

### ITR9809-F/T

#### Features

- Fast response time
- High analytic
- Cut-off visible wavelength  $\lambda_p=940\text{nm}$
- High sensitivity
- Pb free
- This product itself will remain within RoHS compliant version

#### Description

- The ITR9809-F/T consist of an infrared emitting diode and an NPN silicon phototransistor, encased side-by-side on converging optical axis in a black thermoplastic housing,
- The phototransistor receives radiation from the IR LED only .  
This is the normal situation.
- Bt when an object is in between , phototransistor could not receives the radiation.
- For additional component information , please refer to IR908-7C/F56 and PT908-7C/F56.

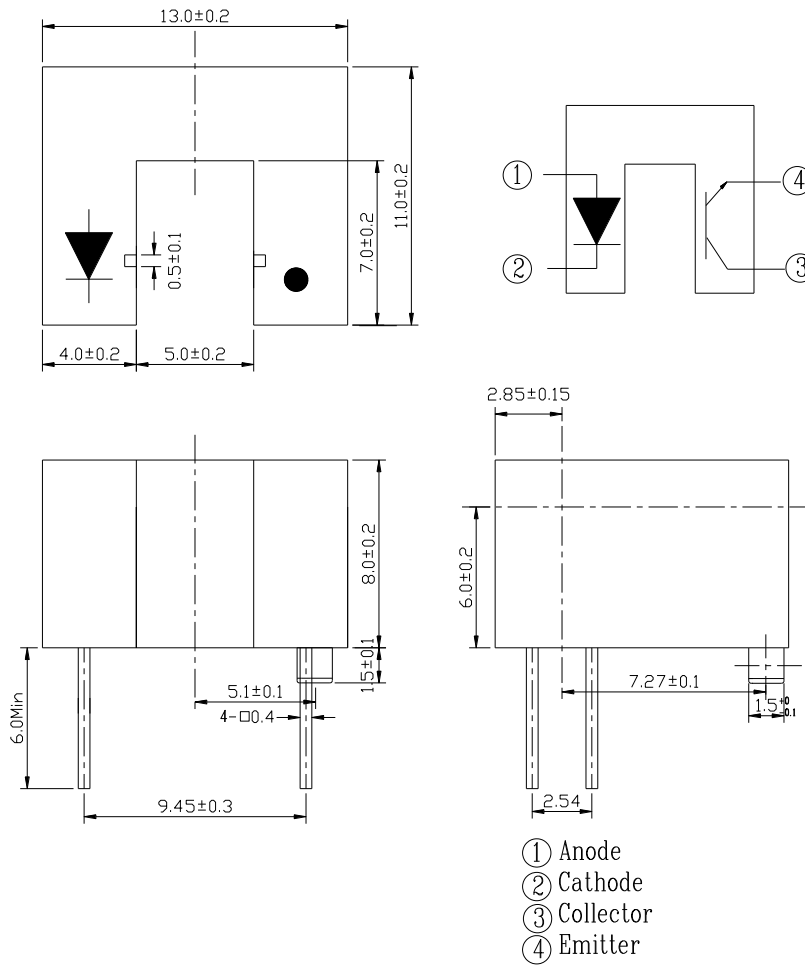
#### Applications

- Mouse Copier
- Switch Scanner
- Floppy disk driver
- Non-contact Switching
- For Direct Board

#### Device Selection Guide

Device No.	Chip Material	LENS COLOR
IR	GaAlAs	Water clear
PT	Silicon	Black

Package Dimensions



Notes:

1. All dimensions are in millimeters
2. Tolerances unless dimensions  $\pm 0.2$  mm
3. Lead spacing is measured where the lead emerge from the package
4. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification
5. These specification sheets include materials protected under copyright of EVERLIGHT corporation. Please don't reproduce or cause anyone to reproduce them without EVERLIGHT's consent
6. When using this product, please observe the absolute maximum ratings and the instructions for use outlined in these specification sheets. EVERIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.

**Absolute Maximum Ratings (Ta=25°C)**

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25°C Free Air Temperature	Pd	75	mW
	Reverse Voltage	V <sub>R</sub>	5	V
	Forward Current	I <sub>F</sub>	50	mA
	Peak Forward Current (*1) Pulse width ≤ 100μ s, Duty cycle=1%	I <sub>FP</sub>	1	A
Output	Collector Power Dissipation	P <sub>C</sub>	75	mW
	Collector Current	I <sub>C</sub>	20	mA
	Collector-Emitter Voltage	B V <sub>CEO</sub>	30	V
	Emitter-Collector Voltage	B V <sub>ECO</sub>	5	V
Operating Temperature		Topr	-25~+85	°C
Storage Temperature		Tstg	-40~+100	°C
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		Tsol	260	°C

