



Features

- Close responsively to the human eye spectrum
- Light to Current, Analog output
- Operating Temperature : -40 °C ~ +85 °C
- Supply Voltage : 2.5 V~ 5.5 V
- Package Size : 1.7mm(L)*0.8mm(W)*0.6mm(H)
- RoHS compliant, Pb Free

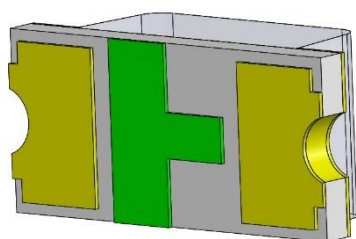
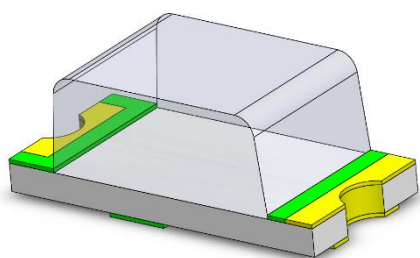
Applications

- TFT LCD TV, plasma TV
- Mobile devices – mobile phones, PDAs
- Toys

Description

The APTP1708T06 is NPN silicon Phototransistor in SMD type. The spectral response of the ambient light sensor is close to human eyes.

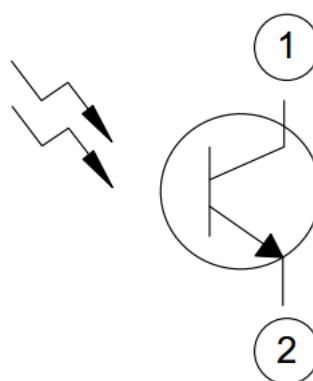
Package Outline



Emitter

Collector

Schematic



① Collector

② Emitter

**Absolute Maximum Rating at 25°C**

Symbol	Parameters	Ratings	Units	Notes
V _{CC}	Supply Voltage	-0.5 ~ 6.0	V	
T _{opr}	Operating Temperature	-40 ~ +85	°C	
T _{stg}	Storage Temperature	-40 ~ +100	°C	
T _{sol}	Soldering Temperature	260 ±10	°C	2

Recommended Operating Conditions at 25°C

Symbol	Parameters	Ratings	Units	Notes
T _{opr}	Operating Temperature	-40 ~ +85	°C	
V _{CC}	Supply Voltage	2.5 ~ 5.5	V	

**Electrical and Optical Characteristics** $T_A = 25^\circ\text{C}$ (unless otherwise specified)

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I_{CEO}	Dark Current	$V_{CE}=10\text{V}$, $E_v=0$ Lux	-	-	100	nA	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$E_v=1000\text{Lux}$ $I_C=2\text{mA}$	-	-	0.4	V	
I_{PH1}	Light Current	$V_{CE}=5\text{V}$, $E_v=100$ Lux	5	15	-	μA	1
I_{PH2}		$V_{CE}=5\text{V}$, $E_v=1000$ Lux	50	150	-	μA	
I_{PH3}		$V_{CE}=5\text{V}$, $E_v=1000$ Lux	140	520	-	μA	2
I_{PH3} / I_{PH2}	Photocurrent Ratio	$V_{CE}=5\text{V}$, $E_v=1000$ Lux	-	3.5	-		
V_O	Saturation Output Voltage	$V_{CC}=5\text{V}$, $E_v=1000$ Lux $R_L=75\text{K}$	4.5	4.6	-	V	2
λ	Spectral Bandwidth	-	390	-	700	nm	
λ_P	Peak Sensitivity	-	-	630	-	nm	
t_r	Rise time	$V_{CC}=5\text{V}$, $R_L=75\text{K}\Omega$	-	0.11	-	ms	
t_f	Fall time		-	0.22	-	ms	

Notes:

1 : White Fluorescent light (Color Temperature = 6500K) is used as light source.

2 : Illuminance by CIE standard illuminant-A / 2856K, incandescent lamp.



