

### 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

### 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 <sub>R</sub>	5	V
	Forward Current	I <sub>F</sub>	50	mA
	Peak Forward Current (*1) Pulse width 100 μs, 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	V <sub>CEO</sub>	30	V
	Emitter-Collector Voltage	V <sub>ECO</sub>	5	V
Operating Temperature		T <sub>opr</sub>	-25~+85	
Storage Temperature		T <sub>stg</sub>	-40~+100	
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		T <sub>sol</sub>	260	

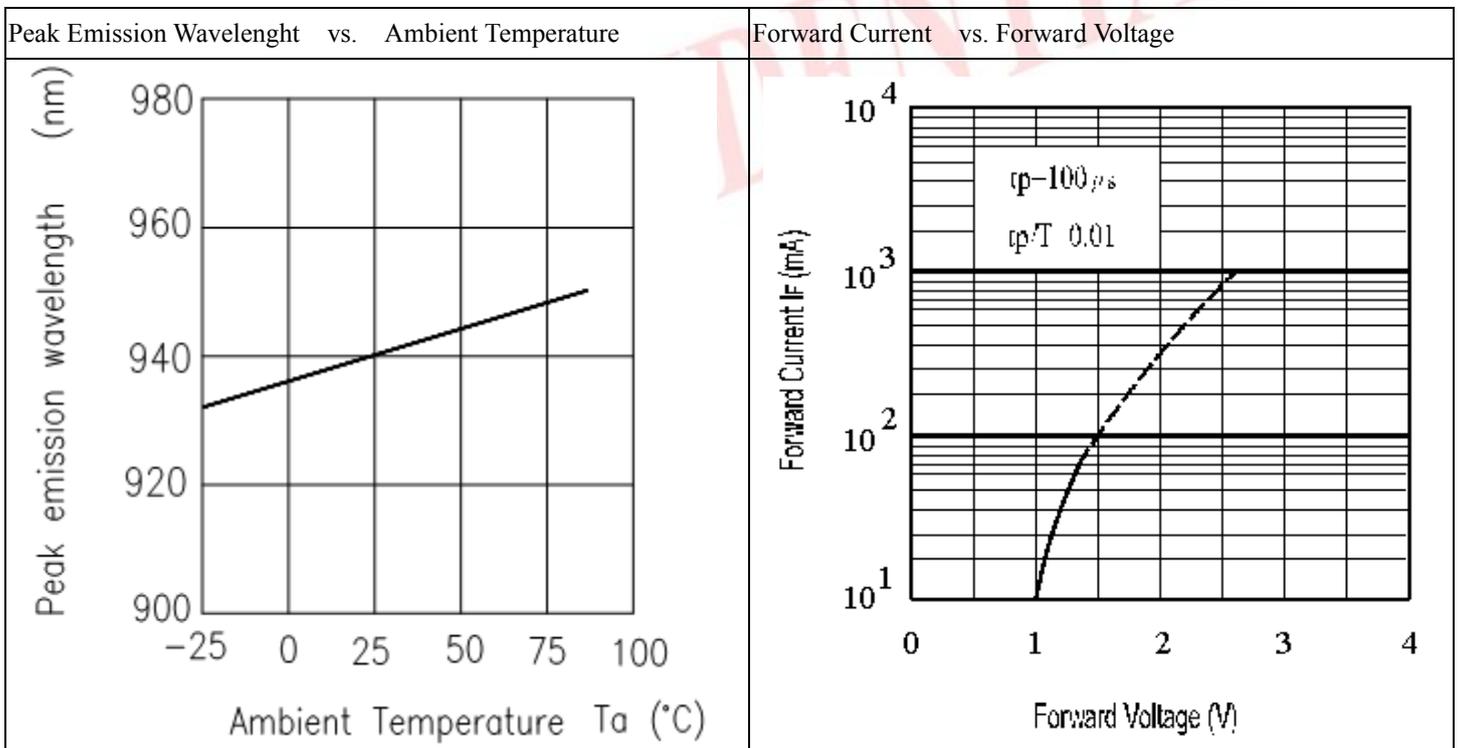
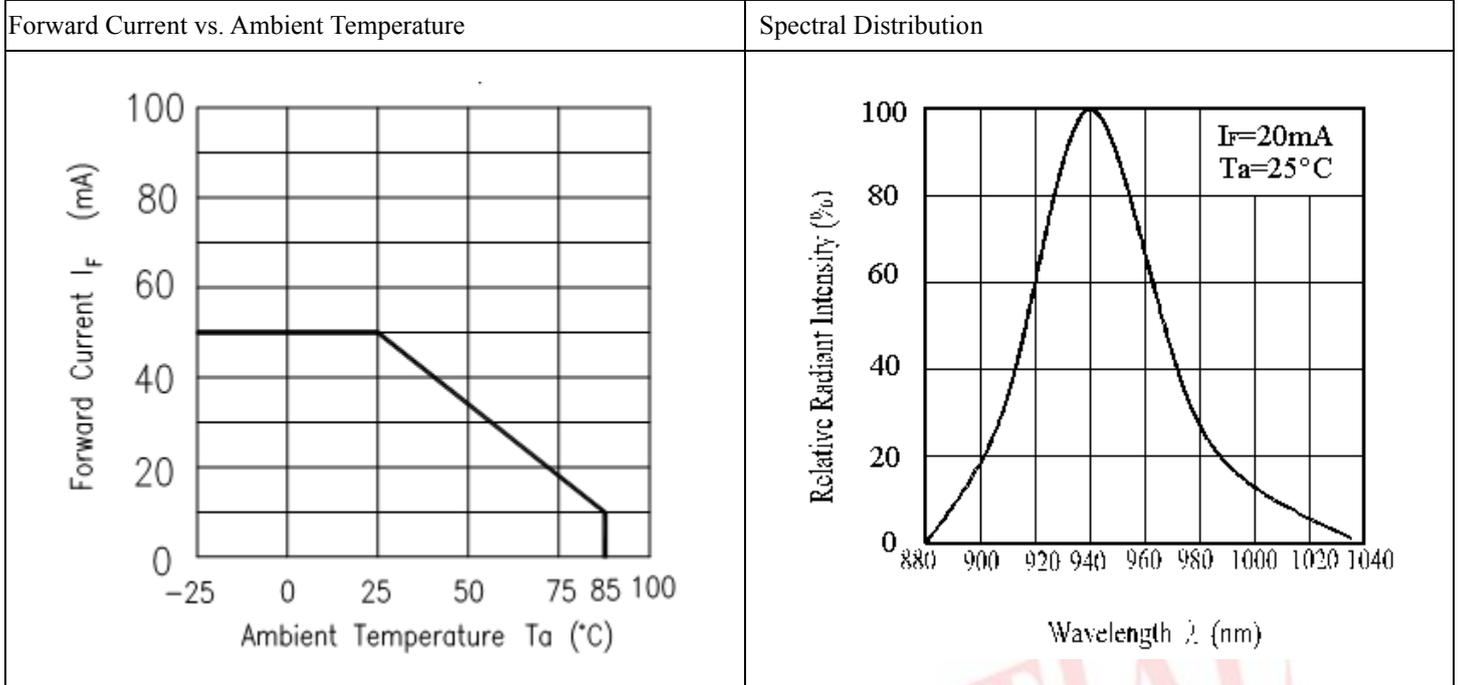
Notes: (\*1)  $t_w=100 \mu\text{sec.}$ ,  $T=10 \text{ msec.}$  (\*2)  $t=5 \text{ Sec}$

