

PT480F Datasheet




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DiGi Electronics Part Number	PT480F-DG
Manufacturer	Sharp Microelectronics
Manufacturer Product Number	PT480F
Description	SENSOR PHOTO 860NM SIDE VIEW RAD
Detailed Description	Phototransistors 860nm Side View Radial

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Manufacturer Product Number:

PT480F

Series:

-

Voltage - Collector Emitter Breakdown (Max):

35 V

Current - Dark (I_d) (Max):

100 nA

Viewing Angle:

70°

Mounting Type:

Through Hole

Operating Temperature:

-25°C ~ 85°C (TA)

Manufacturer:

Sharp Microelectronics

Product Status:

Obsolete

Current - Collector (I_c) (Max):

20 mA

Wavelength:

860nm

Power - Max:

75 mW

Orientation:

Side View

Package / Case:

Radial

Environmental & Export classification

RoHS Status:

RoHS non-compliant

ECCN:

EAR99

Moisture Sensitivity Level (MSL):

1 (Unlimited)

HTSUS:

8541.49.7080

PT480/PT480F

Narrow Acceptance Phototransistor

■ Features

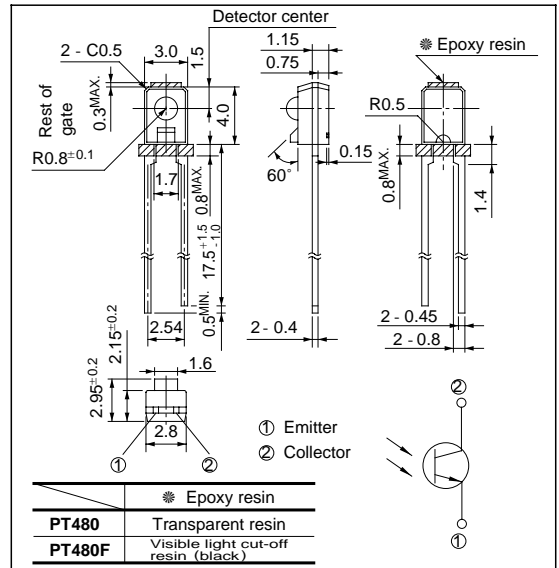
1. Epoxy resin package
2. Narrow acceptance ($\Delta\theta$: TYP. $\pm 13^\circ$)
3. Visible light cut-off type : **PT480F**

■ Applications

1. VCRs, cassette tape recorders
2. Floppy disk drives
3. Optoelectronic switches
4. Automatic stroboscopes

■ 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 current	I _C	20	mA
Collector power dissipation	P _C	75	mW
Operating temperature	T _{opr}	- 25 to +85	°C
Storage temperature	T _{stg}	- 40 to +85	°C
*1 Soldering temperature	T _{sol}	260	°C

*1 For 5 seconds at the position of 1.4mm from the bottom face of resin package

■ Electro-optical Characteristics

(Ta = 25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*2 Collector current	I _C	V _{CE} = 5V	0.4	1.7	6.0	mA
		E _e = 1mW/cm ²	0.25	0.8	3.0	mA
Collector dark current	I _{CEO}	V _{CE} = 20V, E _e = 0	-	10 ⁻⁹	10 ⁻⁷	A
*2 Collector-emitter saturation voltage	V _{CE(sat)}	I _C = 0.5mA, E _e = 10mW/cm ²	-	0.1	0.4	V
Peak sensitivity wavelength	λ _P	-	-	800	-	nm
			-	860	-	nm
Response time	Rise time	V _{CE} = 2V, I _C = 2mA	-	3	-	μs
	Fall time	R _L = 100Ω	-	3.5	-	μs