Typical Characteristic Curves

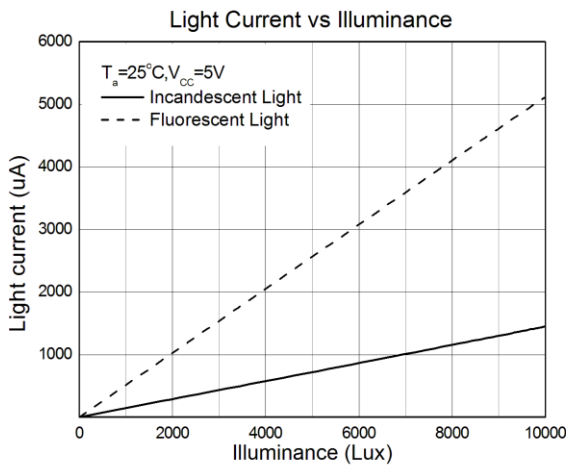


Figure 1

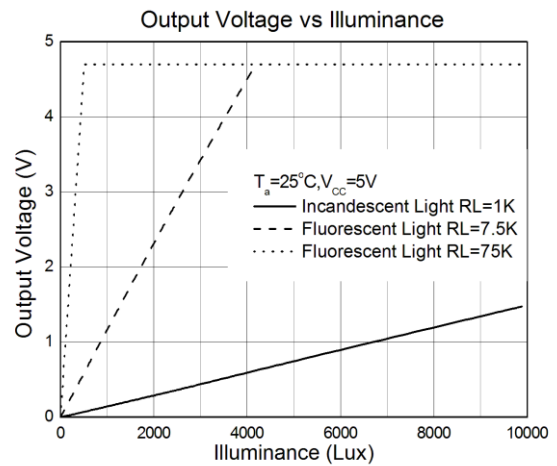


Figure 2

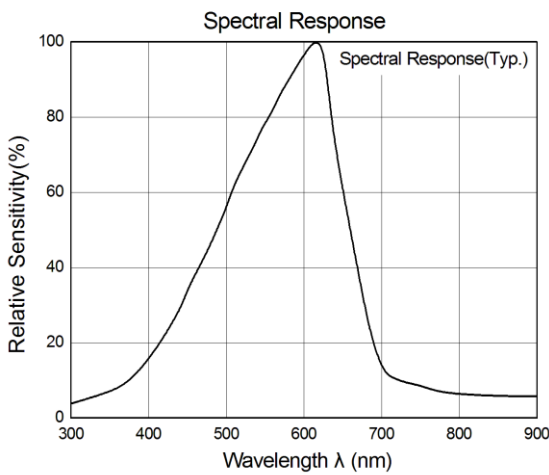


Figure 3