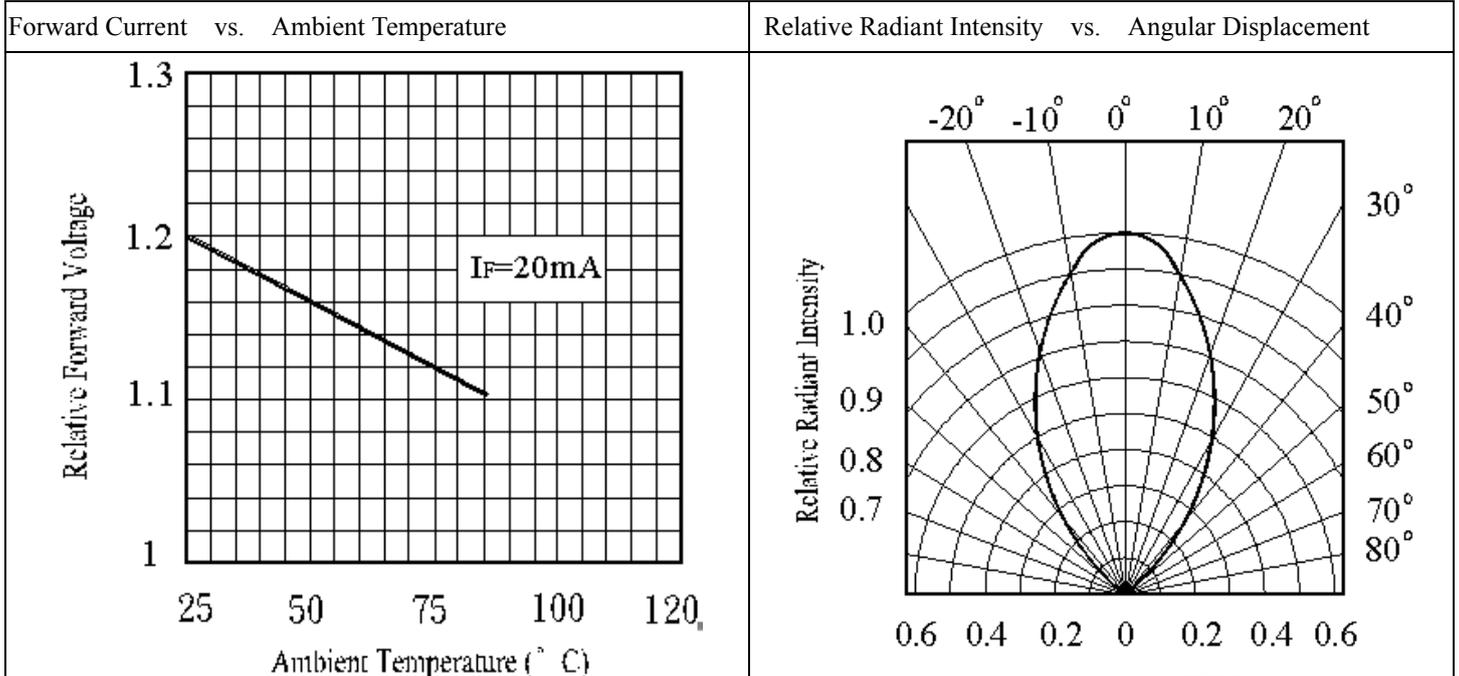
Electro-Optical Characteristics (Ta=25 )

