



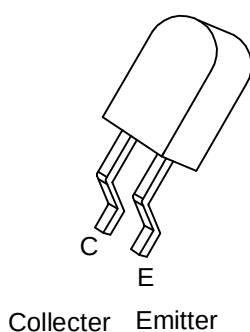
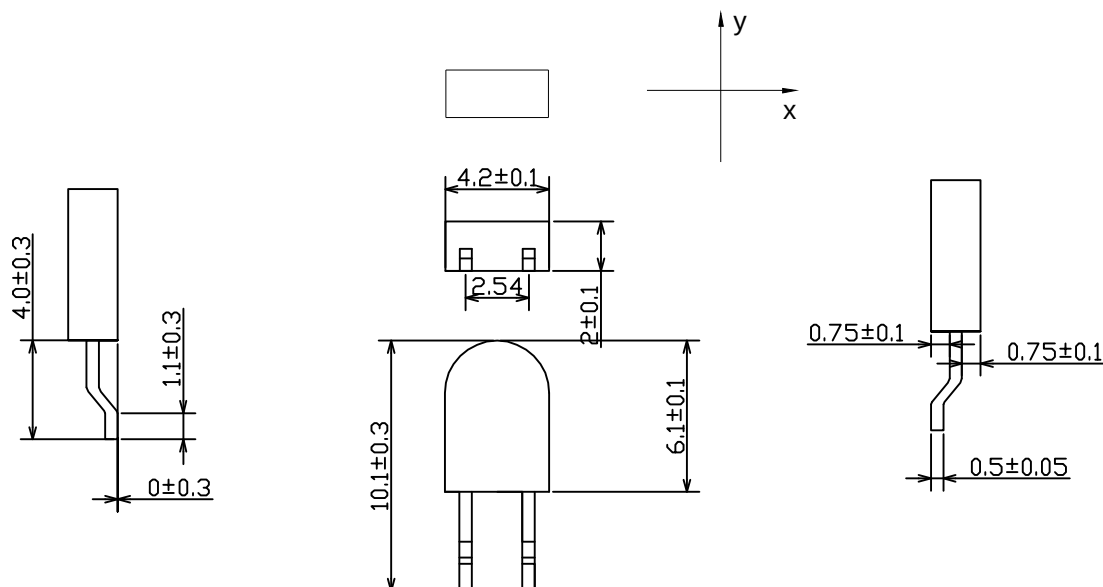
INFRARED PHOTO TRANSISTOR PATR NO. : CPT-78CB4-017-Z

Features

- I Fast reponse time
- I High photo sensitivity
- I This product itself will remain within RoHS compliant version.
- I ESD capacity:>5KV



Package Dimensions Unit : mm



Notes :

- 1、 All dimensions are in millimeters
2. Protruded resin under flange is 1.5 mm max.
3. Tolerance is ± 0.25 mm unless otherwise noted.



INFRARED PHOTO TRANSISTOR PATR NO. : CPT-78CB4-017-Z

Device Selection Guide

Lens	Chip Material
Black	Silicon

Absolute Maximum Ratings at $T_A=25^{\circ}\text{C}$

Parameter	Maximum Rating	Unit
Power Dissipation	75	mW
Collector-Emitter Voltage V_{CEO}	30	V
Emitter-Collector-Voltage V_{ECO}	5	V
Collector Current I_C	20	mA
Reverse Voltage	5	V
Operating Temperature Range	-25°C to $+80^{\circ}\text{C}$	
Storage Temperature Range	-35°C to $+85^{\circ}\text{C}$	
Lead Soldering Temperature(1.6mm From Body)	260°C for 5 seconds	
Lead Soldering Temperature(5mm From Body)	350°C for 3 seconds	