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

Fig. 1 Collector Power Dissipation vs. Ambient Temperature

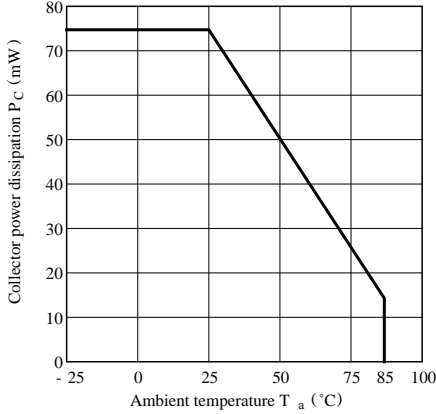


Fig. 2 Collector Dark Current vs. Ambient Temperature

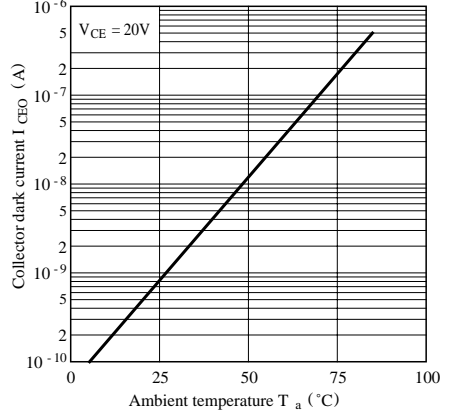


Fig. 3 Relative Collector Current vs. Ambient Temperature

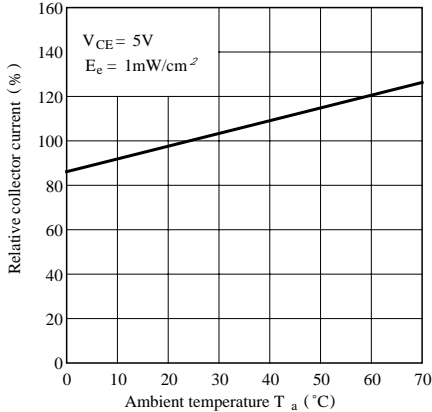


Fig.4-a Collector Current vs. Irradiance (PT480)

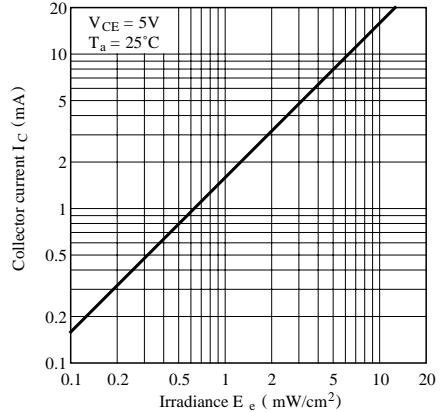


Fig.4-b Collector Current vs. Irradiance (PT480F)

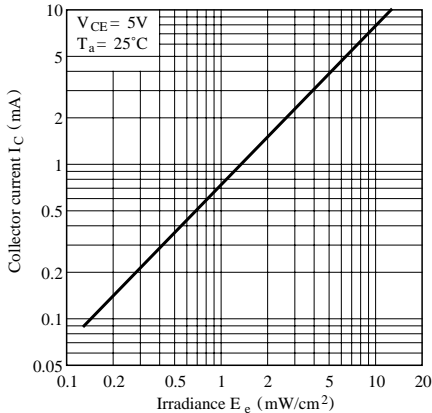


Fig.5-a Collector Current vs. Collector-emitter Voltage (PT480)

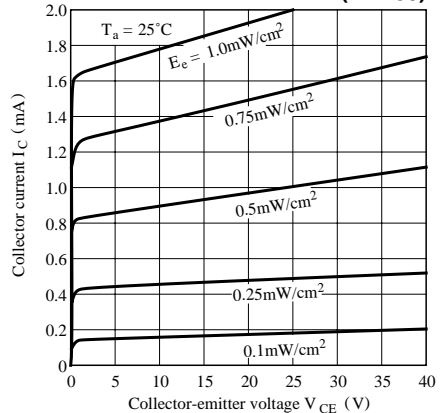


Fig.5-b Collector Current vs. Collector-emitter Voltage (PT480F)

