

## Opto Interrupter ITR20001/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
- Compliance with EU REACH
- Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm)

### Description

- The ITR20001/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 only . This is the normal situation. But when an reflecting object close to ITR, phototransistor receives the reflecting radiation .For additional component information, please refer to IR and PT.

### Applications

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

**Device Selection Guide**

Device No.	Chip Materials	Lens Color
IR	GaAlAs	Water clear
PT	Silicon	Black

**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 ≤ 100μs, Duty cycle=1%	I <sub>FP</sub>	1	A
Output	Collector Power Dissipation	Pd	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	-40~+85	°C
Storage Temperature		Tstg	-40~+85	°C
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		Tsol	260	°C

(\*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	$V_F$	---	1.2	1.5	V	$I_F=20\text{mA}$
	Reverse Current	$I_R$	---	---	10	$\mu\text{A}$	$V_R=5\text{V}$
	Peak Wavelength	$\lambda_P$	---	940	---	nm	$I_F=20\text{mA}$
Output	Dark Current	$I_{CEO}$	---	---	100	nA	$V_{CE}=5\text{V}, E_e=0\text{mW/cm}^2$
	C-E Saturation Voltage	$V_{CE(sat)}$	---	---	0.4	V	$I_C=2\text{mA}$ $E_e=1\text{mW/cm}^2$
Transfer Characteristics	Collect Current	$I_{C(ON)}$	200	---	---	$\mu\text{A}$	$V_{CE}=5\text{V}, I_F=20\text{mA}$
		$I_{C(OFF)}$	---	---	2		
	Rise time	$t_r$	---	25	---	$\mu\text{sec}$	$V_{CE}=5\text{V}, I_C=100\mu\text{A}$ $R_L=100\Omega$
	Fall time	$t_f$	---	25	---	$\mu\text{sec}$	