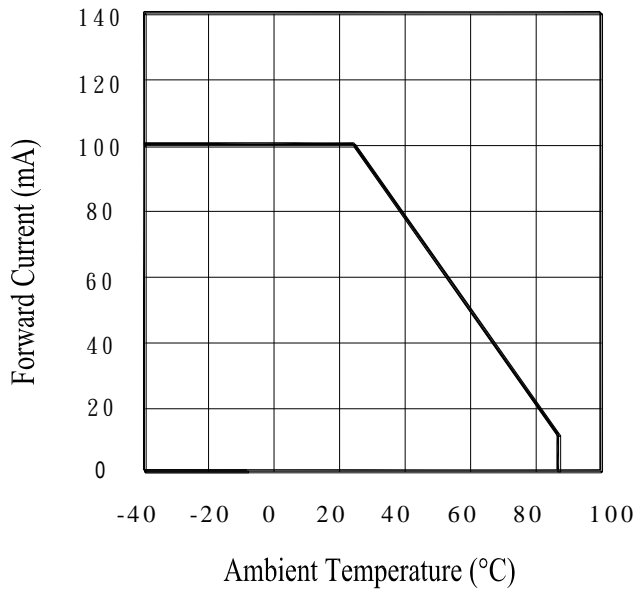
Notes: (\*1) tw=100 μsec. , T=10 msec. (\*2) t=5 Sec

**Electro-Optical Characteristics (Ta=25°C)**

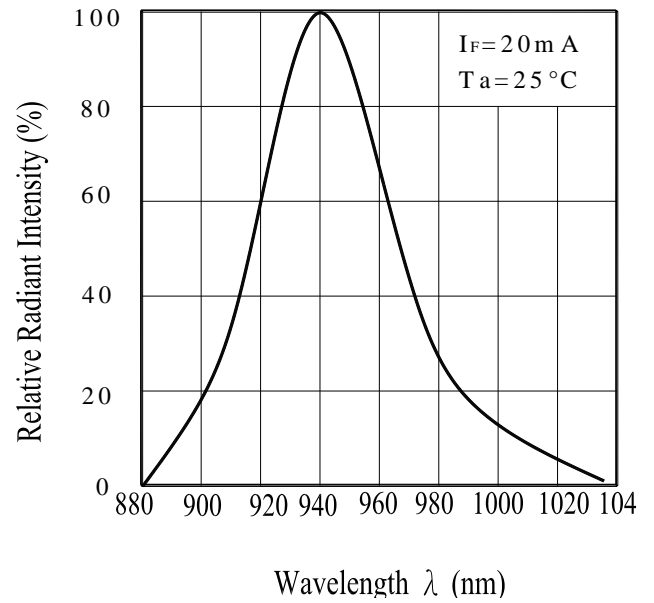
Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V <sub>F</sub>	---	1.2	1.5	V	I <sub>F</sub> =20mA
	Reverse Current	I <sub>R</sub>	---	---	10	μ A	V <sub>R</sub> =5V
	Peak Wavelength	λ <sub>p</sub>	---	940	---	nm	I <sub>F</sub> =20mA
	View Angle	2θ1/2	---	40	---	Deg	I <sub>F</sub> =20mA
Output	Dark Current	I <sub>CEO</sub>	---	---	100	nA	V <sub>CE</sub> =20V, Ee=0mW/cm <sup>2</sup>
	C-E Saturation Voltage	V <sub>CE(sat)</sub>	---	---	0.4	V	I <sub>C</sub> =0.5mA , Ee=10mW/cm <sup>2</sup>
Transfer Characteristics	Collect Current	I <sub>C(ON)</sub>	1.0	--	10	mA	V <sub>CE</sub> =5V I <sub>F</sub> =20mA
		I <sub>C(OFF)</sub>	---	--	10	μ A	
	Rise time	t <sub>r</sub>	---	20	---	μ sec	V <sub>CE</sub> =5V I <sub>C</sub> =1 mA R <sub>L</sub> =1KΩ
	Fall time	t <sub>f</sub>	---	20	---	μ sec	

