



3mm Lamp Type Photo Transistor

Features

- High photo sensitivity
- High reliability
- Spectral range of sensitivity: 760-1100nm
- Fast Response time
- RoHS compliance

Applications

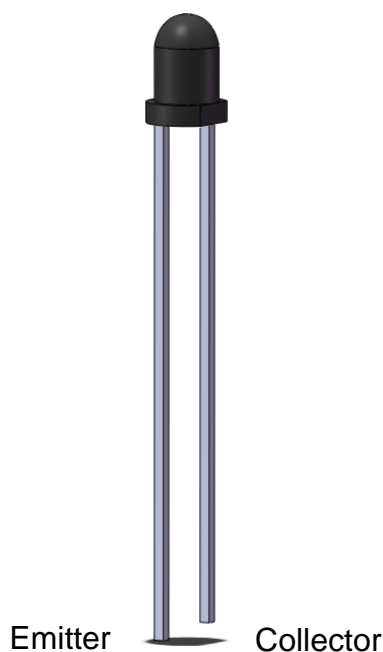
- Infrared sensor
- Optical switches

Description

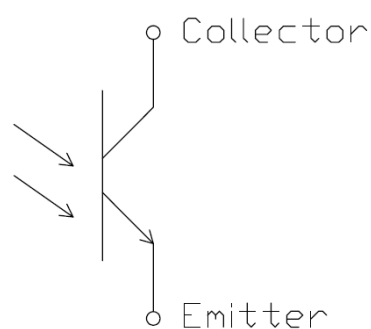
The PT8300BT is silicon NPN Phototransistor.

The device comes with a superior filtering for visible light by utilizing special black epoxy.

Package Outline



Schematic



**Absolute Maximum Rating at 25°C**

Symbol	Parameters	Ratings	Units	Notes
I _C	Collector Current	20	mA	
B _{VCE0}	Collector-Emitter Voltage	35	V	1
B _{VE0}	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	-	760	-	1100	nm	
λ _P	Peak Sensitivity	-	-	880	-	nm	
θ _{1/2}	View Angle	V _{CE} =5V	-	±25	-	deg	

Electrical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I _{CEO}	Dark Current	Ee=0mW /cm ² V _{CE} =20V	-	-	100	nA	
V _{CE(sat)}	Collector-Emitter Saturation Voltage	Ee=1mW /cm ² I _C =0.9mA	-	-	0.4	V	
I _C	Collector Light Current	Ee=1mW /cm ² λ _P =940nm, V _{CE} =5V	0.9	3.0	6.4	mA	4
C _T	Terminal Capacitance	Ee=0mW /cm ² f=1MHz, V _{CE} =5V	-	3.80	-	pF	



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 : $I_C = 100\mu A, E_e = 0mW/cm^2$.

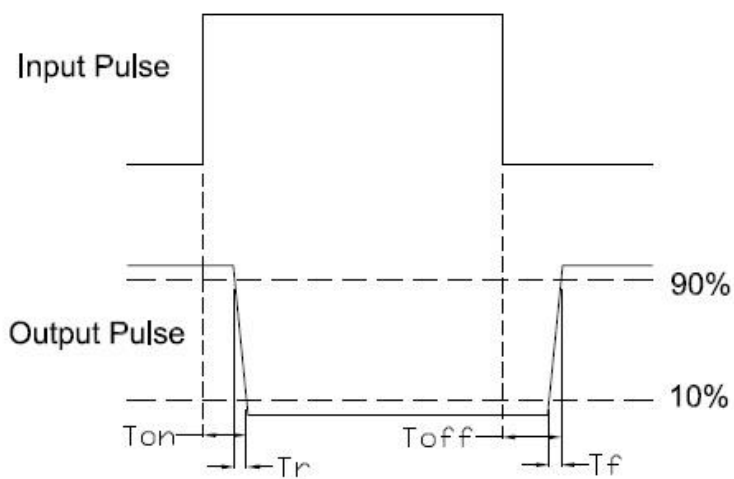
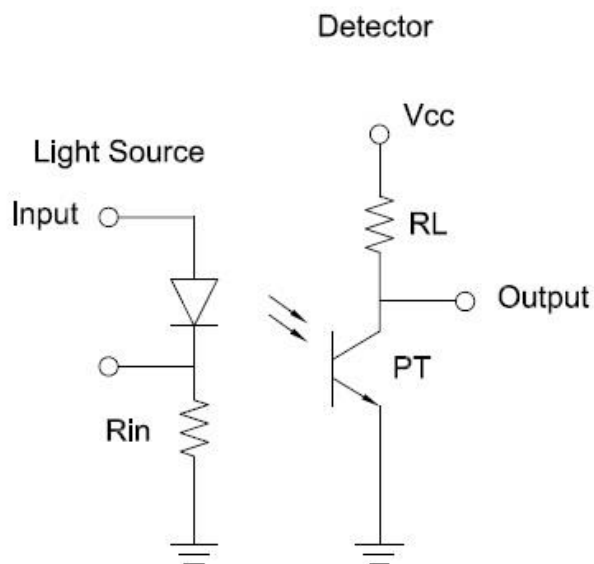
2 : Test conditions : $I_E = 100\mu A, E_e = 0mW/cm^2$.