Optical-Electrical Characteristics at $T_A=25^{\circ}\text{C}$

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Collector – Emitter Breakdown Voltage	BV_{CEO}	$I_C=100\mu\text{A}$ $E_e=0\text{mW}/\text{cm}^2$	30	---	---	V
Emitter-Collector Breakdown Voltage	BV_{ECO}	$I_E=100\mu\text{A}$ $E_e=0\text{mW}/\text{cm}^2$	3.5	---	---	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2\text{mA}$ $E_e=1\text{mW}/\text{cm}^2$	---	---	0.4	V
Rise Time	t_r	$V_{CE}=5\text{V}$ $I_C=1\text{mA}$ $R_L=1000\Omega$	---	15	---	μS
Fall Time	t_f		---	15	---	
Collector Dark Current	I_{CEO}	$E_e=0\text{mW}/\text{cm}^2$ $V_{CE}=20\text{V}$	---	---	100	nA
On State Collector Current	$I_{C(on)}$	$E_e=1\text{mW}/\text{cm}^2$ $V_{CE}=5\text{V}$	0.05	0.35	---	mA
Wavelength of Peak Sensitivity	λ_p	---	---	940	---	nm
Rang of Spectral Bandwidth	$\lambda_{0.5}$	---	---	760-1100	---	nm



INFRARED PHOTO TRANSISTOR PATR NO. : CPT-78CB4-017-Z

Typical Optical-Electrical Characteristic Curves

Fig.1 Collector Power Dissipation vs.

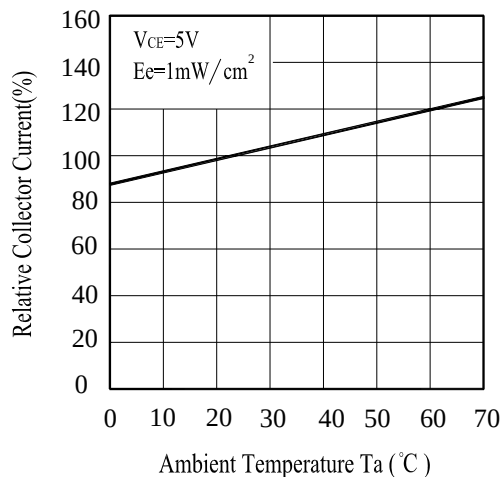


Fig.2 Spectral Sensitivity

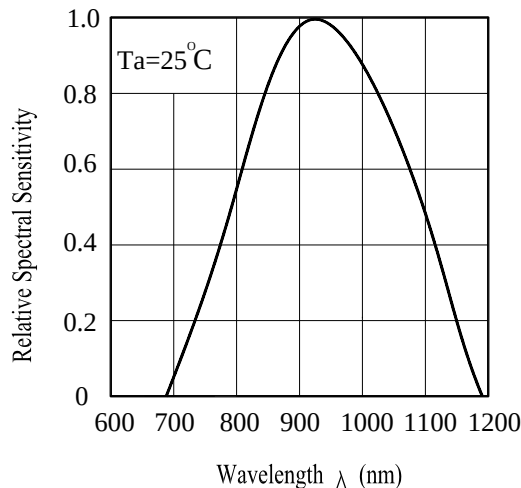


Fig.3 Relative Collector Current vs.

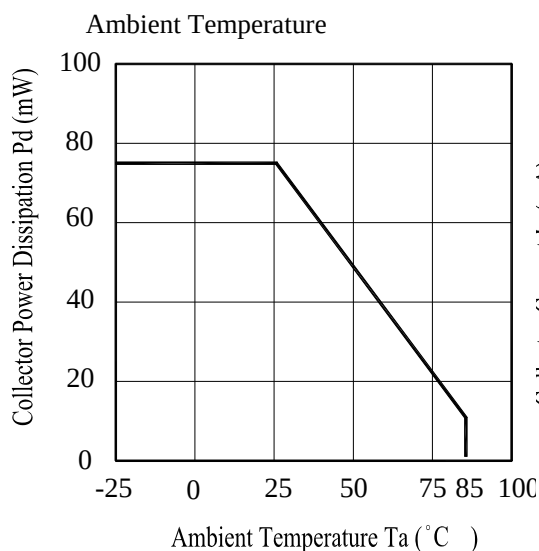


Fig.4 Collector Current vs.

