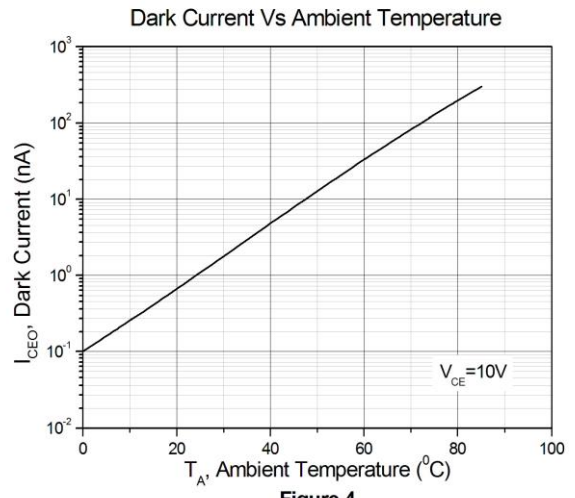


Figure 4

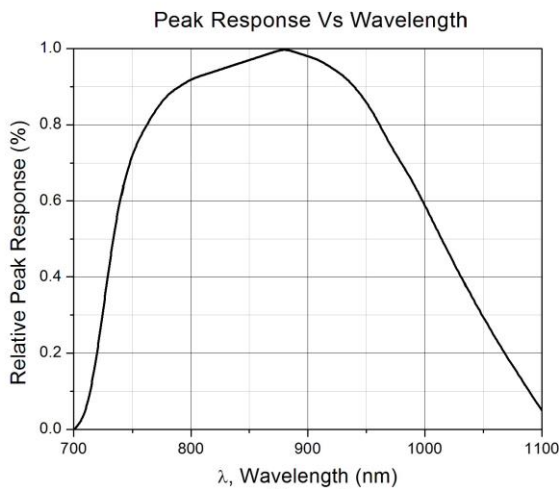


Figure 5