3 : Soldering time ≤ 5 seconds.

4 : I_C Bin Rank :

Bin Code	T2	T3	T4	T5
Min	0.9	1.4	2	3.2
Max	1.8	2.8	4	6.4

5 : Test circuit :



Switching Time



Typical Characteristic Curves

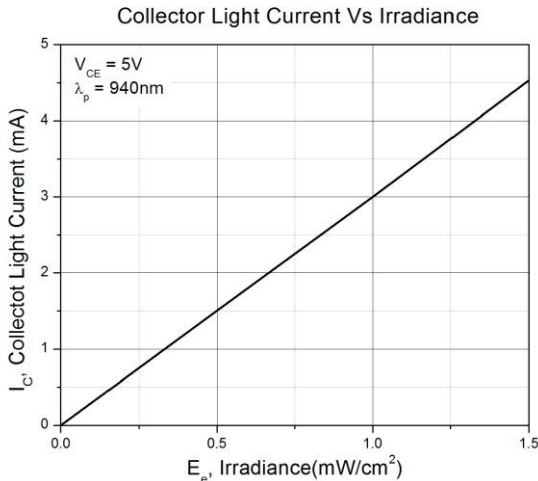


Figure 1

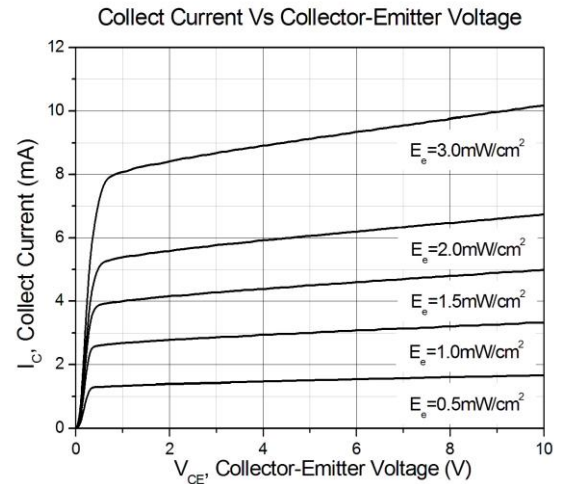


