

ITR9707

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 ITR9707 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.
- But when an object is in between , phototransistor could not receives the radiation.
- For additional component information , please refer to IR908-7C and PT908-7C

Applications

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

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Device Selection Guide

Device No.	Chip Material
IR908-7C	GaAlAs
PT908-7C	Silicon

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 _R	5	V
	Forward Current	I _F	50	mA
	Peak Forward Current (*1) Pulse width 100 μs, 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~+100	
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		T _{sol}	260	

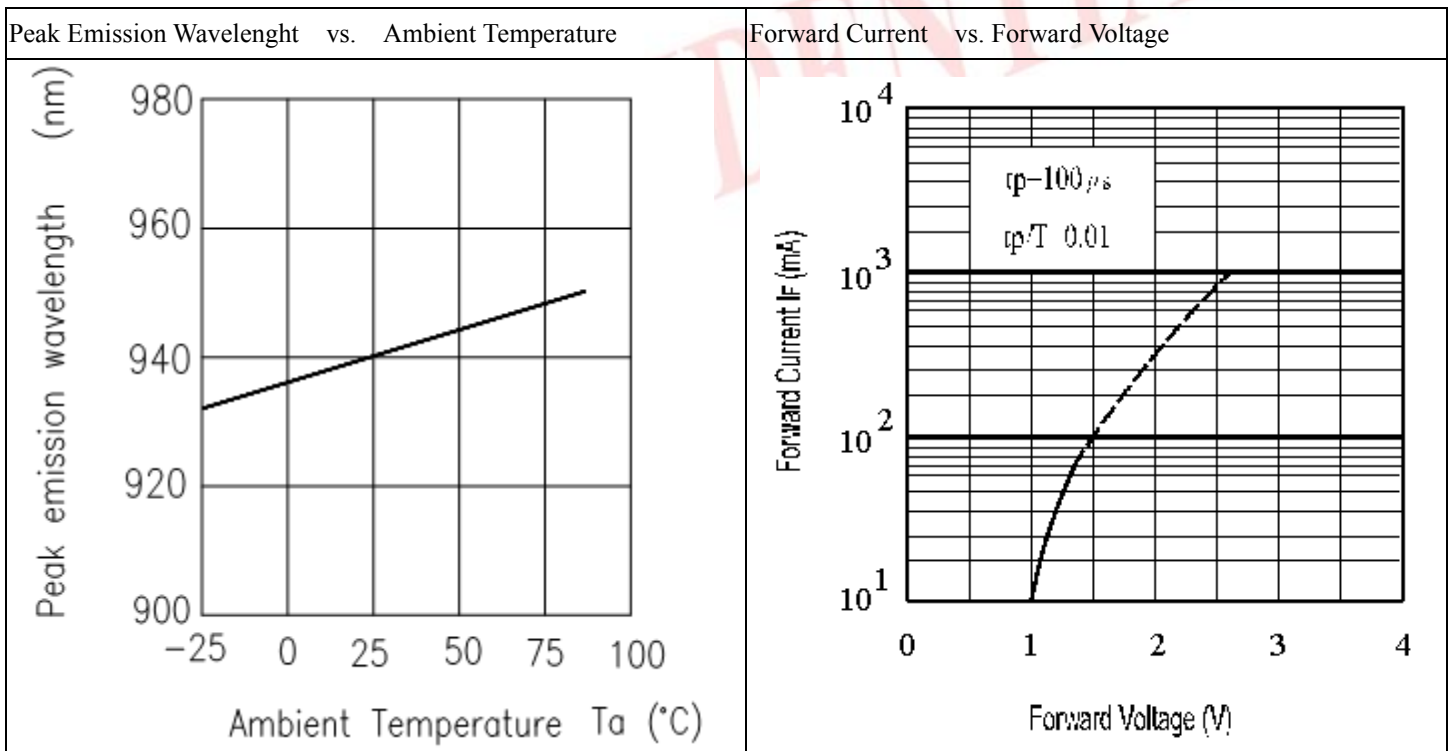
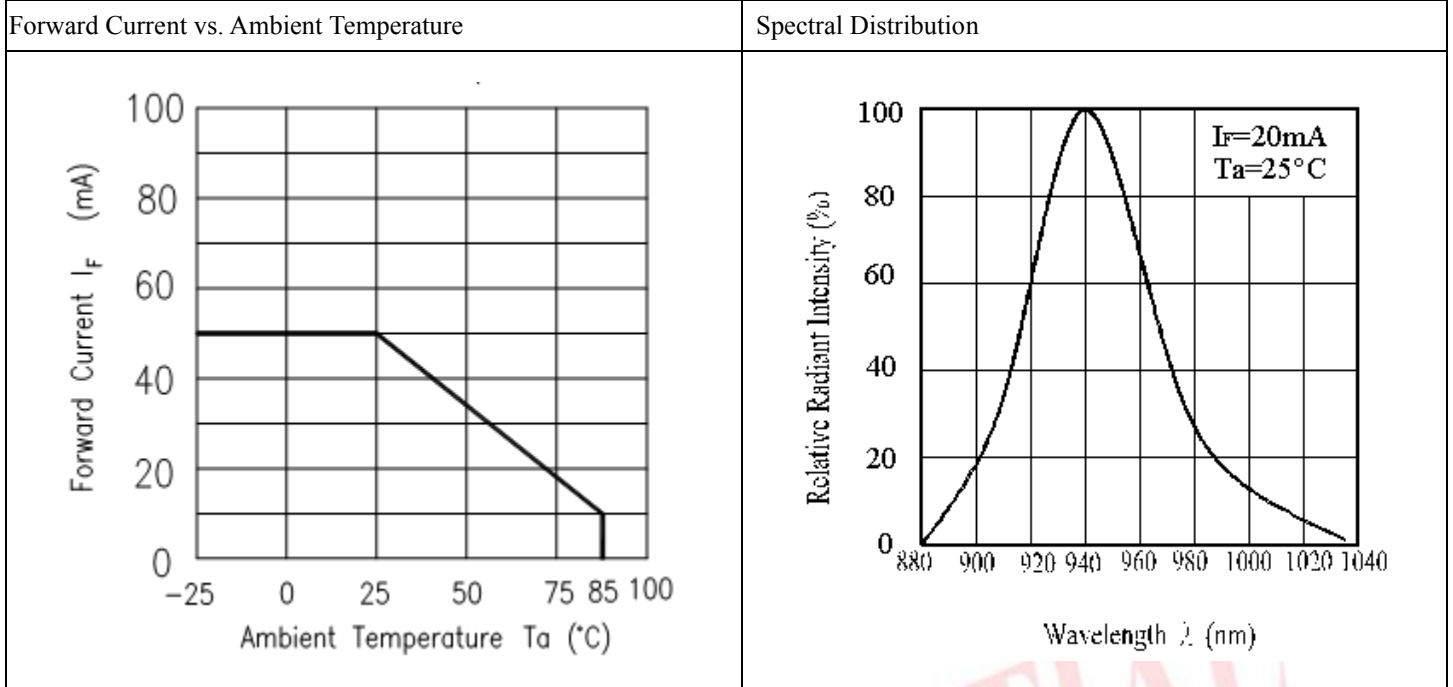
Notes: (*1) $t_w=100 \mu\text{sec.}$, $T=10 \text{ msec.}$ (*2) $t=5 \text{ Sec}$