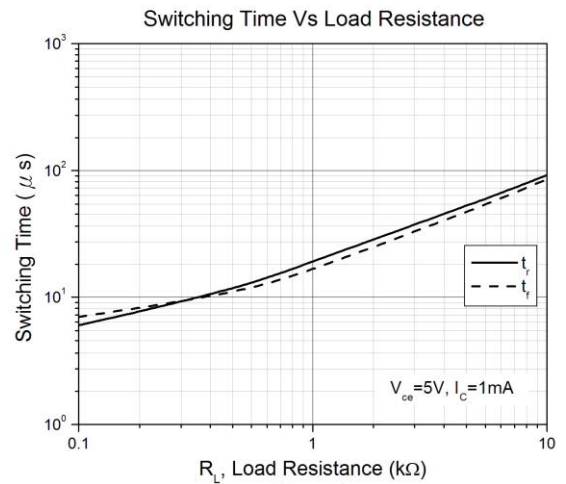
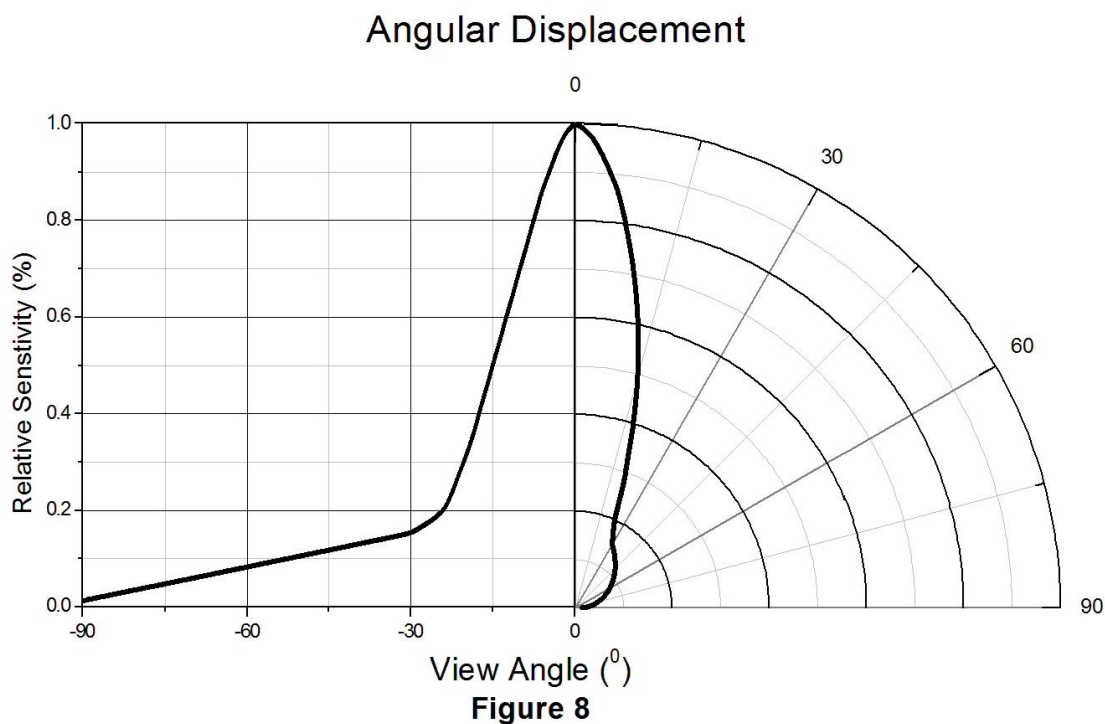
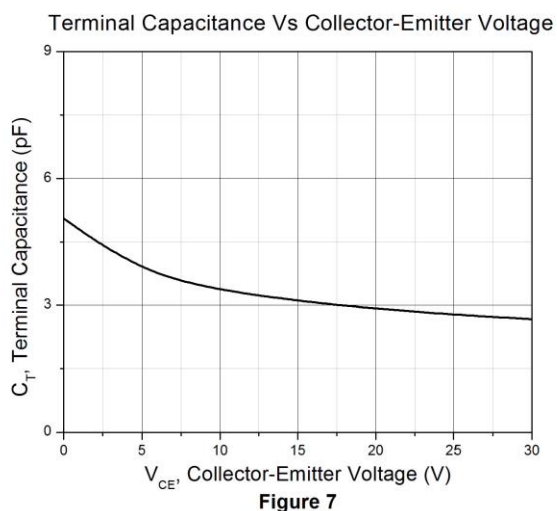


