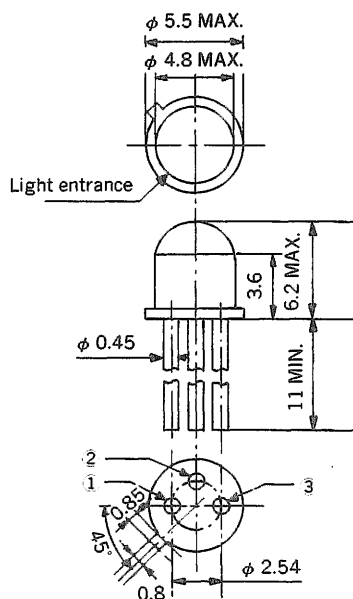


## NPN EPITAXIAL TYPE SILICON PHOTO TRANSISTOR

### PACKAGE DIMENSIONS (Unit: mm)



1. Emitter
2. Base
3. Collector

### Precautions for handling:

1. When the device is soldered, each lead should be soldered with a length of 1.5 mm or more, at a temperature of 260 °C or less, in a soldering time of 5 sec. or less.

PT8L is an NPN epitaxial type silicon transistor using TO-18 metal stem and glass lens.

Since this device has high mechanical strength and high environmental resistance, it can be used as a high reliability light receiving device.

### FEATURES

- High response speed
- Wide range of operating temperature
- Good linearity between light input and electric output
- Good conformity of peak value of light receiving sensitivity with the spectrum of infrared ray emitting device (SE301A)

### QUALITY GRADE

Standard

Please refer to "Quality grade on NEC Semiconductor Devices" (Document number IEI-1209) published by NEC Corporation to know the specification of quality grade on the devices and its recommended applications.

### APPLICATIONS

- Various photoelectric switches
- Light receiving blocks of photocouplers and photo interrupters
- Optical choppers

**ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )**

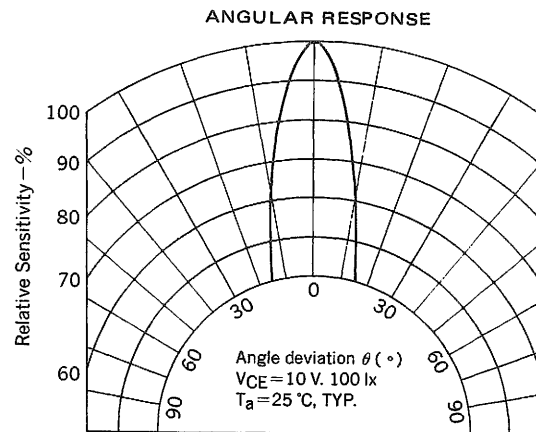
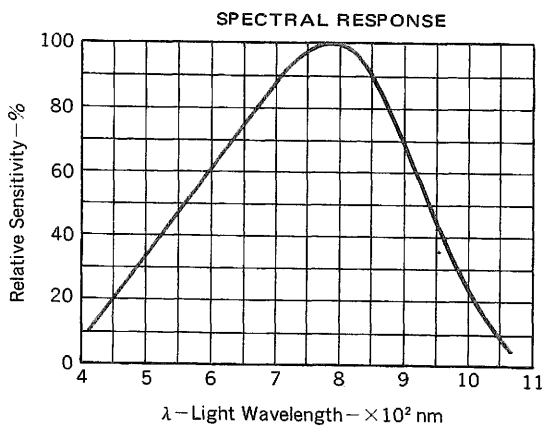
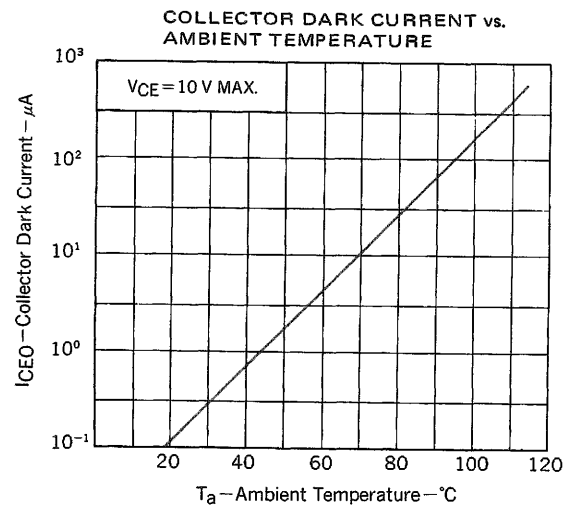
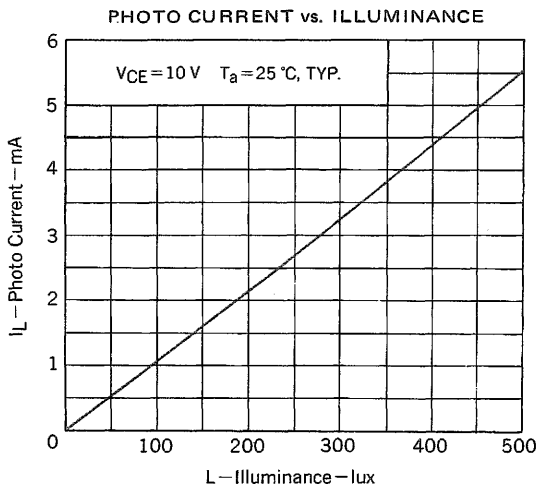
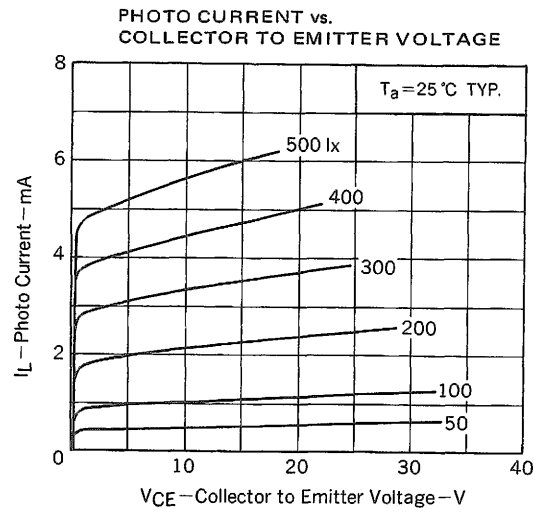
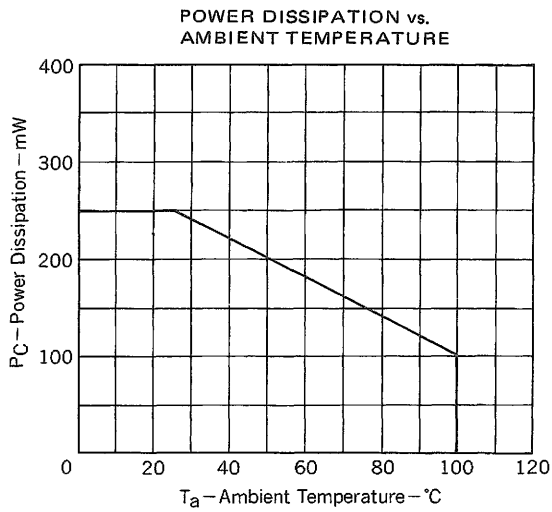
Collector to Emitter Voltage	$V_{CE0}$	30	V
Collector to Base Voltage	$V_{CB0}$	30	V
Emitter to Base Voltage	$V_{EB0}$	5	V
Collector Current	$I_C$	30	mA
Power Dissipation	$P_C$	250	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Operating Temperature	$T_{opt}$	-20 to +100	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 to +150	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )**

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Dark Current	$I_{CE01}$			200	nA	$V_{CE} = 10\text{ V}, L = 0\text{ lx}$
Collector Dark Current	$I_{CE02}$			200	$\mu\text{A}$	$T_a = 100^\circ\text{C}, V_{CE} = 10\text{ V}, L = 0\text{ lx}$
Photo Current	$I_L$	250			$\mu\text{A}$	$V_{CE} = 10\text{ V}, L^* = 200\text{ lx}$
Collector Saturation Voltage	$V_{CE(sat)}$			0.3	V	$I_C = 0.1\text{ mA}, L^* = 500\text{ lx}$
Rise Time	$t_r$		5		$\mu\text{s}$	$V_{CC} = 10\text{ V}, I_C = 2\text{ mA}, R_L = 100\ \Omega$
Fall Time	$t_f$		5		$\mu\text{s}$	$V_{CC} = 10\text{ V}, I_C = 2\text{ mA}, R_L = 100\ \Omega$
DC Current Amplification Factor	$h_{FE}$	50				$V_{CE} = 5\text{ V}, I_C = 4\text{ mA}$

\* Light source color temperature = 2 854 K

TYPICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )



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Application examples recomended by NEC Corporation

Standard: Data processing and office equipment, Communication equipment (terminal, mobile). Test and Measurement equipment, Audio and Video equipment, Other consumer products, etc.

Special: Automotive and Transportation equipment, Communication equipment (trunk line), Train and Traffic control devices, industrial robots, Burning control systems, antidisaster systems, anticrime systems etc.