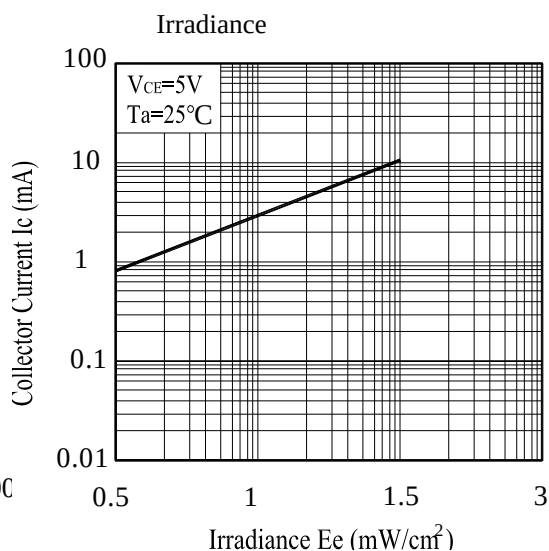


Fig.5 Collector Dark Current vs. Ambient Temperature

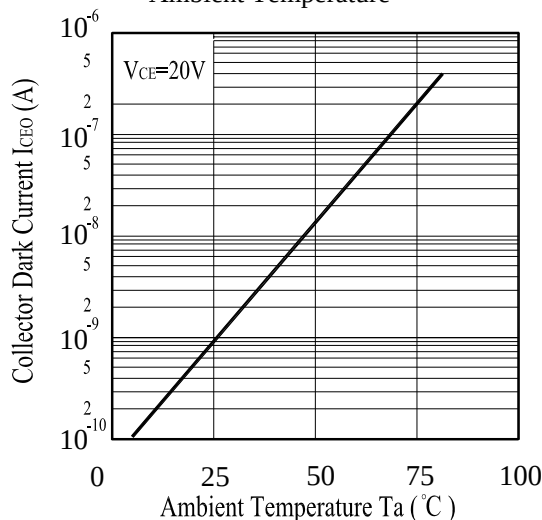
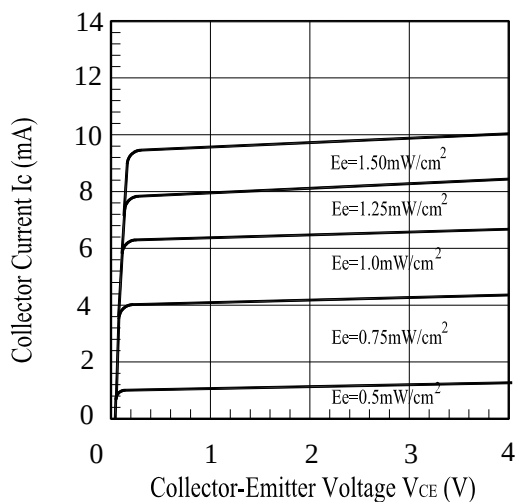


Fig.6 Collector Current vs. Collector-Emitter Voltage





INFRARED EMITTING DIODE

PATR NO. :CPT-78CB4-017-Z

Reliability test items and test conditions

The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

LTPD (group of permitted defect rate): 10%

No.	Item	Test Conditions	Test Hours/ Cycles	Sample Sizes	Ac/Re	Reference Standard
1	REFLOW Soldering	Temp. : 260°C±5°C	5secs	22PCS	0/1	JEITA ED-4701 300 302
2	Temperature Cycle	H : +100°C 15min ~5 min L : -40°C 15min	100Cycles	22PCS	0/1	JEITA ED-4701 100 305
3	Thermal Shock	H : +100°C 5min ~ 10 sec L : -10°C 5min	100Cycles	22PCS	0/1	MIL-STD-202G
4	High Temperature Storage	Temp. : 100°C	1000Hrs	22PCS	0/1	JEITA ED-4701 200 201
5	Low Temperature Storage	Temp. : -40°C	1000Hrs	22PCS	0/1	JEITA ED-4701 200 202
6	DC Operating Life	IF = 50 mA	1000Hrs	22PCS	0/1	Tested with CGX standard
7	High Temperature/ High Humidity	85°C/RH85%	1000Hrs	22PCS	0/1	JEITA ED-4701 100 103

Notes : Failure Judgement Criteria : $IR \geq U \times 2$ $I_e \leq L \times 0.8$ $VF \geq U \times 1.2$

U : Upper Specification Limit L : Lower Specification Limit