Figure 6



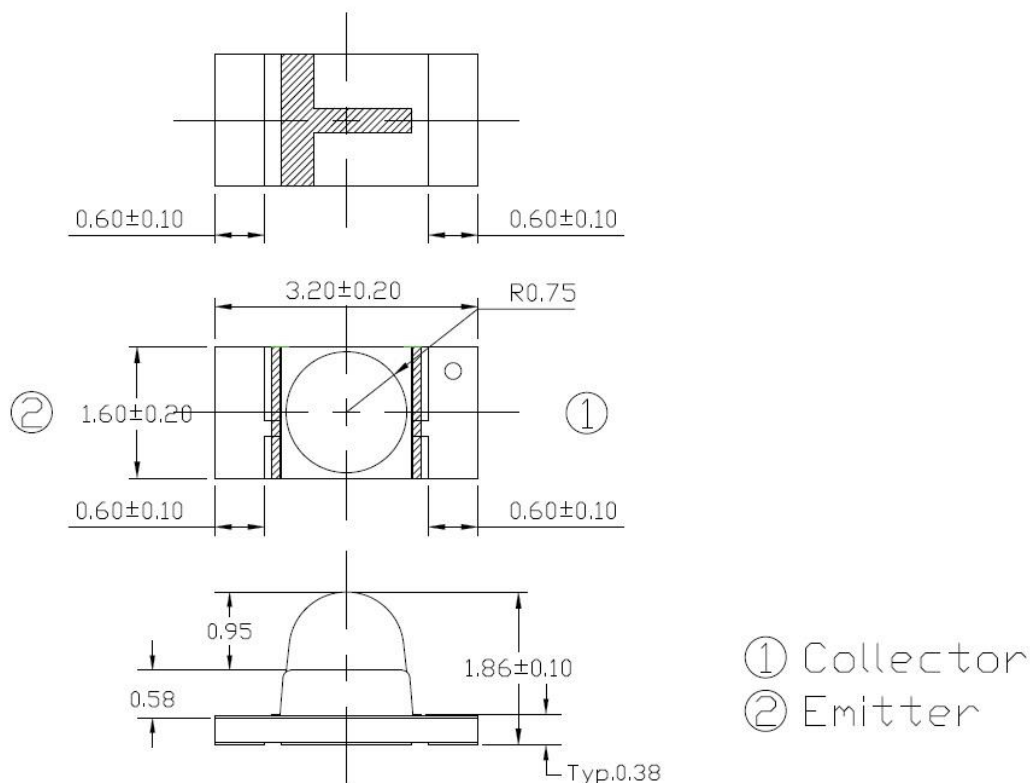
Typical Characteristic Curves



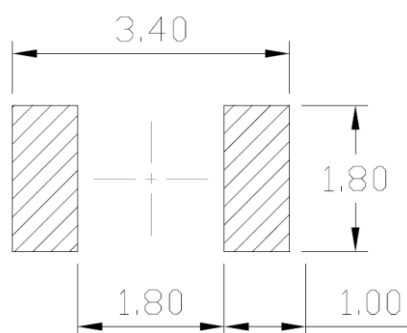


SMD Type Phototransistor with Daylight Filter

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



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



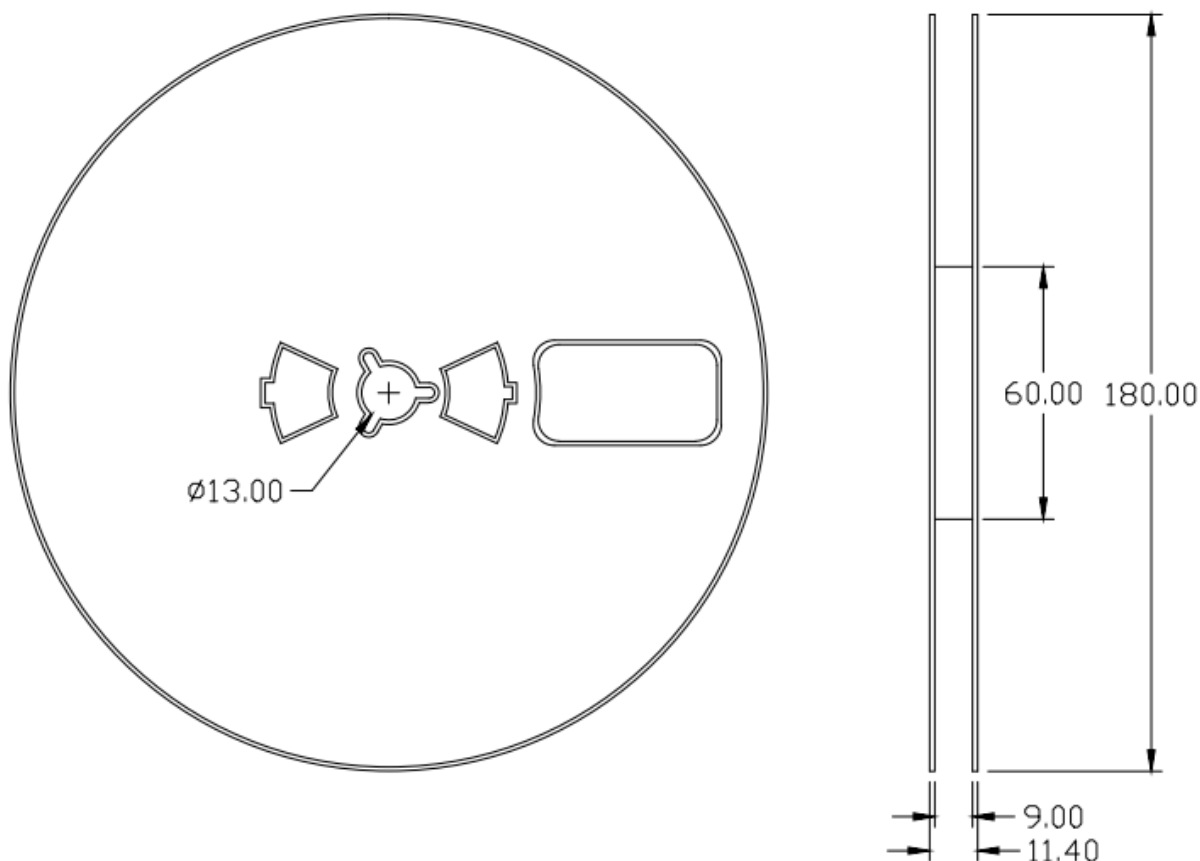
Ordering Information

Part Number	Description	Quantity
PTP83216BT18	Tape & Reel	2000 pcs

