

PT8501BP

5mm 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 PT8501BP 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
lc	Collector Current	20	mA	
B _{VCEO}	Collector-Emitter Voltage	35	V	1
BVECO	Emitter-Collector Voltage	5	V	2
T _{opr}	Operating Temperature	-40 ~ +85	οC	
T _{stg}	Storage Temperature	-40 ~ +100	οC	
T _{sol}	Soldering Temperature	260	οC	3
P _{to}	Total Power Dissipation	150	mW	



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Optical Characteristics

Symbol	Parameters	Test Conditions	Min	Тур	Max	Units	Notes
λ	Spectral Bandwidth	-	760	-	1100	nm	
λP	Peak Sensitivity	-	-	880	-	nm	
θ1/2	View Angle	V _{CE} =5V	-	±12.5	-	deg	

Electrical Characteristics

Symbol	Parameters	Test Conditions	Min	Тур	Max	Units	Notes
Iceo	Dark Current	Ee=0mW /cm ²	-	-	100	nA	
		V _{CE} =20V					
V _{CE(sat)}	Collector-Emitter	Ee=1mW /cm ²	-	-	0.4	V	
	Saturation Voltage	I _C =1.25mA					
lc	Collector Light Current	Ee=1mW /cm ²	1.25	3.0	-	mA	
		λρ =940nm , V _{CE} =5V					
Ст	Total Capacitance	Ee=0mW /cm ²	-	7.89	-	pF	
		f=1MHz ,V _{CE} =5V					

Switching Characteristics

Symbol	Parameters	Test Conditions	Min	Тур	Max	Units	Notes
tr	Rise Time	$V_{CE} = 5V, R_L = 1k\Omega$	-	15	-		4
t _f	Fall Time	Ic=1mA	-	15	-	μs	4

Notes:

- 1 : Test conditions : $I_C\text{=}100\mu\text{A},\,\text{Ee}\text{=}0\text{mW/cm}^2$
- 2 : Test conditions : I_E =100µA, Ee=0mW/cm².
- 3 : Soldering time \leq 5 seconds.
- 4 : Test circuit





Typical Characteristic Curves





Typical Characteristic Curves





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





Ordering Information

PT8501BP/(XX)(YYY)

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

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

Part Number	Description	Quantity
	1 Bag	500 pcs
FIOUIDF	1 Box	5 bag
	1 Reel	1000 pcs
	1 Box	2 reel
Tape & Reel	1 Carton	5 box
PT8501BP/TB(H)	1 Box	2000pcs
Tape & Box	1 Carton	10 box



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





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