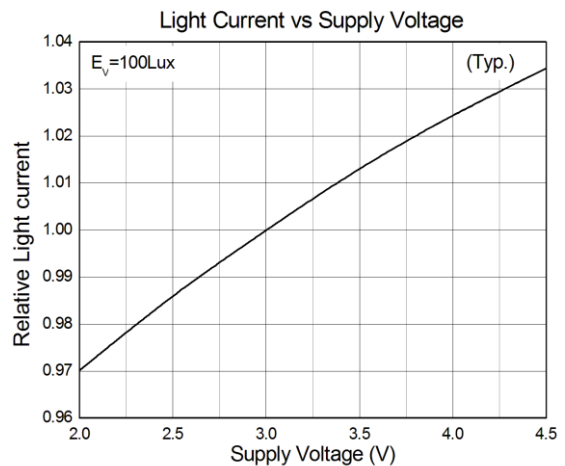


Figure 4

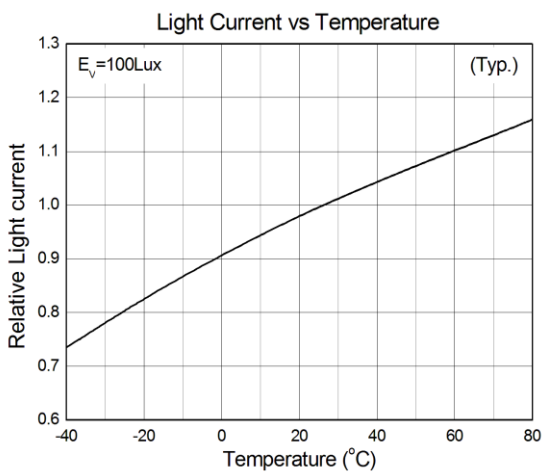


Figure 5

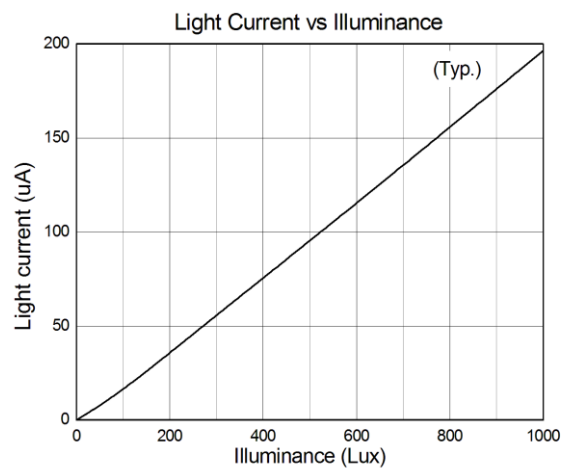
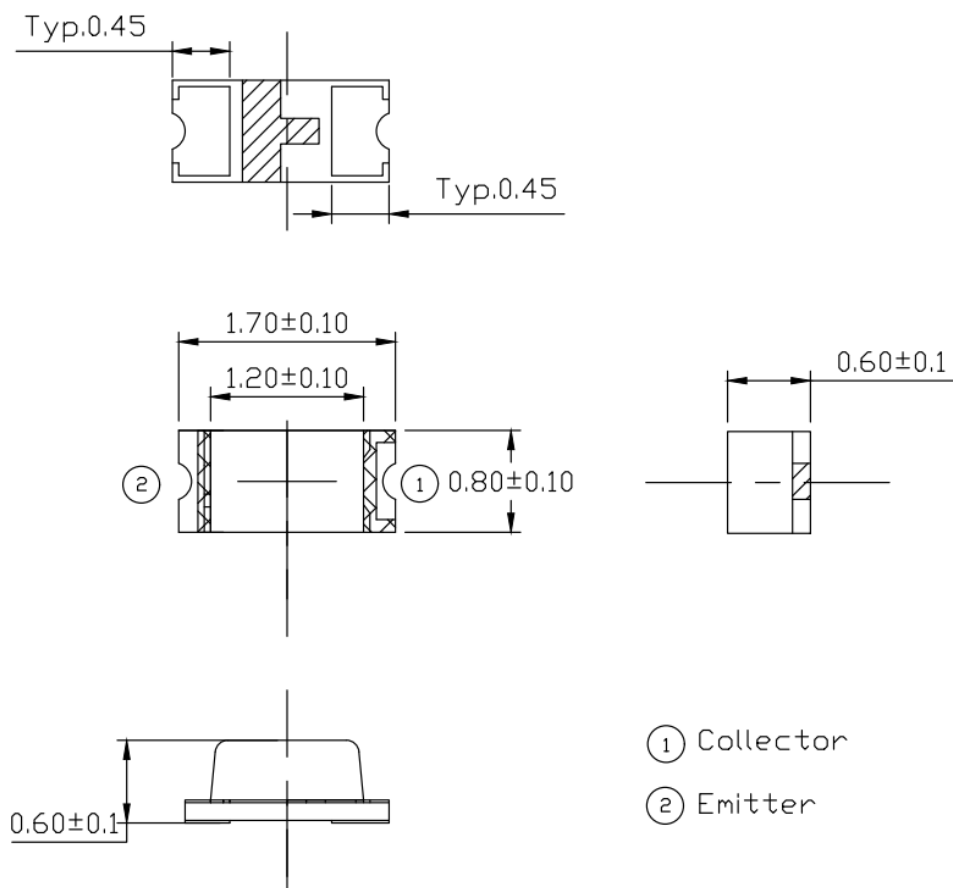


