Subminiature High Sensitivity Photo Interrupter

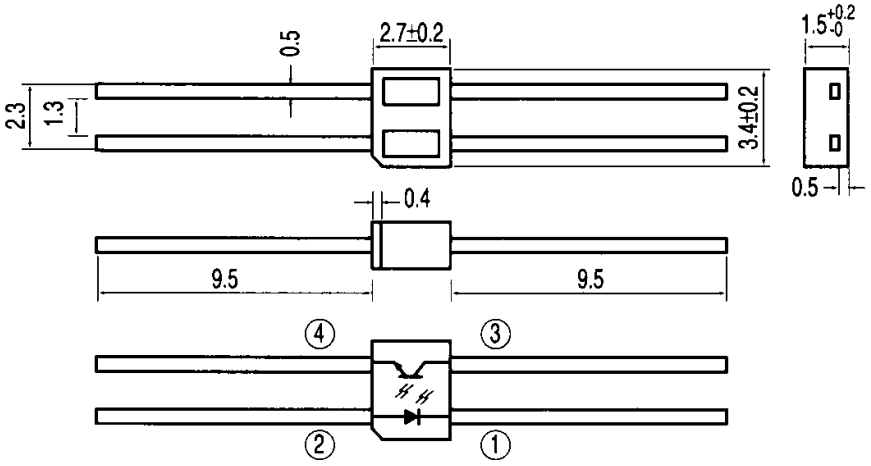
ITR8307

Features:

ITR:

- FAST RESPONSE TIME.
- HIGHLY ANALYTICAL.
- CUTTING WAVELENGTH λp=840nm.
- THIN.
- COMPACT.

Package Dimensions:



Descriptions:

The ITR8307 reflective sensors consist of an infrared emitting diode and an NPN silicon photo transistor mounted side by side in a black plastic housing.
The photo transistor responds to radiation emitted from the diode only when a reflective object or surface is in the field of view of the detector.

Applications:

- Camera.
- VCR.
- Floppy disk driver.
- Cassette type recorder.
- Various microcomputer control equipment.

Absolute Maximum Ratings: (Ta=25°C)

PARAMETER		SYMBOL	RATING	UNIT
Input	Power Dissipation	Pd	75	mW
	Reverse Voltage	Vr	5	V
	Forward Current	If	50	mA
	Peak Forward Current(*1)	Ifp	1	A
Output	Collector Power Dissipation	Pc	100	mW
	Collector Current	Ic	30	mA
	C-E Breakdown Voltage	B Vceo	30	V
	E-C Breakdown Voltage	B Veco	5	V
Operating Temperature		Topr	-20~+70	℃
Storage Temperature		Tstg	-30~+80	℃
Soldering Temperature(*2)		Tsol	260	℃

(*1) Tw=100μsec.,T=10 msec. (*2) 1/16 inch from body for 5 sec

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

PARAMETER		SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITION
Input	Forward Voltage	Vf	-	1.2	1.6	V	If = 20 mA
	Reverse Current	Ir	-	-	10	μA	Vr = 5V
	Peak Wavelength	λp	-	940	-	nm	-
Output	Dark Current	Iceo	-	-	100	nA	Vce = 10V
	C-E Saturation Voltage	Vce (sat)	-	-	0.4	V	Ic = 0.5 mA If = 20mA
Light Current		I_L	0.1	-	-	mA	Vce = 5V If = 20mA
Leakage Current		Iceod	-	-	200	nA	
Speed	Rise Time	Tr	-	25	-	μSEC	Vcc=2V Ic=1mA RL=1KΩ
	Fall Time	Tf	-	25	-	μSEC	

