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PT550/PT550F

TO-18 Type Phototransistor with Base Terminal

■ Features

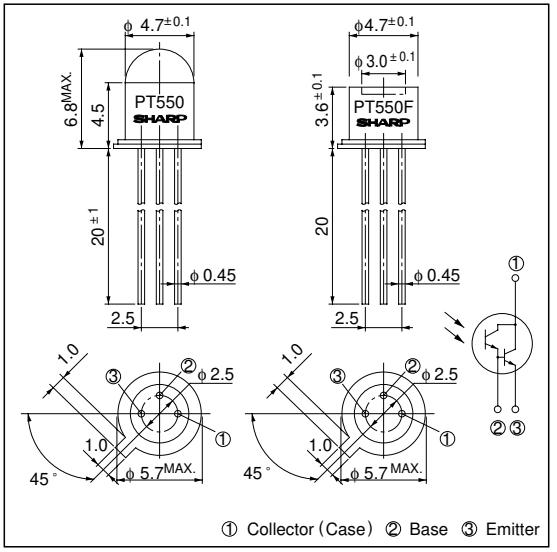
1. High sensitivity
   (**PT550** I_C : MIN.3mA at $E_e = 0.1mW/cm^2$
   PT550F I_C : MIN.3mA at $E_e = 1mW/cm^2$)
2. Narrow acceptance : **PT550**
   ($\Delta\theta$: TYP. ± 6°)
   Wide acceptance : **PT550F**
   ($\Delta\theta$: TYP. ± 50°)
3. TO - 18 type standard package

■ Applications

1. Optoelectronic switches, optoelectronic counters
2. Smoke detectors
3. Infrared applied systems

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	Rating	Unit
Collector-emitter voltage	V_{CEO}	35	V
Emitter-collector voltage	V_{ECO}	6	V
Collector-base voltage	V_{CBO}	35	V
Collector current	I_C	100	mA
Collector power dissipation	P_C	150	mW
Operating temperature	T_{opr}	- 25 to + 125	°C
Storage temperature	T_{stg}	- 55 to + 150	°C
*1 Soldering temperature	T_{sol}	260	°C

*1 For 10 seconds at the position of 1.3mm from the bottom face of can package

■ Electro-optical Characteristics

(Ta = 25°C)

Parameter		Symbol	Conditions		MIN.	TYP.	MAX.		Unit
			PT550	**PT550F**					
*2Collector current		I_C	V_{CE} = 5V, E_e = 0.1mW/cm²	V_{CE} = 5V, E_e = 1mW/cm²	3	20	**PT550**	142	mA
							PT550F	150	
Collector dark current		I_{CEO}	V_{CE} = 10V, E_e = 0, I_B = 0		-	10^{-7}	10^{-6}		A
Collecter-emitter saturation voltage		$V_{CE(sat)}$	I_C = 1mA, I_B = 0, E_e = 0.1mW/cm²	I_C = 1mA, I_B = 0, E_e = 1mW/cm²	-	-	1.0		V
Peak sensitivity wavelength		λ_P	-		-	800	-		nm
Response time	Rise time	t_r	V_{CC} = 15V, I_C = 1mA, R_L = 1kΩ		-	350	-		μs
	Fall time	t_f			-	300	-		μs

*2 E_e : Irradiance by CIE standard light source A (tungsten lamp)