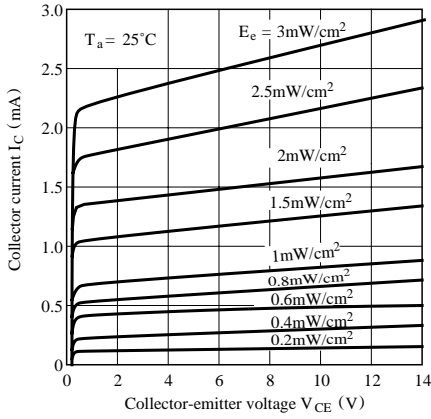


Fig. 6 Spectral Sensitivity

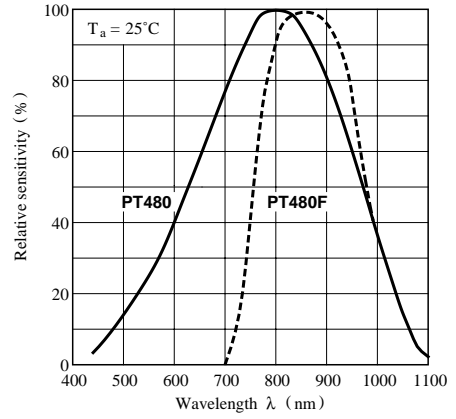
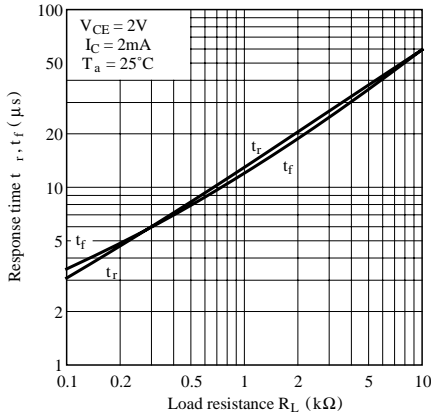


Fig. 7 Response Time vs. Load Resistance



Test Circuit for Response Time

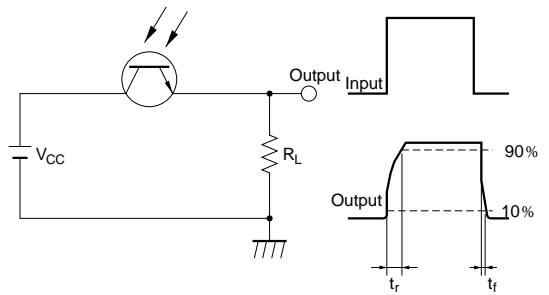


Fig. 8 Sensitivity Diagram (T_a = 25°C)

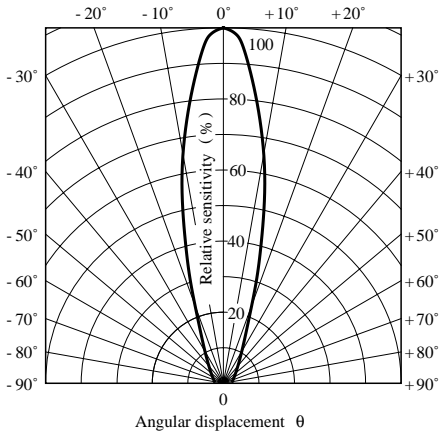


Fig.9-a Collector-emitter Saturation Voltage vs. Irradiance (PT480)

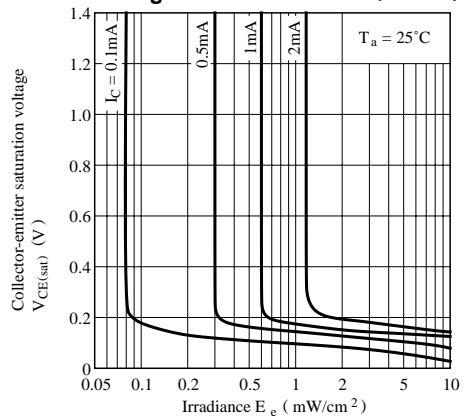


Fig.9-b Collector-emitter Saturation Voltage vs. Irradiance (PT480F)

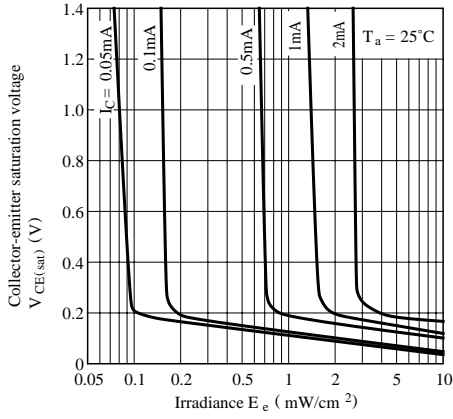
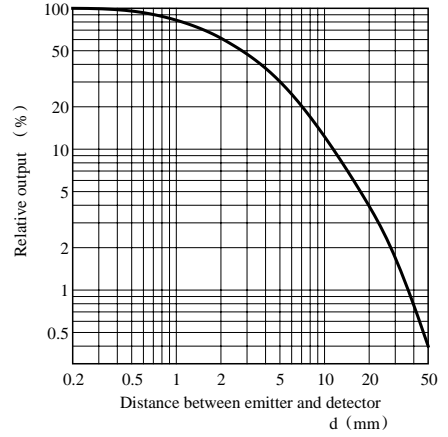


Fig.10 Relative Output vs. Distance (Emitter : GL480)



Please refer to the chapter “Precautions for Use.”

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