Fig-1 FORWARD CURRENT VS. AMBIENT TEMPERATURE

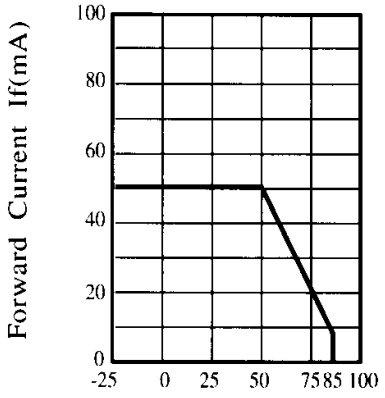


Fig-2 SPECTRAL DISTRIBUTION

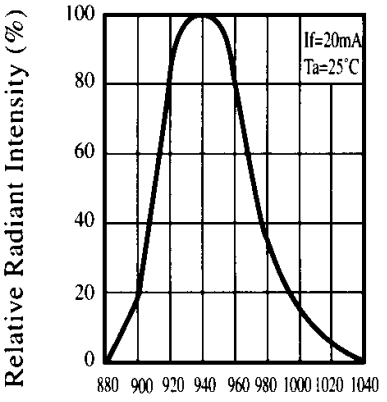


Fig-3 PEAK EMISSION WAVELENGTH VS. AMBIENT TEMPERATURE

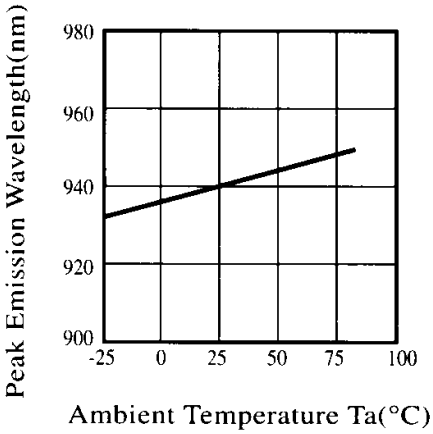


Fig-4 FORWARD CURRENT VS. FORWARD VOLTAGE

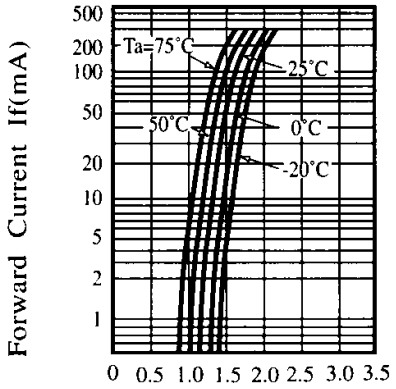


Fig-5 RELATIVE RADIANT FLUX VS. AMBIENT TEMPERATURE

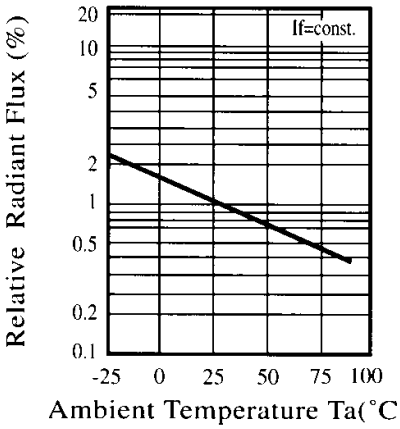


Fig-6 RELATIVE RADIANT INTENSITY VS. ANGULAR DISPLACEMENT

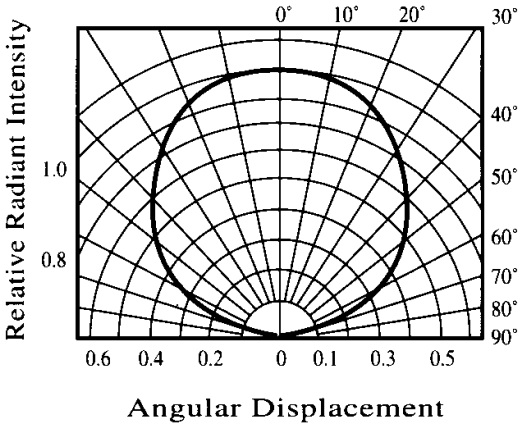


Fig-1 COLLECTOR POWER DISSIPATION VS. AMBIENT TEMPERATURE

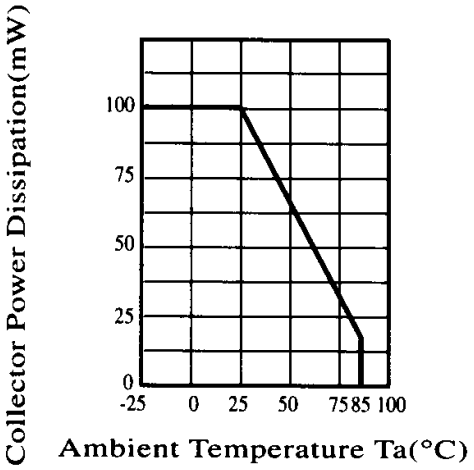


Fig-2 COLLECTOR DARK CURRENT VS. AMBIENT TEMPERATURE