Electro-Optical Characteristics (Ta=25)

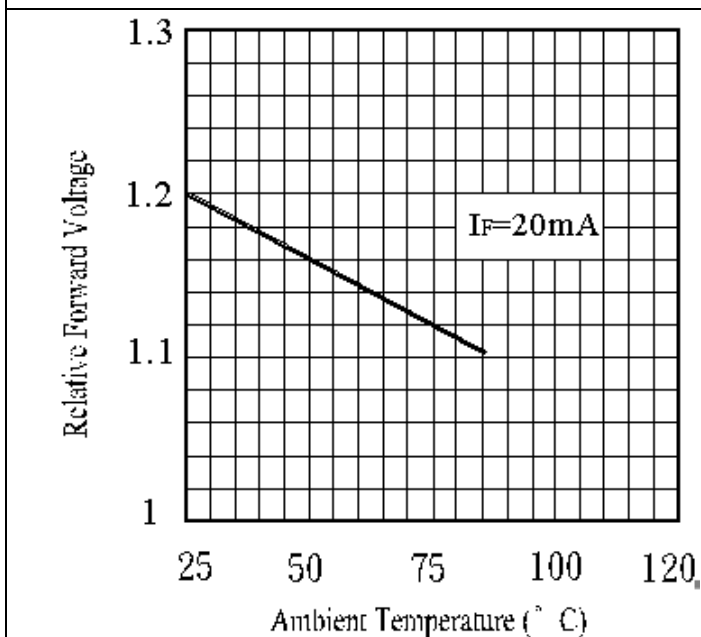
Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V_F	---	1.2	1.5	V	$I_F=20mA$
	Reverse Current	I_R	---	---	10	μA	$V_R=5V$
	Peak Wavelength	λ_p	---	940	---	nm	$I_F=20mA$
	View Angle	2 θ 1/2	---	60	---	Deg	$I_F=20mA$
Output	Dark C urrent	I_{CEO}	---	---	100	nA	$V_{CE}=20V, E_e=0mW/cm^2$
	C-E Saturation Voltage	$V_{CE(sat)}$	---	---	0.4	V	$I_C=2mA$ $E_e=1mW/cm^2$
Transfer Characteristics	Collect Current	$I_C(ON)$	0.50	---	---	mA	$V_{CE}=5V$ $I_F=20mA$
	Rise time	t_r	---	15	---	μsec	$V_{CE}=5V$ $I_C=1mA$ $R_L=1K\Omega$
	Fall time	t_f	---	15	---	μsec	

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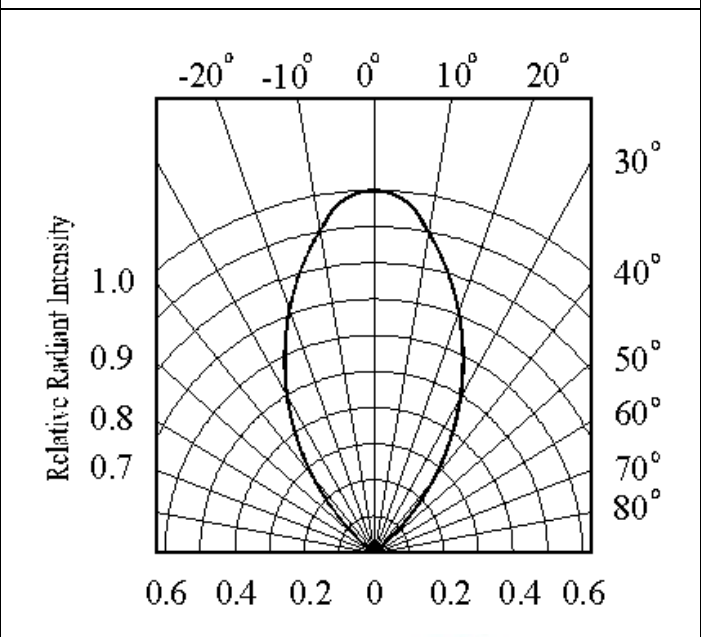
Typical Electrical/Optical/Characteristics Curves for IR