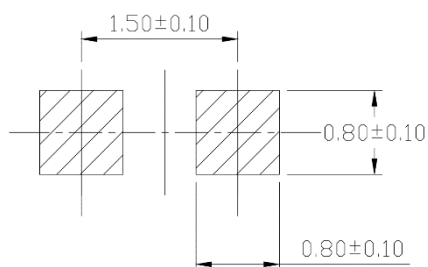
Figure 6



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



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

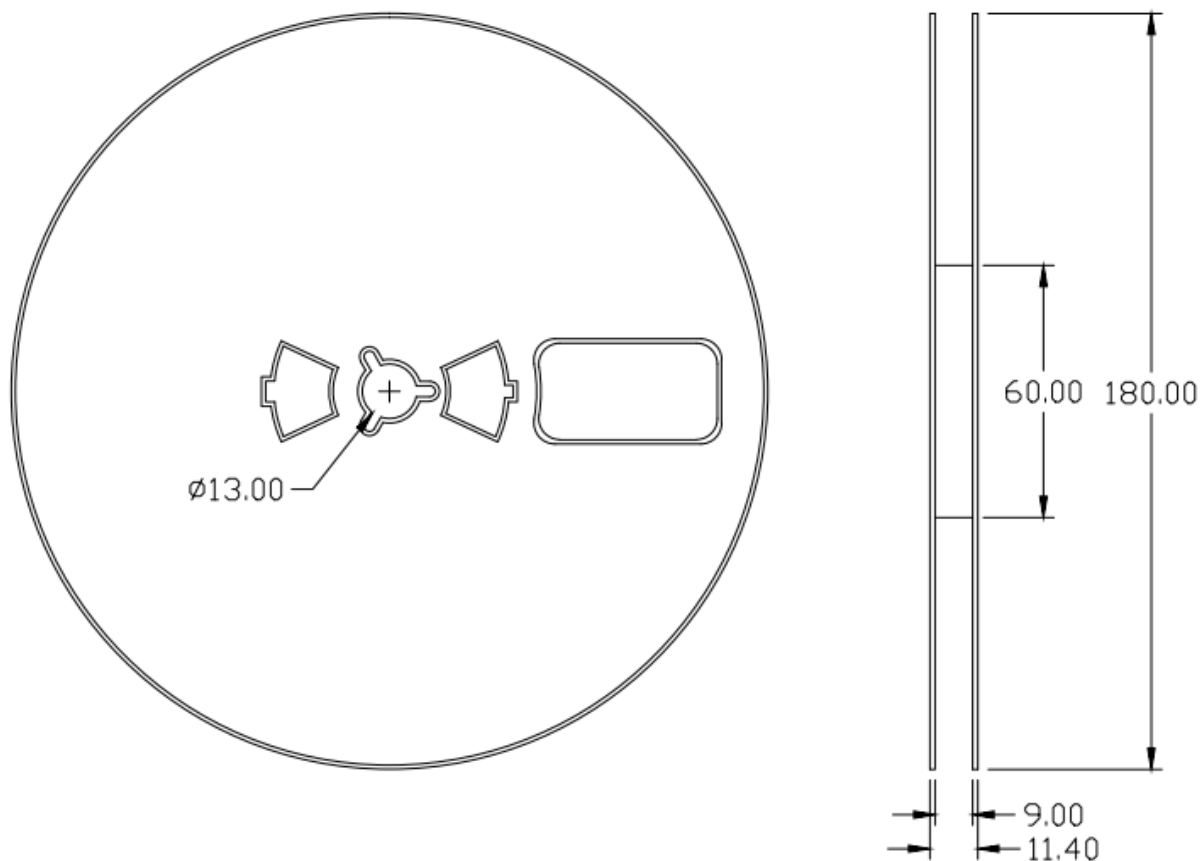


Ordering Information

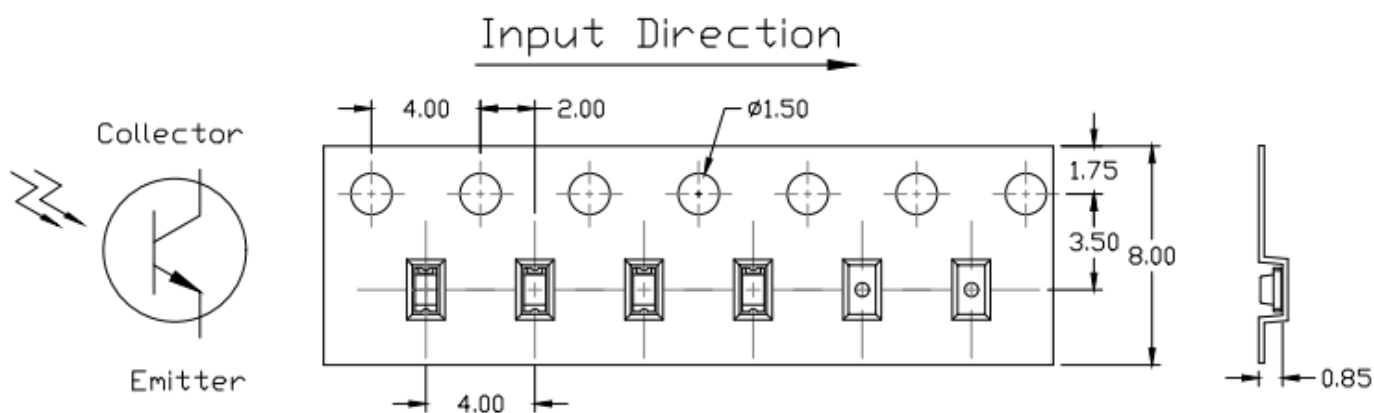
Part Number	Description	Quantity
APTP1708T06	Tape & Reel	4000 pcs