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	$\mu A$	$V_R=5V$
	Peak Wavelength	$\lambda_p$	---	940	---	nm	$I_F=20mA$
	View Angle	2 $\theta$ 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	---	$\mu sec$	$V_{CE}=5V$ $I_C=1mA$ $R_L=1K\Omega$
	Fall time	$t_f$	---	15	---	$\mu sec$	

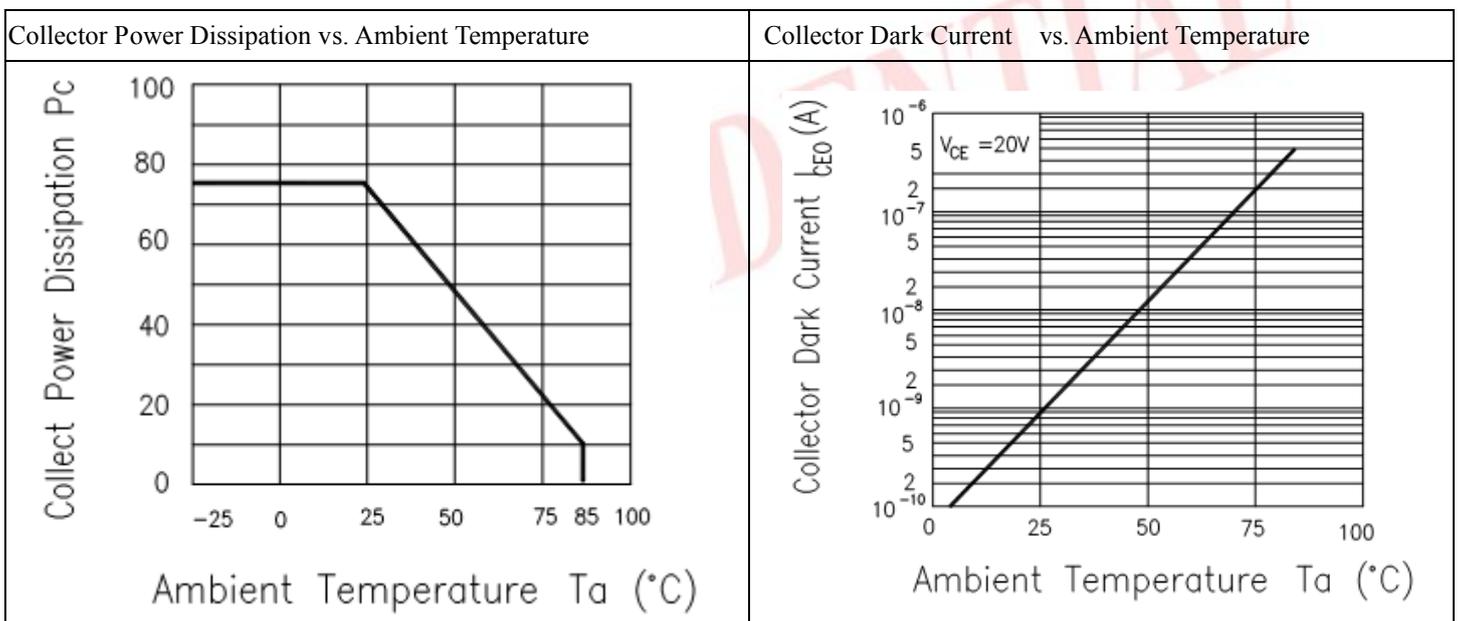
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Typical Electrical/Optical/Characteristics Curves for IR