Forward Current vs. Ambient Temperature

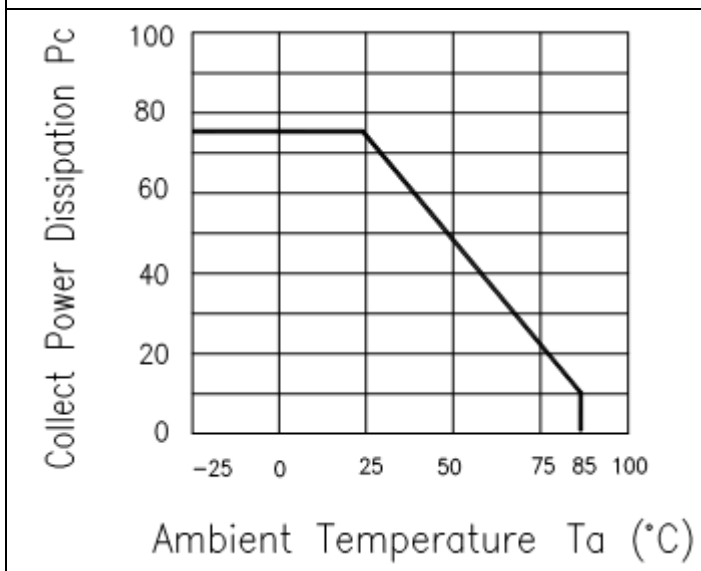


Relative Radiant Intensity vs. Angular Displacement