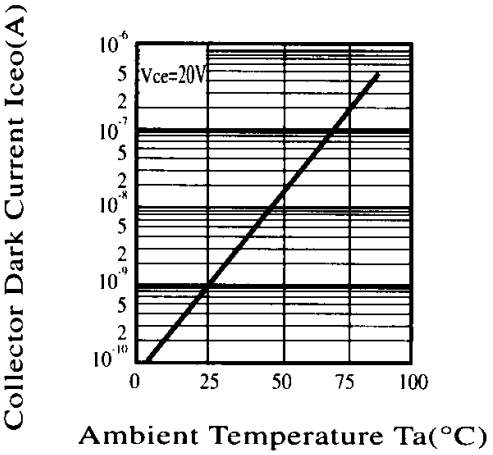


Fig-3 RELATIVE COLLECTOR CURRENT VS. AMBIENT TEMPERATURE

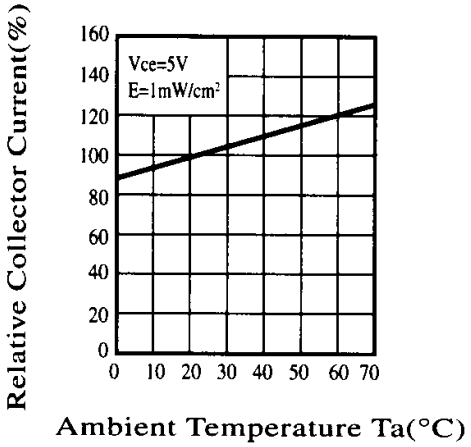


Fig-4 COLLECTOR CURRENT VS. IRRADIANCE

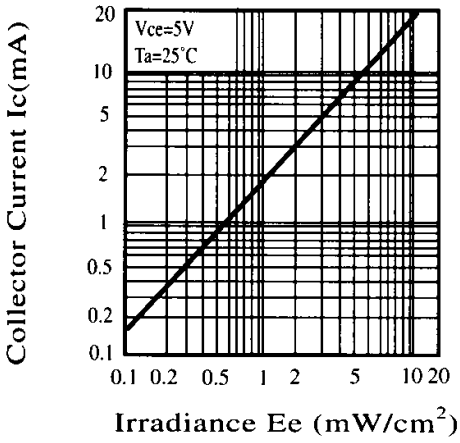


Fig-5 SPECTRAL SENSITIVITY

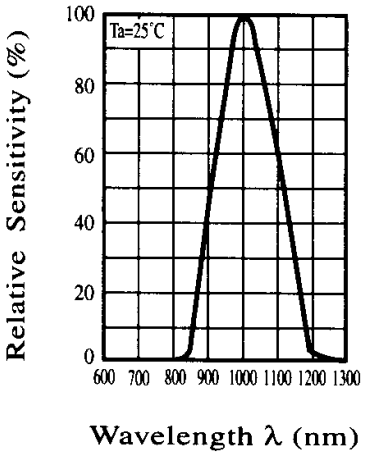


Fig-6 COLLECTOR CURRENT VS. COLLECTOR-EMITTER VOLTAGE

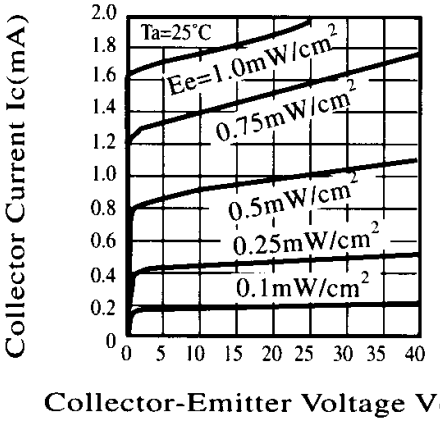
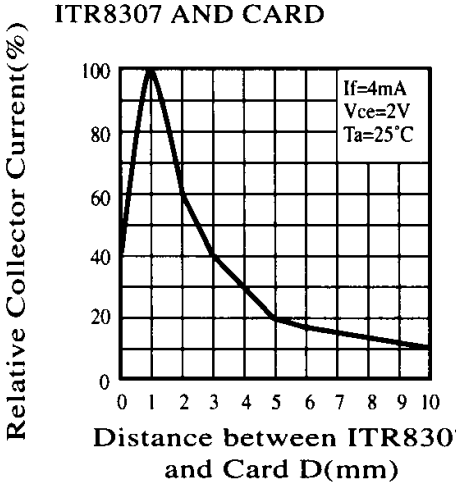


Fig-1 RELATIVE COLLECTOR CURRENT VS. DISTANCE BETWEEN ITR8307 AND CARD



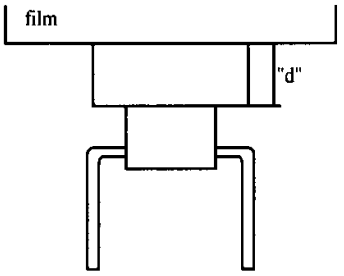
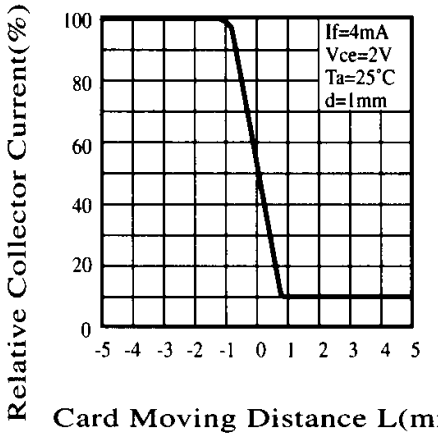
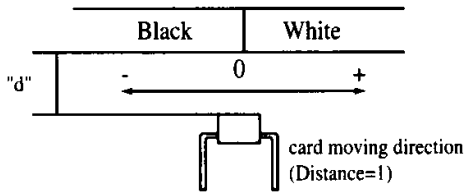


Fig-2 RELATIVE COLLECTOR CURRENT VS. CARD MOVING DISTANCE





RESPONSE TIME VS. LOAD RESISTANCE