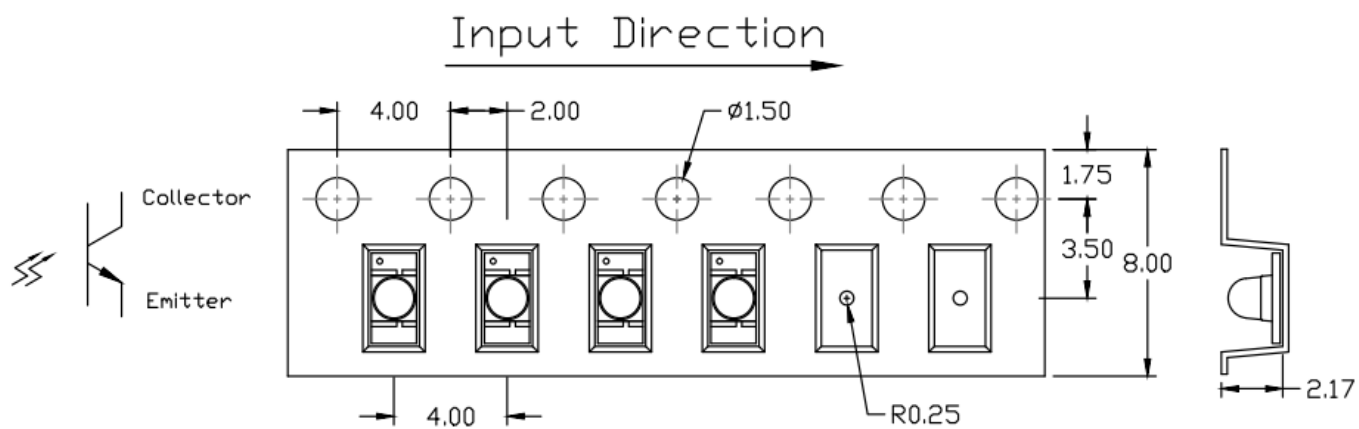


SMD Type Phototransistor with Daylight Filter

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



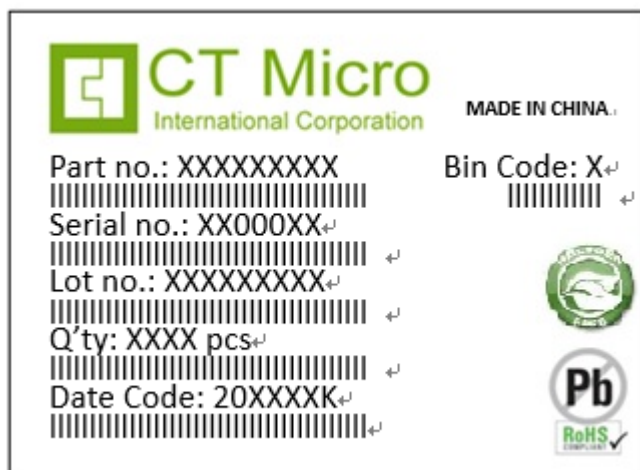
Tape Dimension *All dimensions are in mm, unless otherwise stated*





SMD Type Phototransistor with Daylight Filter

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: Ic Ranks
MADE IN CHINA: Production Place