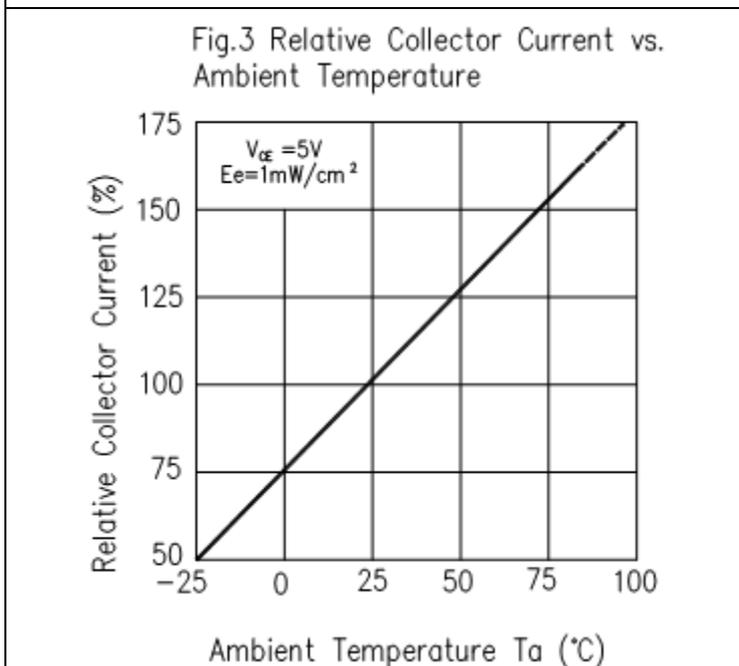




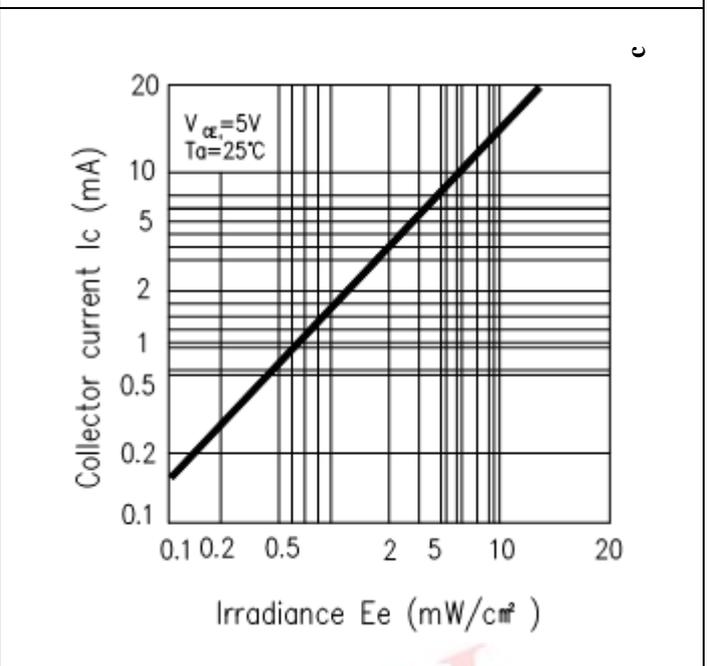
Typical Electro/Optical/Characteristics Curves for PT