Figure 2

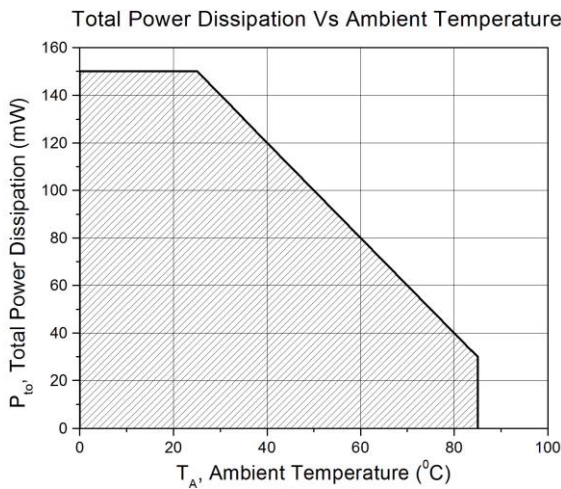


Figure 3

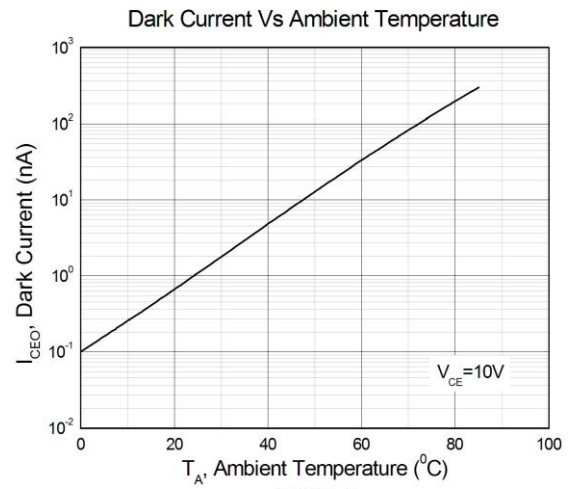


Figure 4

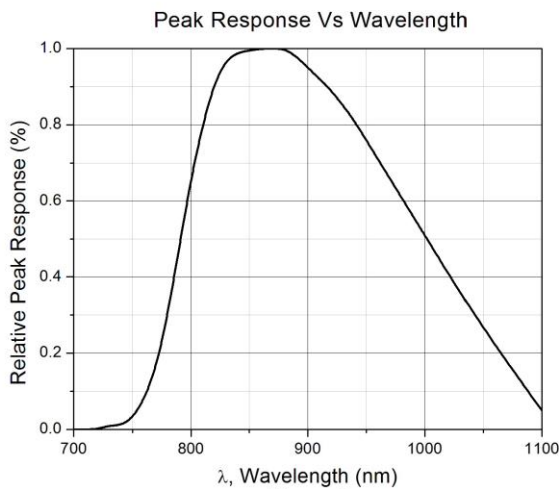


Figure 5

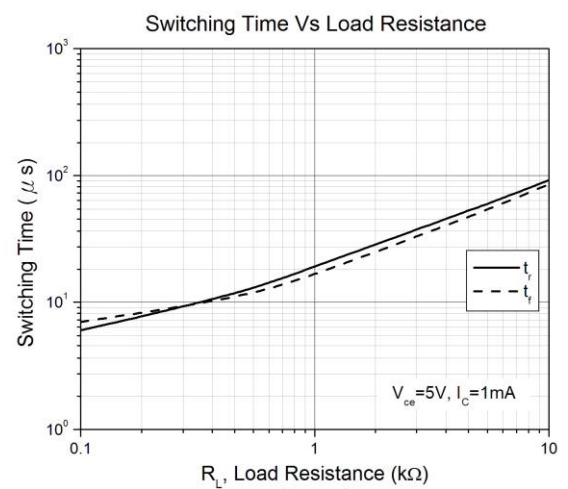
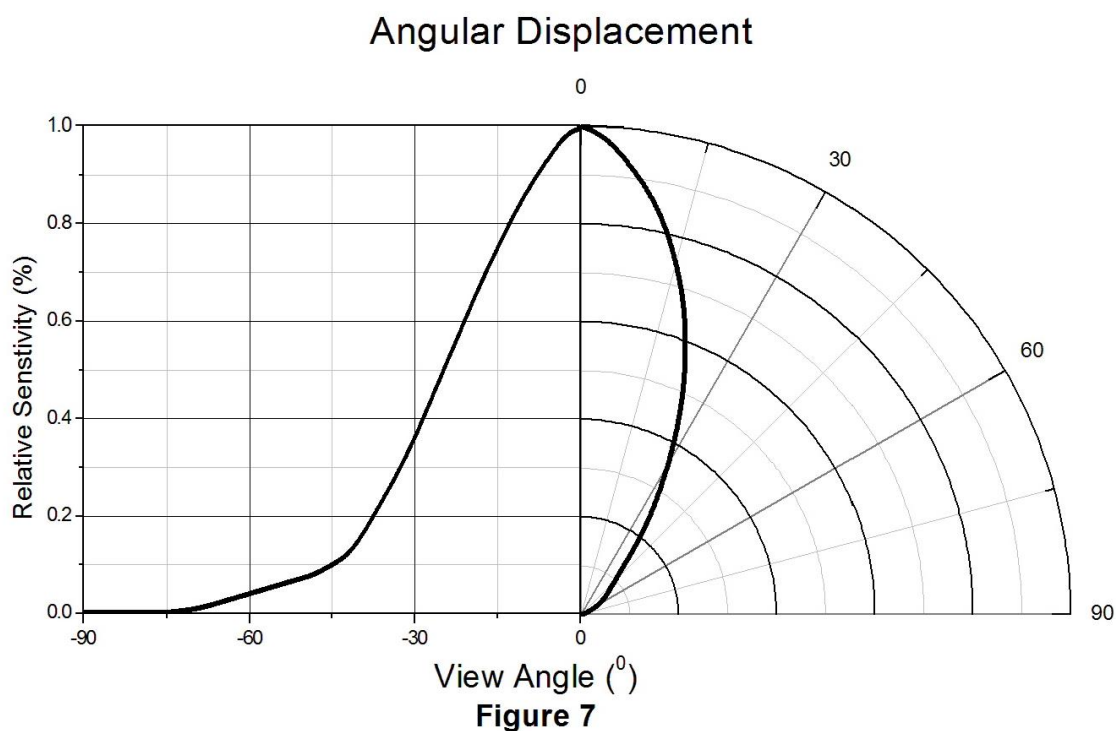