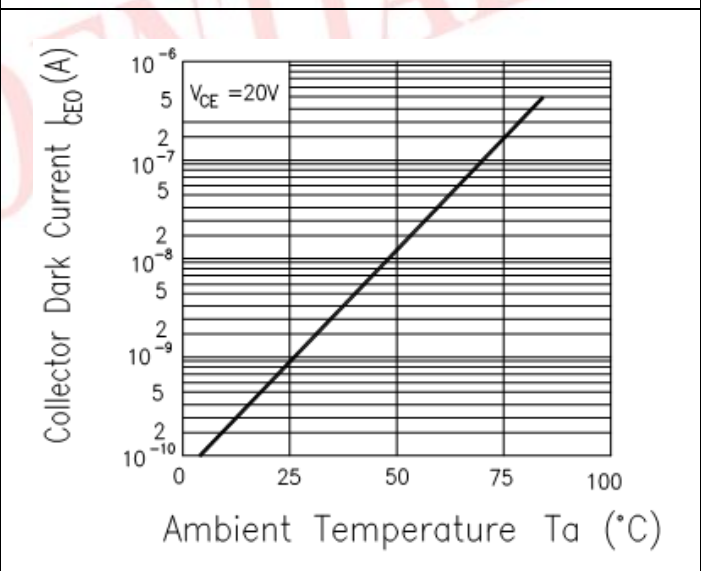


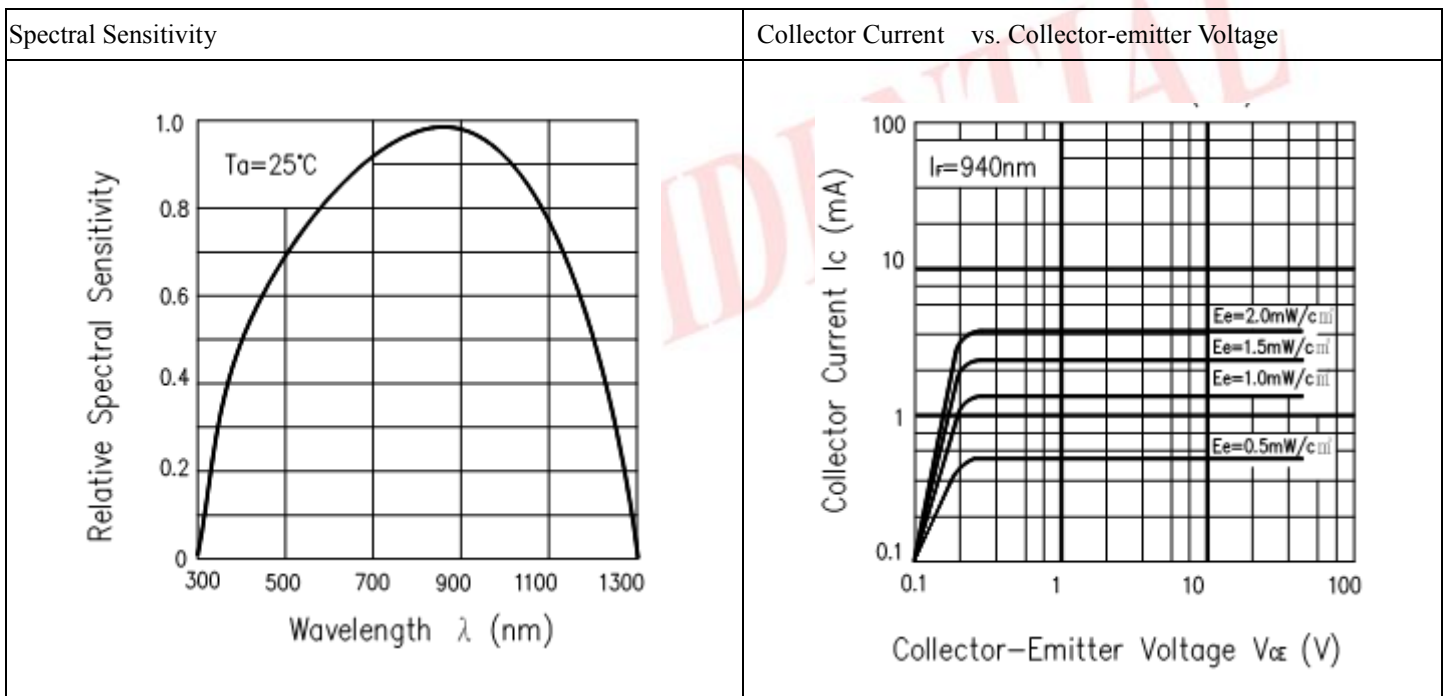
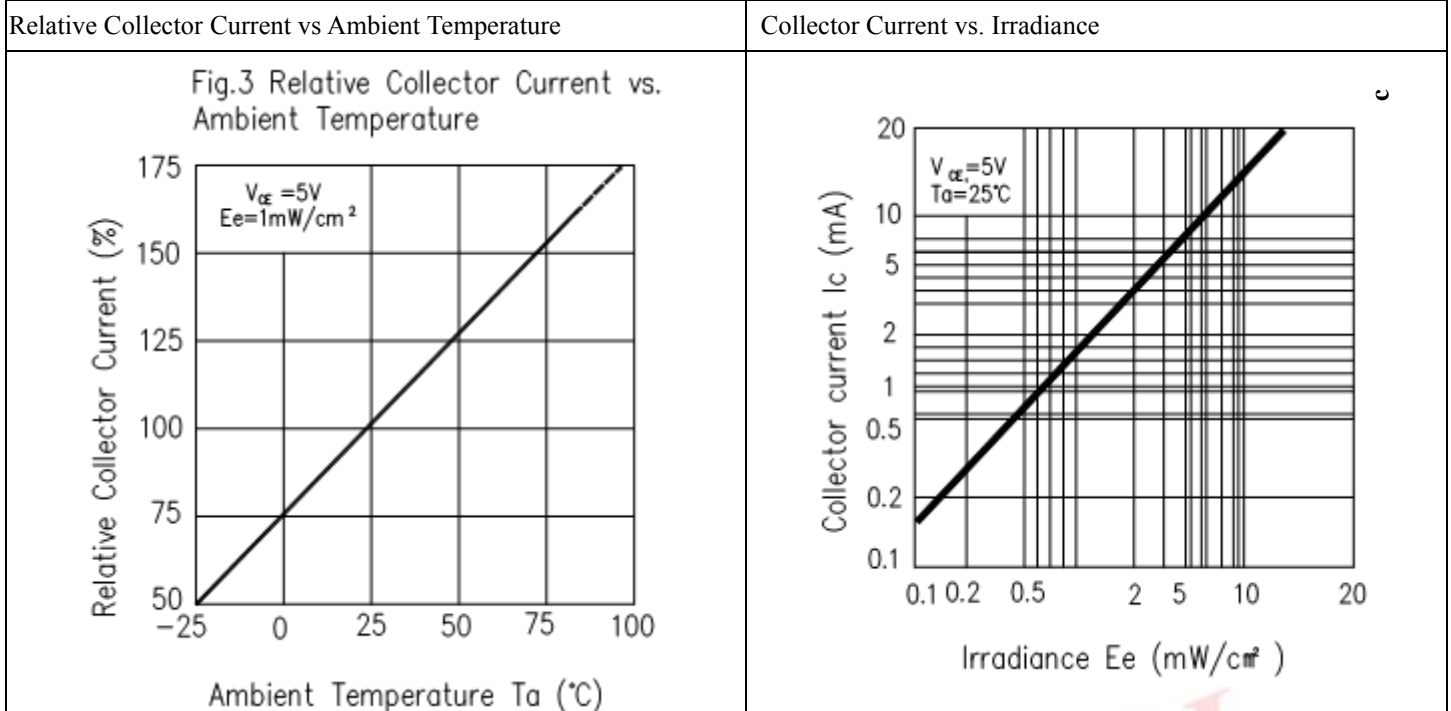
Typical Electro/Optical/Characteristics Curves for PT