Typical Electrical/Optical/Characteristics Curves for IR

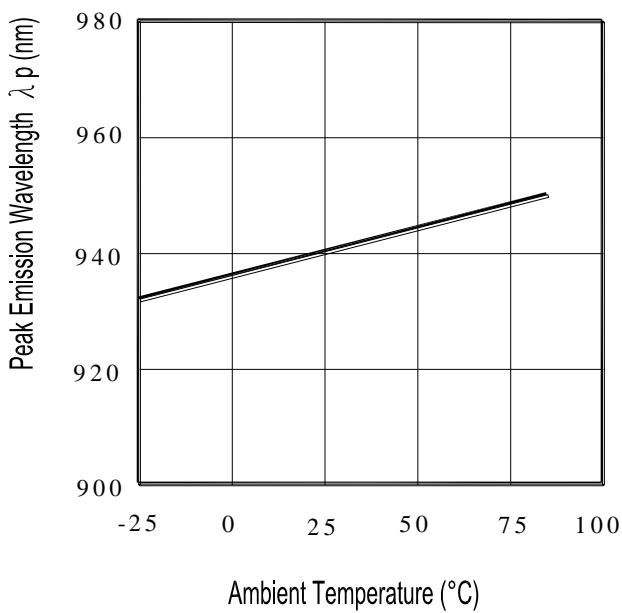
Forward Current vs. Ambient Temperature



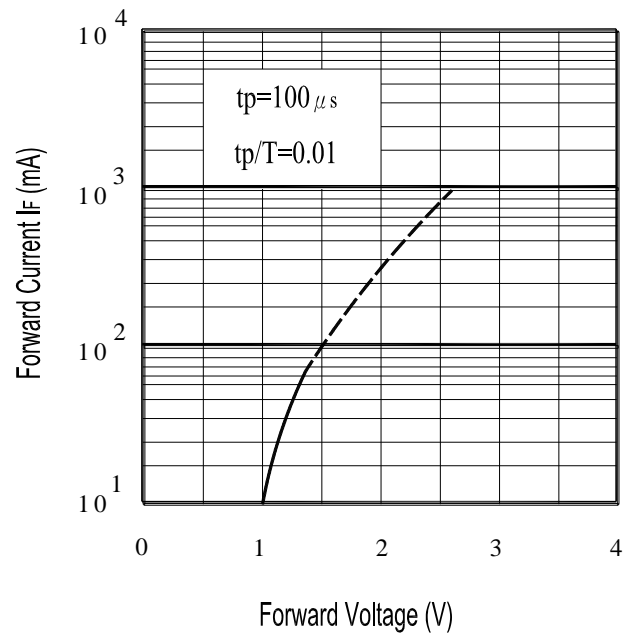
Spectral Distribution



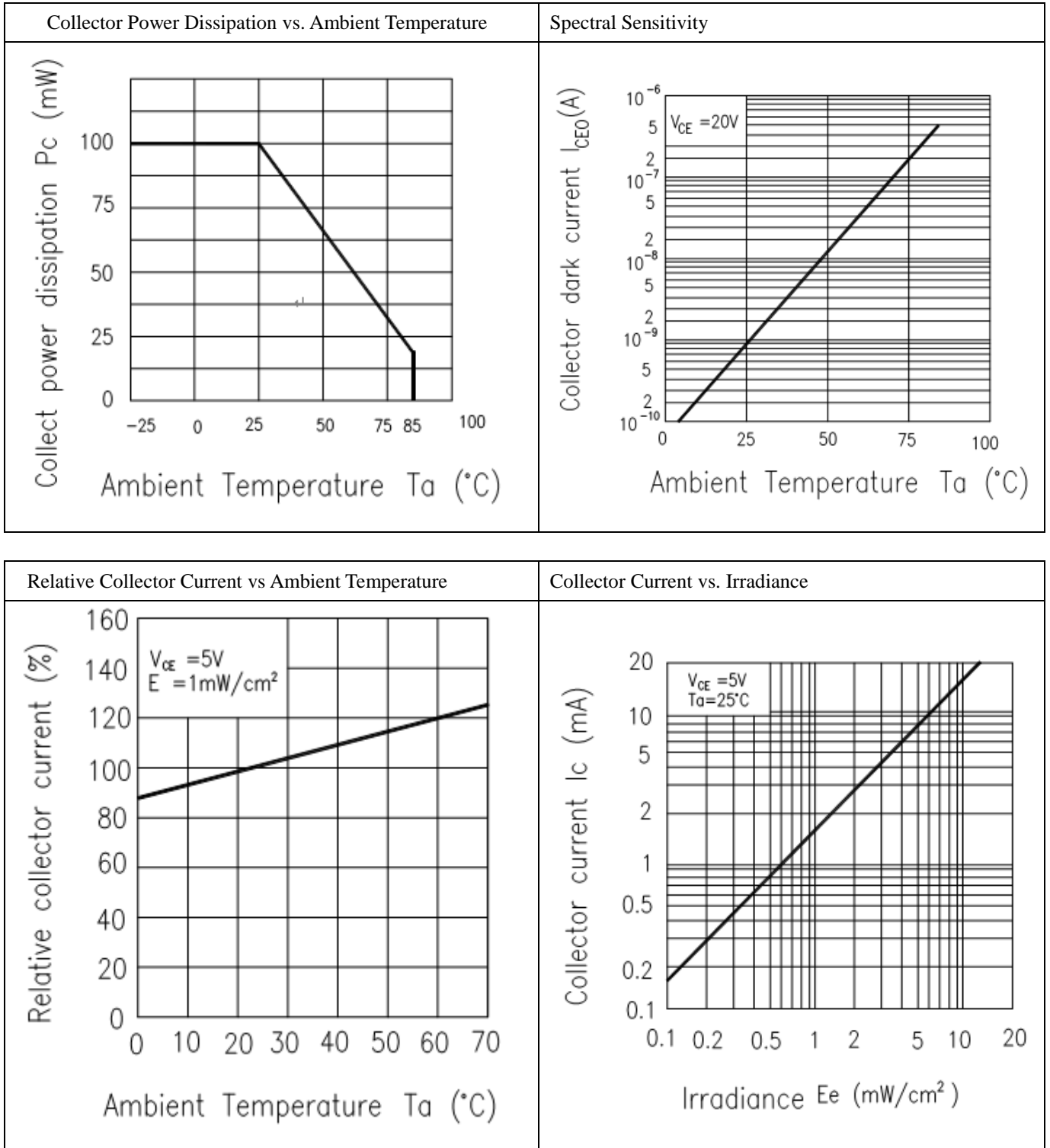
Peak Emission Wavelength vs. Ambient Temperature