Figure 6



Typical Characteristic Curves

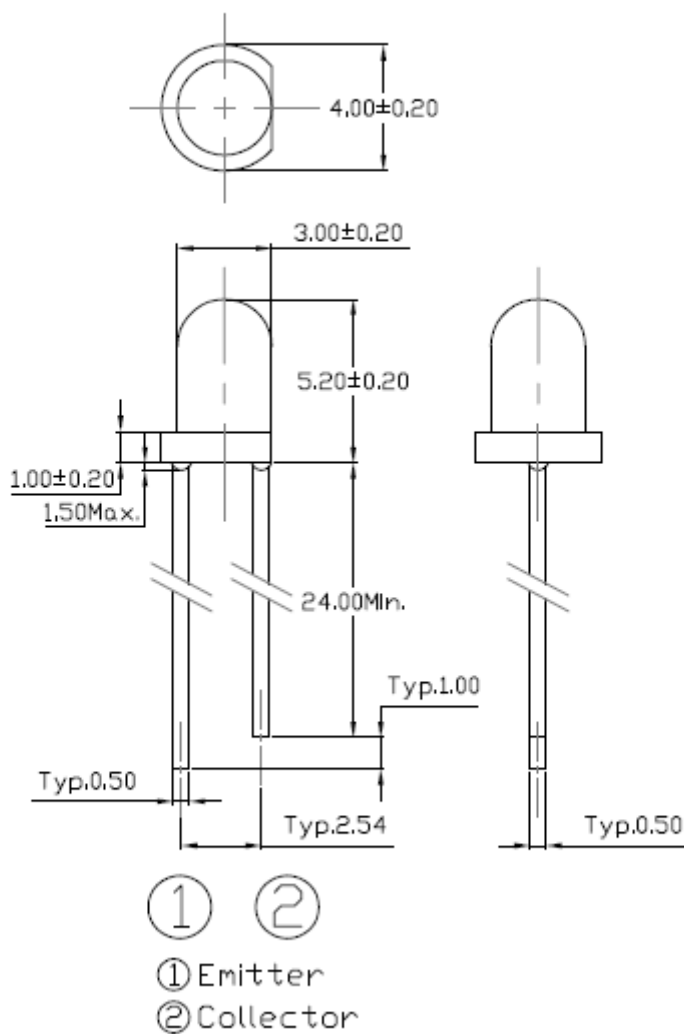




PT8300BT

3mm Lamp Type Photo Transistor

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





PT8300BT

3mm Lamp Type Photo Transistor

Ordering Information

PT8300BT/(XX)(YYY)