Fig. 1 Collector Power Dissipation vs. Ambient Temperature

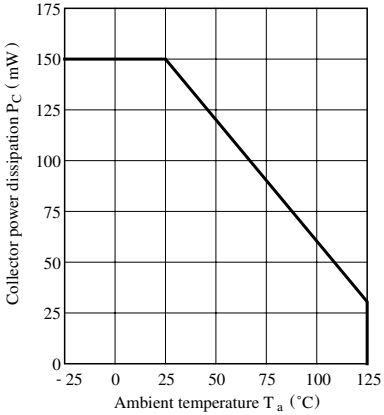


Fig. 2 Collector Dark Current vs. Ambient Temperature

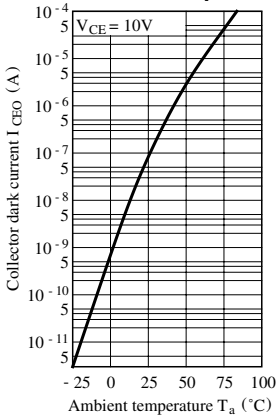


Fig. 3 Relative Collector Current vs. Ambient Temperature

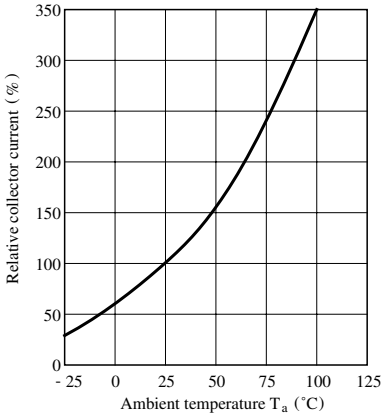


Fig.4-a Collector Current vs. Irradiance (PT550)

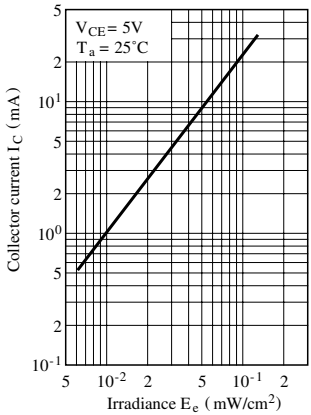


Fig.4-b Collector Current vs. Irradiance (PT550F)

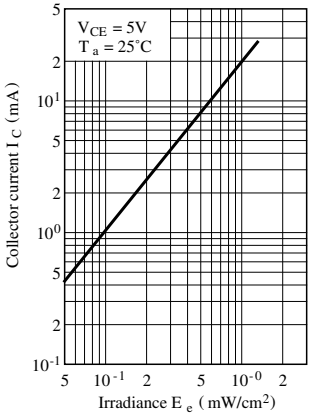


Fig.5-a Collector Current vs. Collector-emitter Voltage (PT550)

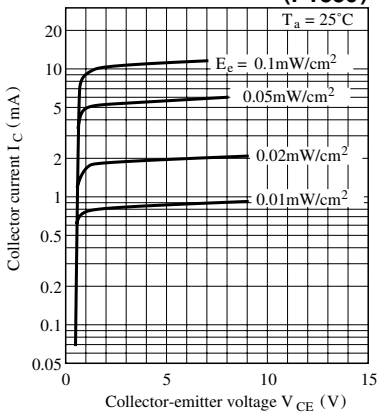


Fig.5-b Collector Current vs. Collector-emitter Voltage (PT550F)

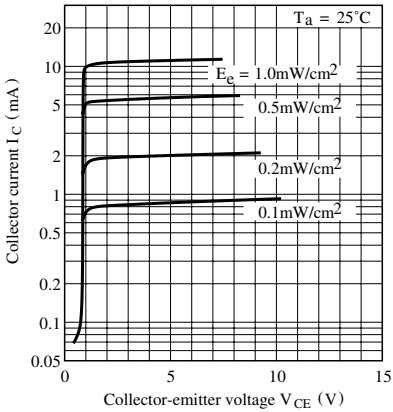


Fig. 6 Spectral Sensitivity

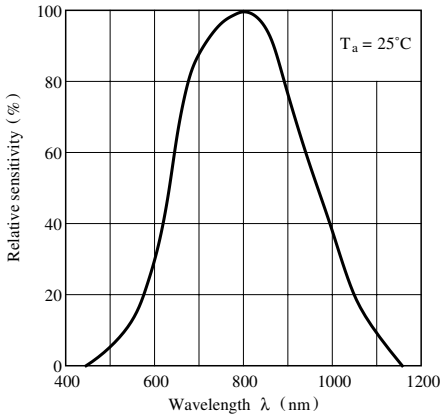
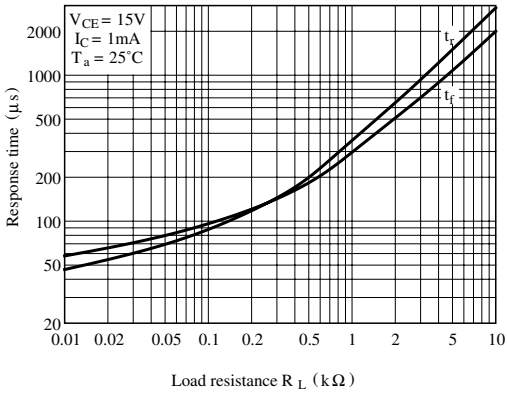


