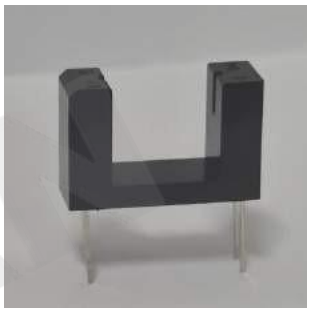
ITR1100(908)



Features

- Fast response time
- High analytic
- Cut-off visible wavelength λp=940nm
- High sensitivity
- Pb free
- This product itself will remain within RoHS compliant version

Applications

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

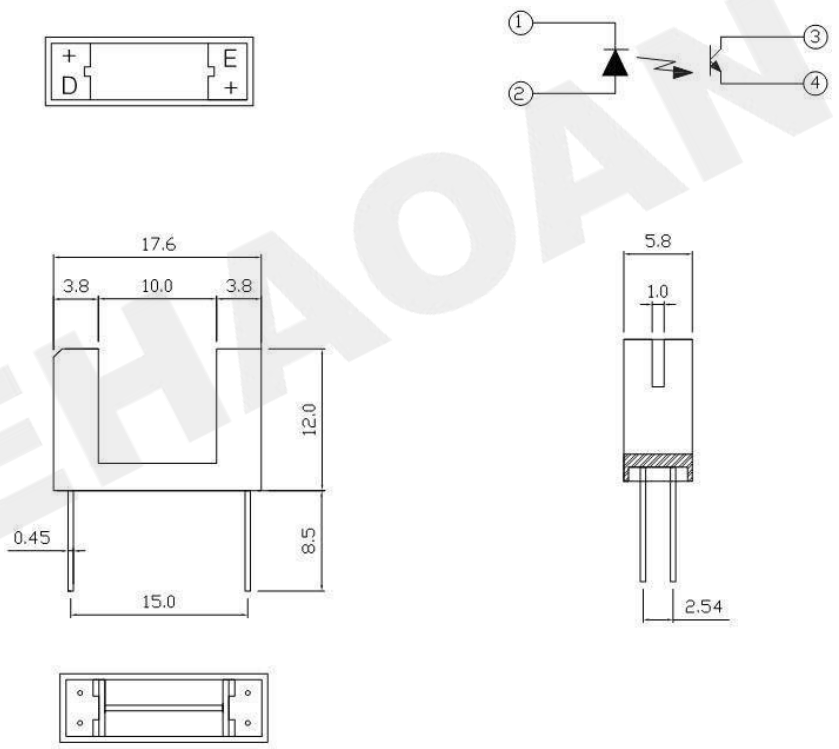
Descriptions

The ITR1100(908) (Slot Optical Switch) is a gallium arsenide infrared emitting diode which is coupled with a silicon photo transistor in a plastic housing. The packaging system is designed to optimize the mechanical resolution, coupling efficiency, and insulates ambient light. The slot in the housing a provides a means of interrupting the signal with printer, scanner, copier, or other opaque material, switching the output from an “ON” to “OFF” state.

Device Selection Guide

Type	Material	Lens Color	Peak Wavelength
IR	GaAlAs	Water clear	940 nm
PT	Silicon	Water clear	940 nm

Package Dimension



①：Cathode ③：Collector
②：Anode ④：Emitter

Note: Tolerances unless mentioned ±0.3mm. Unit = mm.

Packing Quantity Specification
1.150Pcs/1Bag
2.6Bags/1Box
3.10Boxes/1Carton

Absolute Maximum Ratings (Ta=25℃)

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25° C Free Air Temperature	P_d	75	mW
	Reverse Voltage	V_R	5	V
	Forward Current	I_F	50	mA
	Peak Forward Current (*1) Pulse width ≦100μs, Duty cycle=1%	I_{FP}	1	A
Output	Collector Power Dissipation	P_C	75	mW
	Collector Current	I_C	20	mA
	Collector-Emitter Voltage	V_{CEO}	30	V
	Emitter-Collector Voltage	V_{ECO}	5	V
Operating Temperature		T_{opr}	-25~+85	℃
Storage Temperature		T_{stg}	-40~+85	℃
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		T_{sol}	260	℃

(*1) Tw =100 μsec., T =10 msec. (*2) T=5 Sec.

Electro-Optical Characteristics (Ta=25℃)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V_F	----	1.2	1.6	V	I_F=20mA
	Reverse Current	I_R	----	----	10	μA	V_R=5V
	Peak Wavelength	λ_P	----	940	----	nm	I_F=20mA
Output	Collector Dark Current	I_{CEO}	----	----	100	nA	V_{CE}=10V,Ee=0mW/cm²
	C-E Saturation Voltage	$V_{CE}(sat)$	----	----	0.4	V	I_C=0.5mA,Ee=10mW/cm²
	Collect Current	$I_C(ON)$	----	1.5	----	mA	V_{CE}=5V ,I_F=20mA
Transfer Characteristics	Rise time	t_r	----	15	----	μsec	V_{CE}=5V I_C=1mA R_L=1KΩ
	Fall time	t_f	----	15	----	μsec	