XX = TR – Tape & Reel / TB – Tape & Box

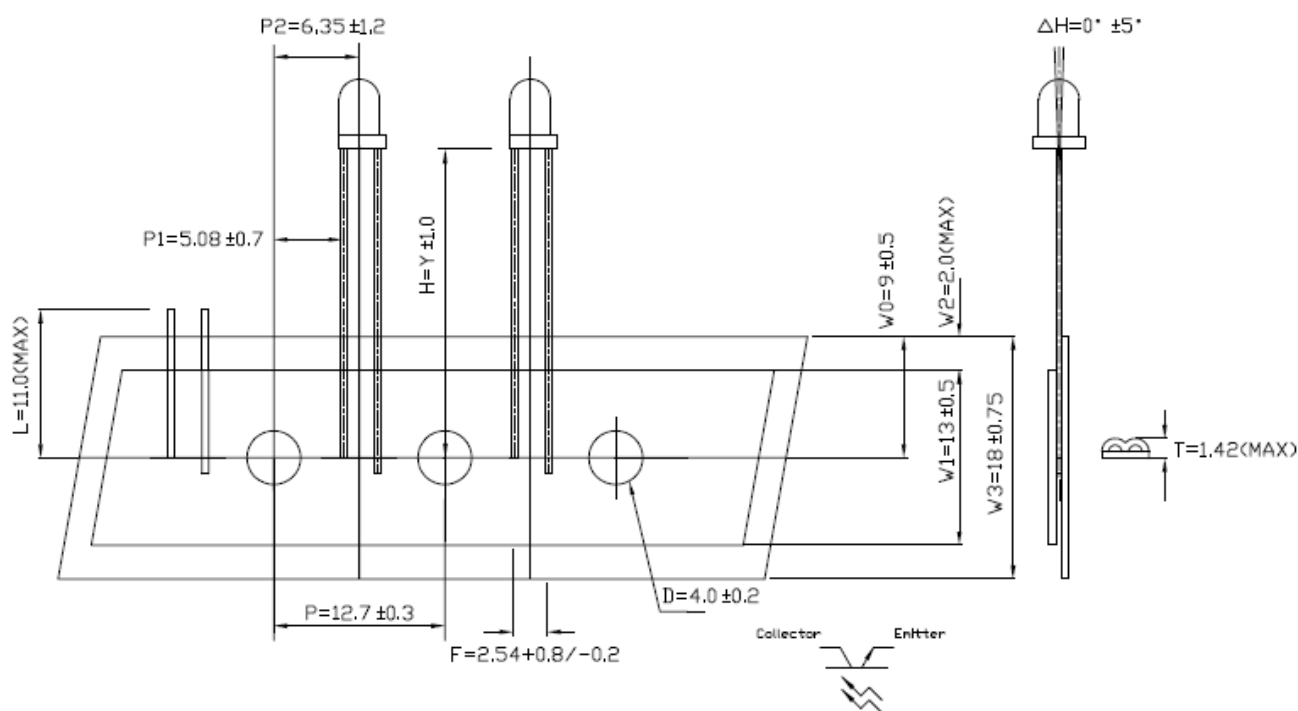
YYY = H; H- Refer to Tape dimension drawing (255 = 25.5mm)

<i>Part Number</i>	<i>Description</i>	<i>Quantity</i>
PT8300BT	1 Bag	500 pcs
	1 Box	10 bag
	1 Carton	8 box
PT8300BT/TR(H) Tape & Reel	1 Reel	1000 pcs
	1 Carton	8 box
PT8300BT/TB(H) Tape & Box	1 Box	2000pcs
	1 Carton	8 box



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

Input Direction →





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