Fig. 7 Response Time vs. Load Resistance



Test Circuit for Response Time

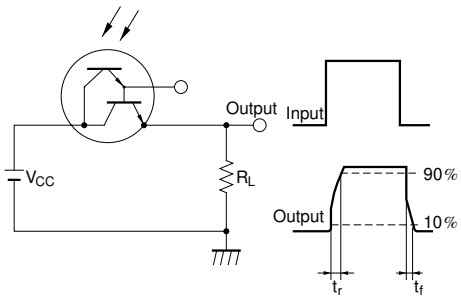


Fig.8-a Sensitivity Diagram (PT550) (T_a = 25°C)

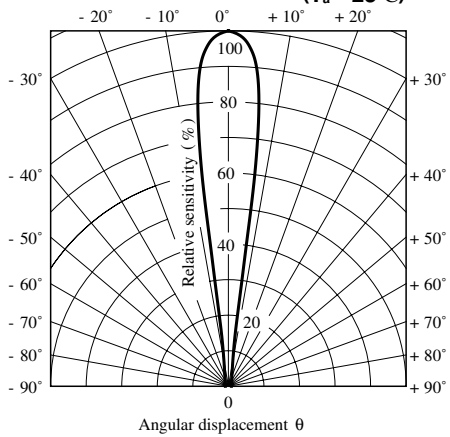


Fig.8-b Sensitivity Diagram (PT550F) (T_a = 25°C)

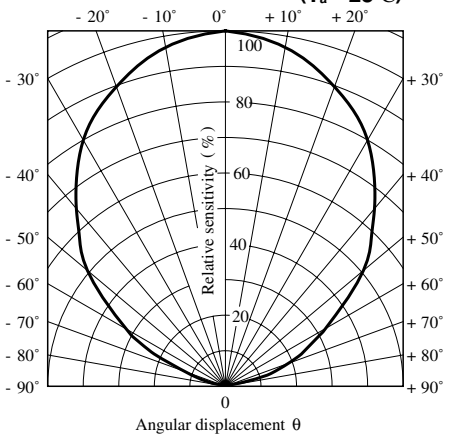


Fig.9-a Collector-emitter Saturation Voltage vs. Irradiance (PT550)

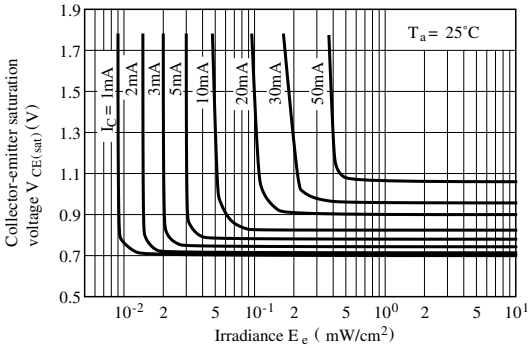
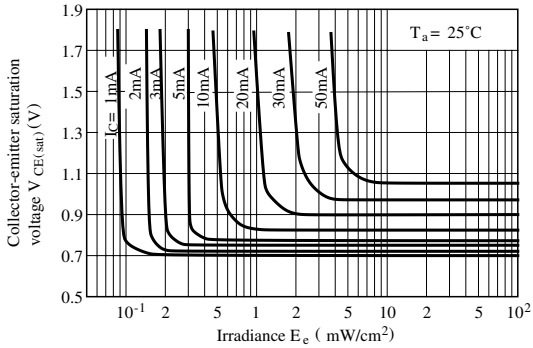


Fig.9-b Collector-emitter Saturation Voltage vs. Irradiance (PT550F)



● Please refer to the chapter "Precautions for Use."

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