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

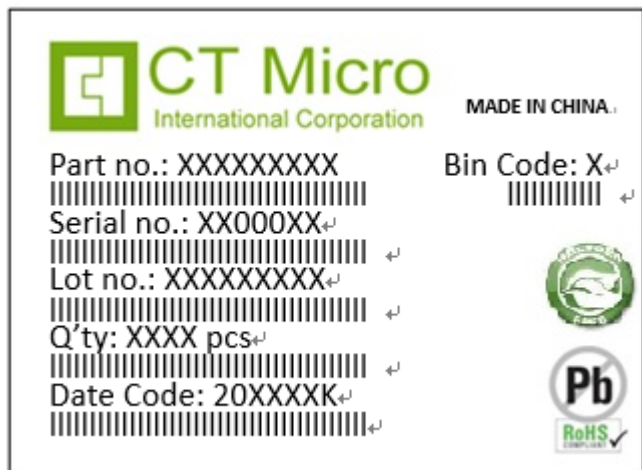


Tape Dimension *All dimensions are in mm, unless otherwise stated*





Label Form Specification



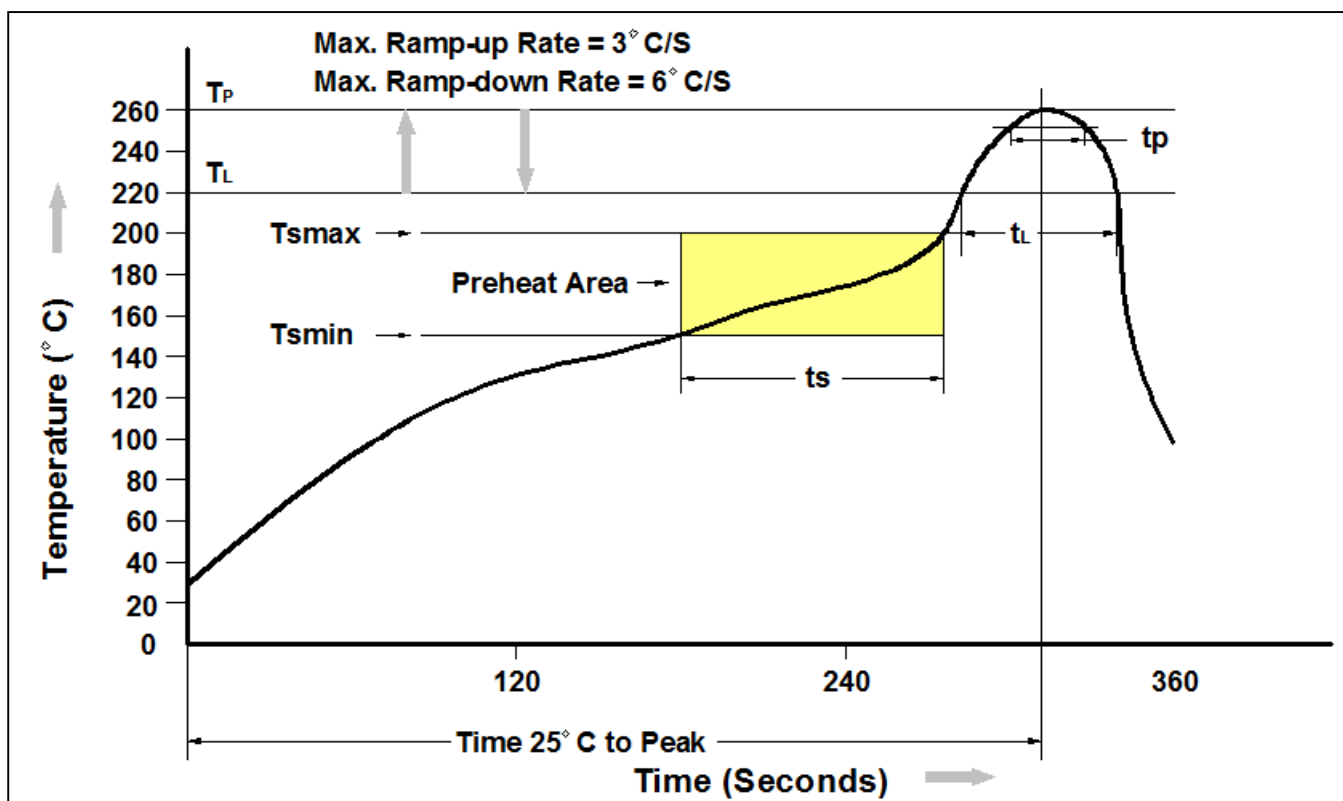
Part no: CTM Production Number
 Serial no: Production Number
 Lot no: Lot number
 Q'ty: Packing Quantity
 Date Code: Manufacture Date
 Bin Code: I_{PH} Ranks
 MADE IN CHINA: Production Place

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.



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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