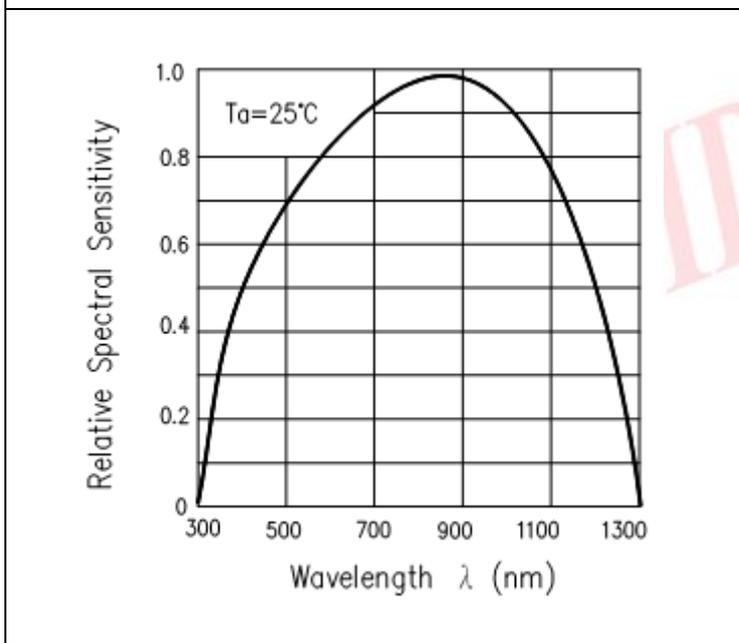
Relative Collector Current vs Ambient Temperature



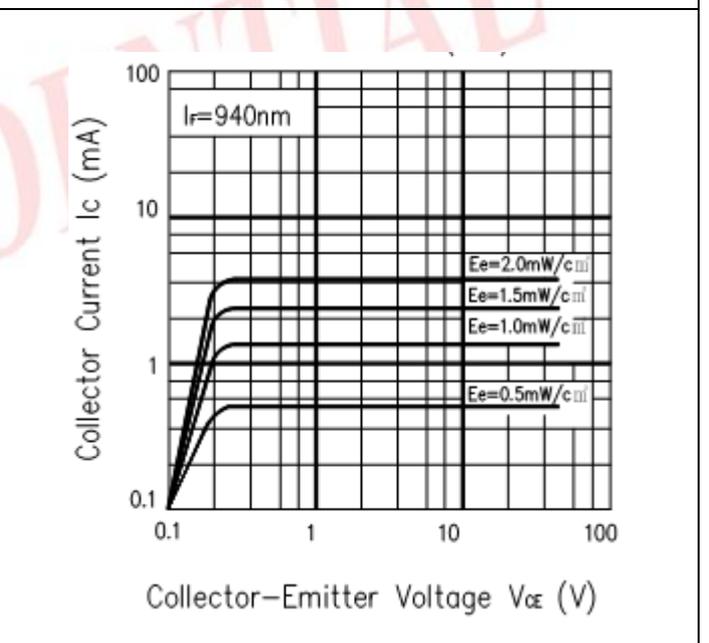
Collector Current vs. Irradiance



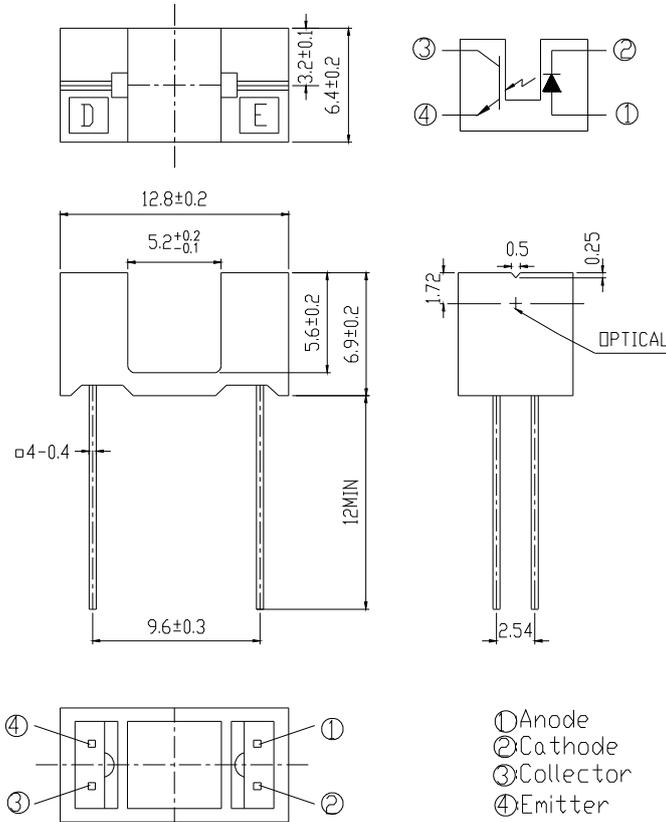
Spectral Sensitivity



Collector Current vs. Collector-emitter Voltage



Package Dimension



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
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**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 <sub>c(on)</sub> 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 <sub>CE</sub> =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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