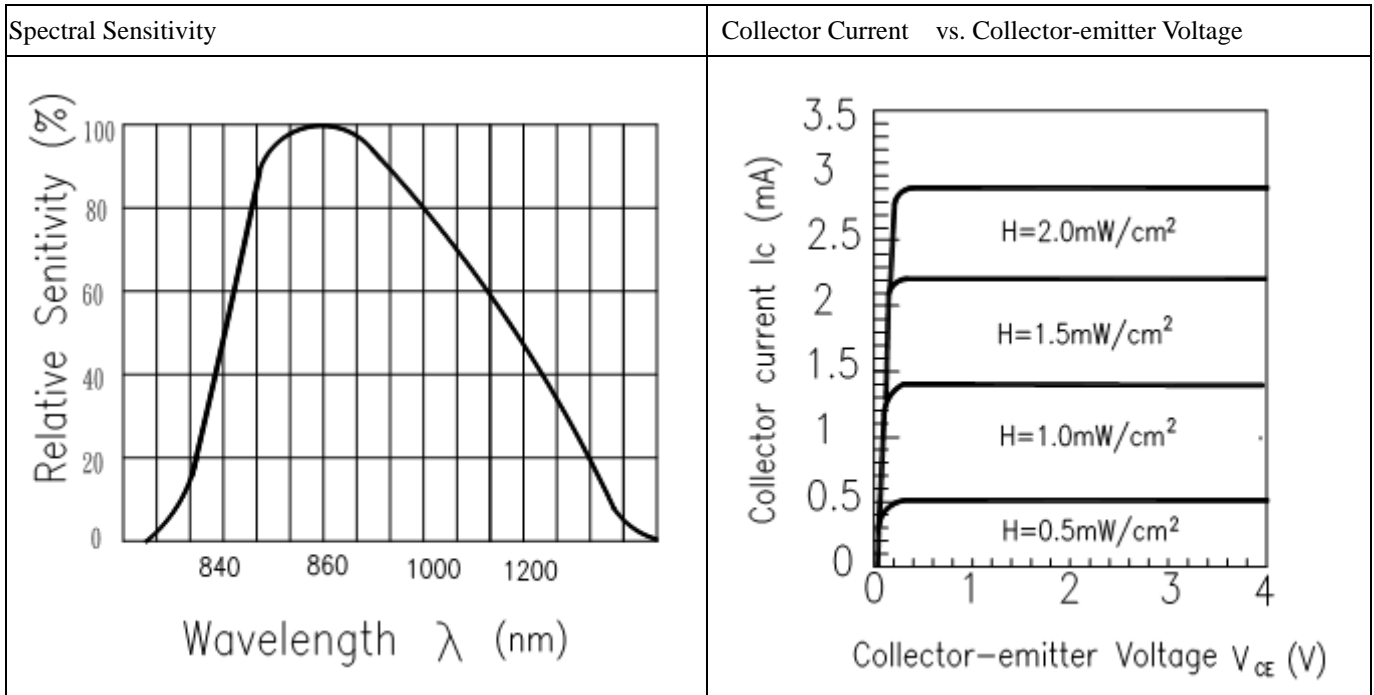


Forward Current vs. Forward Voltage



Typical Electro/Optical/Characteristics Curves for PT





### Packing Quantity Specification

80PCS/1Plate,5Plates/1Box, 10Boxes/1Carton

### Label Form Specification

	<div style="border: 1px solid black; padding: 2px; display: inline-block;">EVERLIGHT</div>	
CPN: P/N:  ITR9809-F/T	<div style="border: 1px solid black; padding: 2px; display: inline-block;">RoHS</div>	
QTY:  LOT NO:  Reference: 	CAT: HUE: REF:	

- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number
- X: Month
- Reference: Identify Label Number

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