Typical Electrical/Optical/Characteristics Curves for IR

Fig.1 Forward Current vs. Ambient Temperature

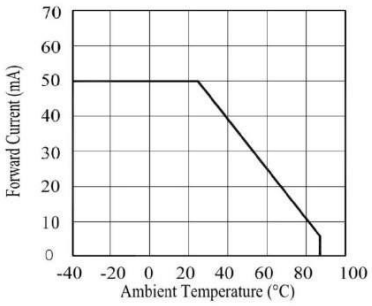


Fig.2 Spectral Distribution

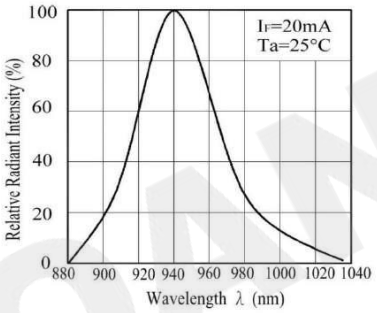


Fig.3 Forward Current vs. Forward Voltage

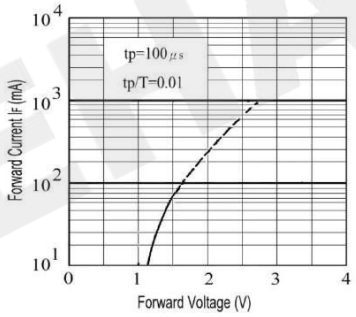
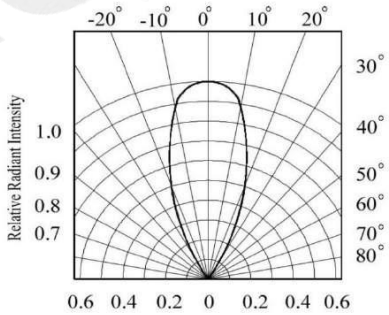


Fig. 4 Relative Radiant Intensity vs. Angular Displacement



Typical Electrical/Optical/Characteristics Curves for PT

Fig.1 Spectral Sensitivity

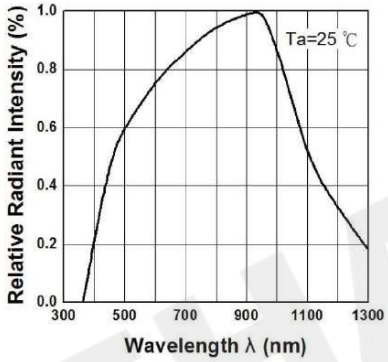


Fig.2 Collector Current vs. Irradiance

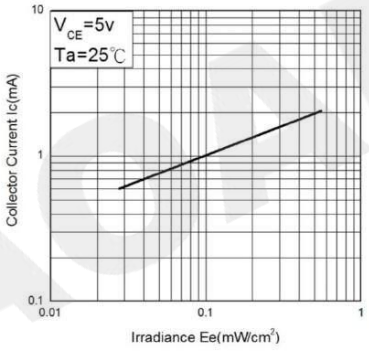
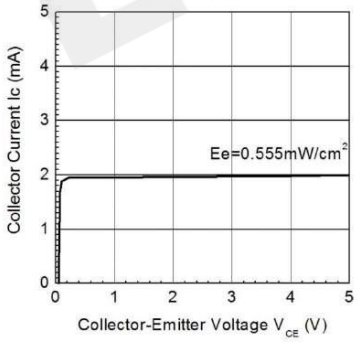


Fig.3 Collector Current vs. Collector-Emitter Voltage



Reliability test item and condition

The reliability of products shall be satisfied with item listed below: Confidence level :90% LTPD:10%

Parameter	Purpose & Condition	Failure Judgement Criteria	Samples(n) Defective(c)
Temperature Cycle	Evaluates product's ability to withstand exposure to high temperature, low temperature, and temperature variation between two limit temperature. Standard test Condition: 85℃~25℃~-55℃~25℃ 30min 5min 30min 5min 50 cycle	IR ≧U x 2 IC(on)≦L x 0.8 VF ≧U x 1.2 U：Upper specification Limit L：Lower specification limit	n =22,c=0
Thermal Shock	Evaluates product's ability to withstand rapid temperature change Standard test Condition: 85℃ ~ -55℃ 5 min 5 min 50cycle		n =22,c=0
High Temperature Storage	Evaluates product's ability to withstand prolonged storage at high temperature Standard test Condition: Temperature : 100 ℃ Time : 1000hrs		n =22,c=0
Low Temperature Storage	Evaluates product's ability to Storage withstand prolonged storage at low temperature Standard test Condition: Temperature : -55 ℃ Time : 1000hr		n =22,c=0
Operating Life Test	Evaluates product's endurance to prolonged electrical or temperature stresses. Standard test Condition: VCE =5V IF =20mA Time : 1000hrs		n =22,c=0
High Temperature High Humidity	Evaluates product's ability to withstand prolonged storage at high temperature and high humidity. Standard test Condition: Temperature: 85℃ Relative humidity:85% Time : 1000hrs		n =22,c=0
Soldering Heat	Evaluates product's ability to n =22，c=0 withstand soldering heat Standard test conditions Solder temperature : 260±5℃ Solder time : 10 seconds		n =22,c=0