Collector Power Dissipation vs. Ambient Temperature

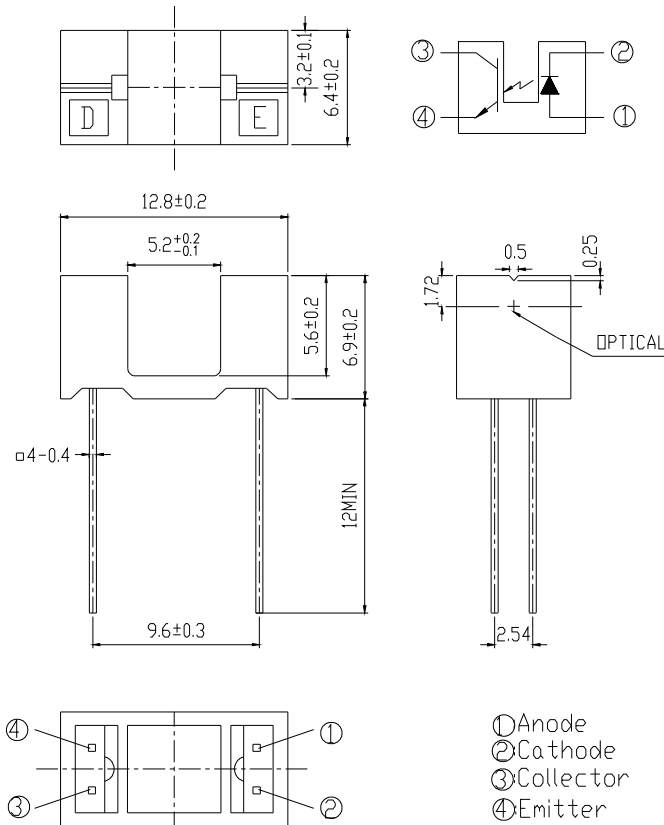


Collector Dark Current vs. Ambient Temperature





Package Dimension



Notes:

1. All dimensions are in millimeters
2. Tolerances unless dimensions ± 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
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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.

Reliability Test Item And Condition

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

Confidence level : 90%

LTPD : 10%

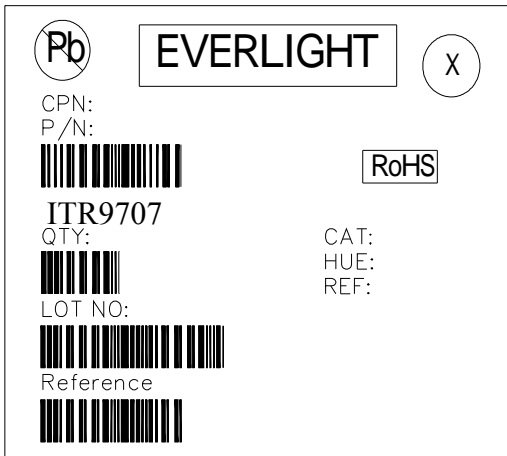
NO.	Item	Test Conditions	Test Hours/ Cycle	Sample Size	Failure Judgement Criteria	Ac/Re
1	Solder Heat	TEMP : 260 ± 5	10 sec	22 PCs	I _{c(on)} L×0.8 L :Lower specification limit	0/1
2	Temperature Cycle	H : +100 ↑ 15 min 5 min ↓ 15 min L : -40	300 cycle	22 PCs		0/1
3	Thermal Shock	H : +100 ↑ 5 min 10 sec ↓ 5 min L : -10	300 cycle	22 PCs		0/1
4	High Temperature Storage	TEMP. : +100	1000 hrs	22 PCs		0/1
5	Low Temperature Storage	TEMP. : -40	1000 hrs	22 PCs		0/1
6	DC Operating Life	V _{CE} =5V IF=20mA	1000 hrs	22 PCs		0/1
7	High Temperature / High Humidity	85 / 85% R.H.	1000 hrs	22 PCs		0/1

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Packing Quantity Specification

1. 78Pcs/1Tube,42 Tubes/1Box
2. 4Boxes/1Carton

Label Form Specification



- 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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