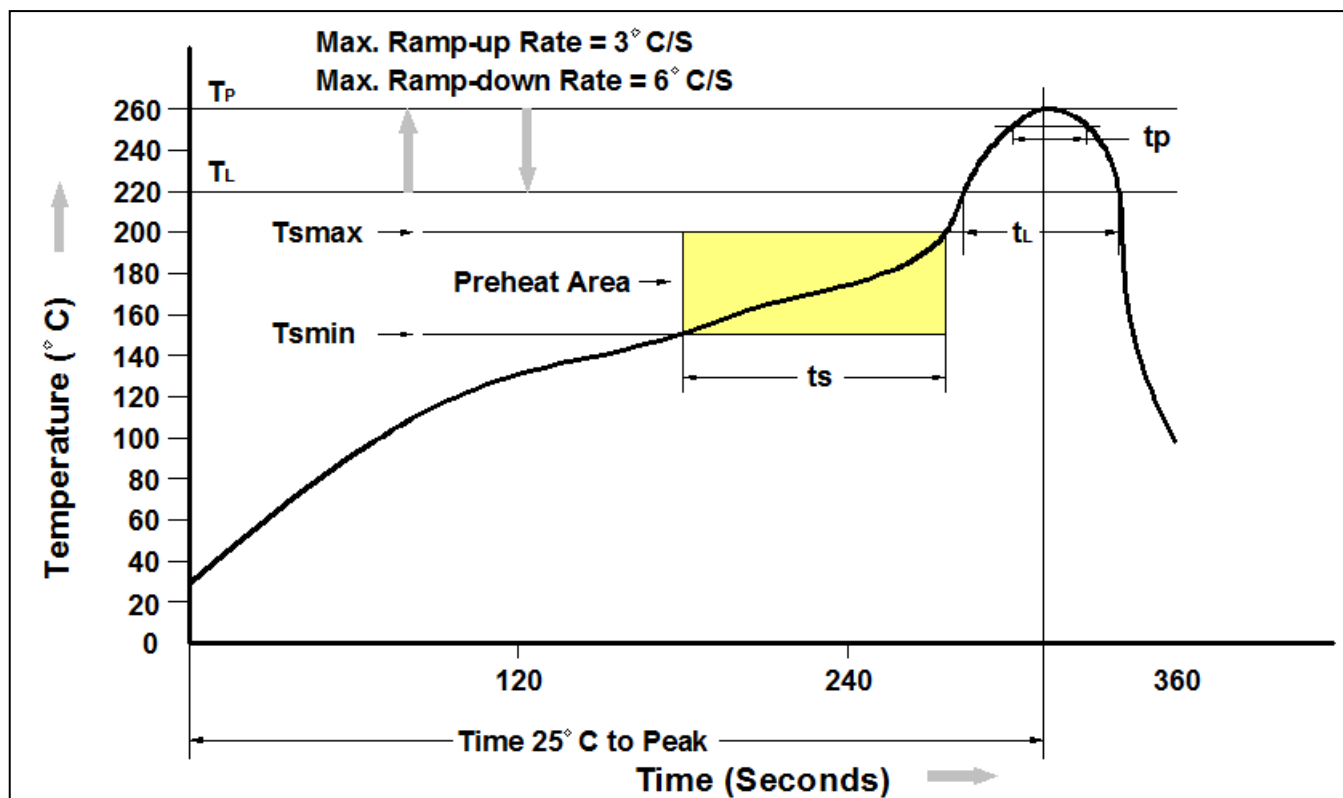
Storage Condition

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.



SMD Type Phototransistor with Daylight Filter

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.



SMD Type Phototransistor with Daylight Filter

DISCLAIMER

CT MICRO RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. CT MICRO DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

CT MICRO ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT EXPRESS WRITTEN APPROVAL OF CT MICRO INTERNATIONAL CORPORATION.

- 1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instruction for use provided in the labelling, can be reasonably expected to result in significant injury to the user.*
- 2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.*

单击下面可查看定价，库存，交付和生命周期等信息

[>>CT-MICRO\(兆龙科技\)](#)