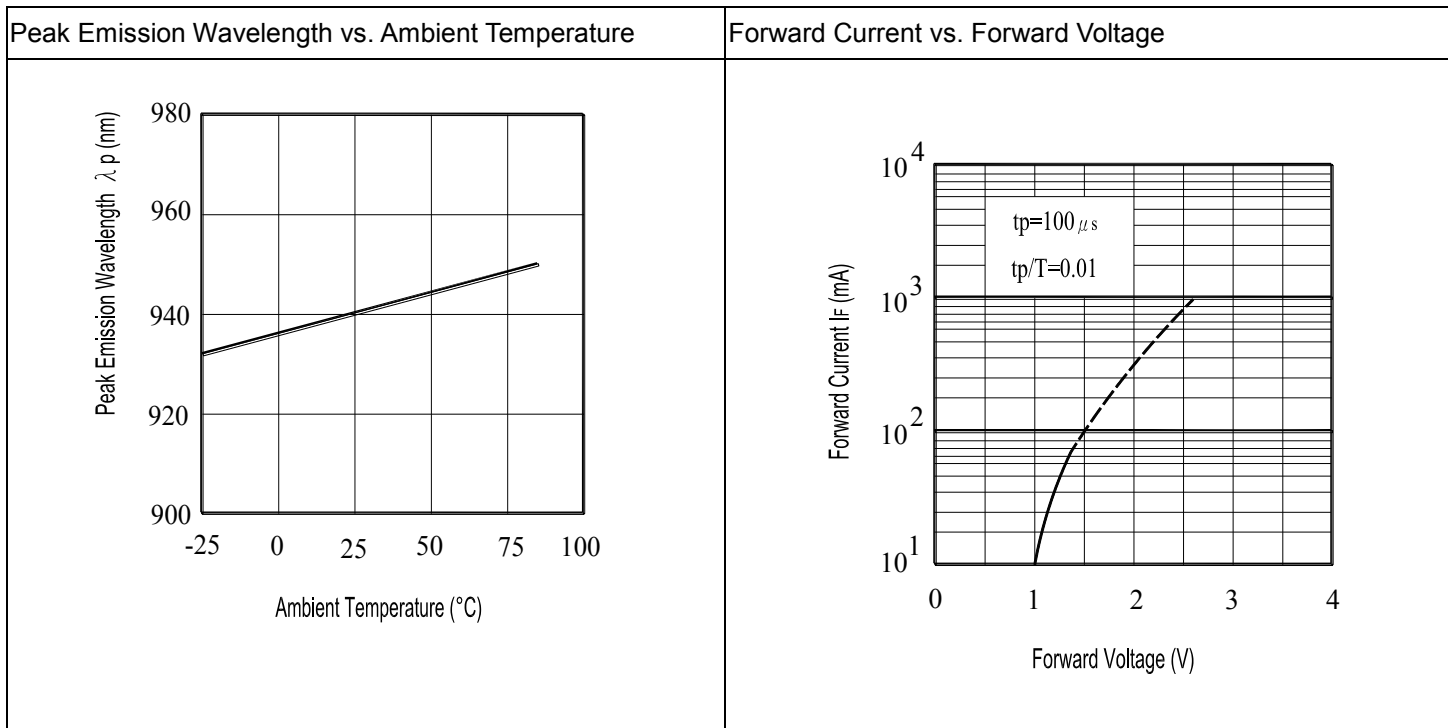
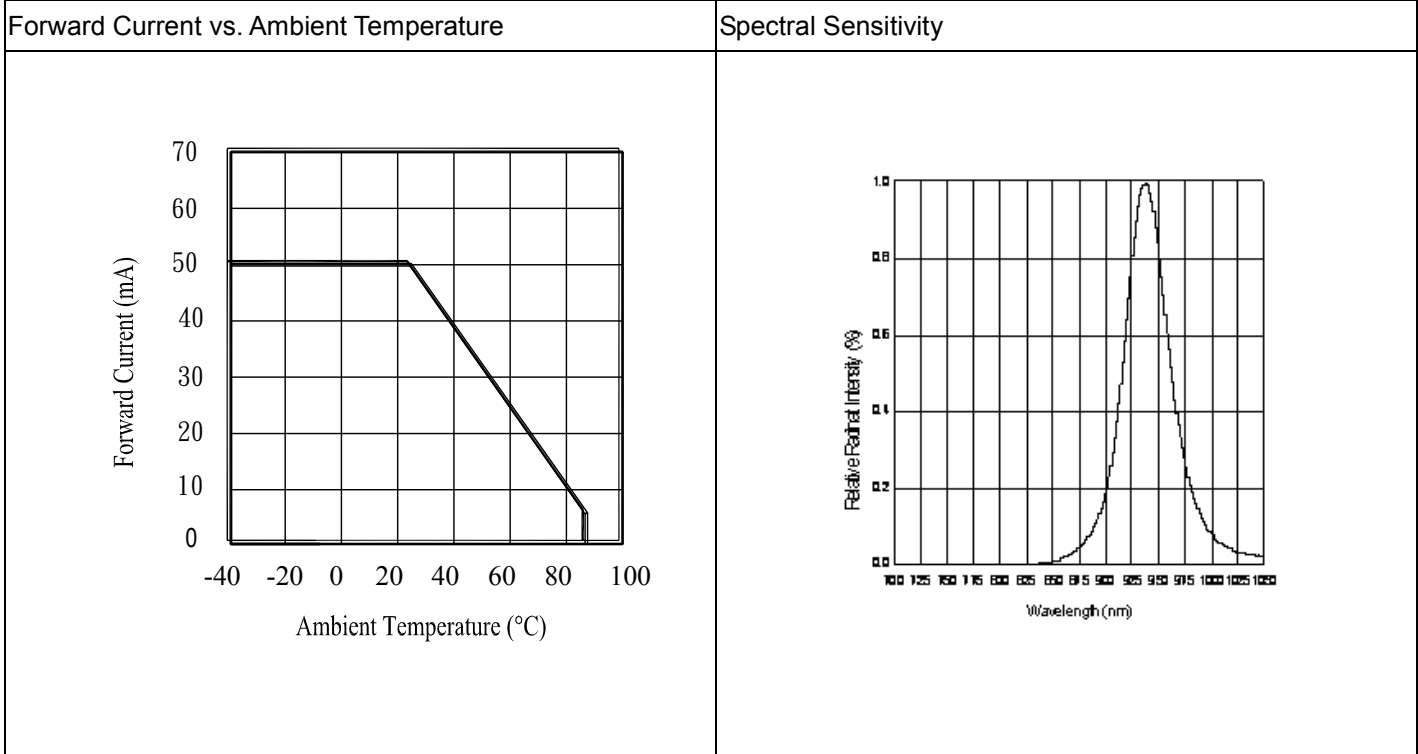
Note:

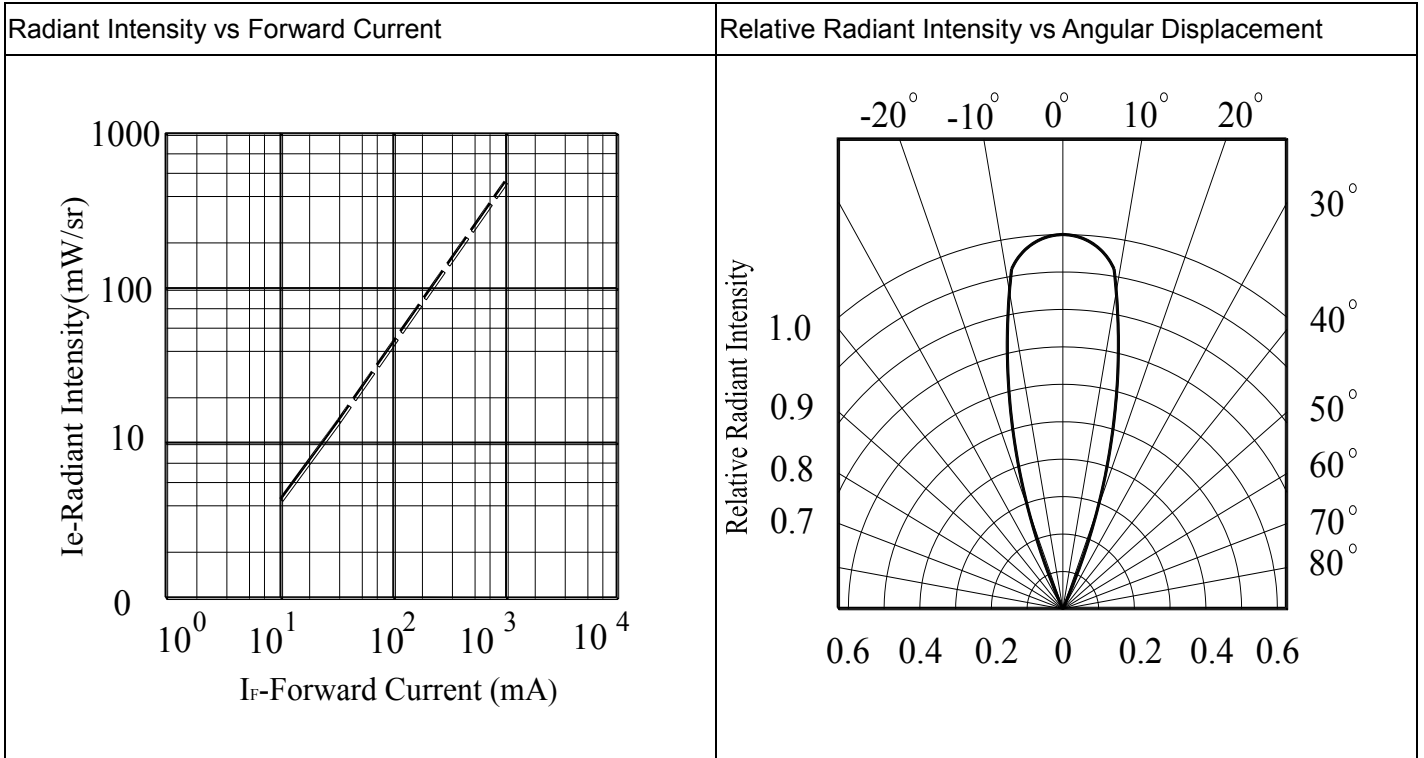
\*Measurement Uncertainty of Forward Voltage:  $\pm 0.1\text{V}$

\*Measurement Uncertainty of Luminous Intensity:  $\pm 10\%$

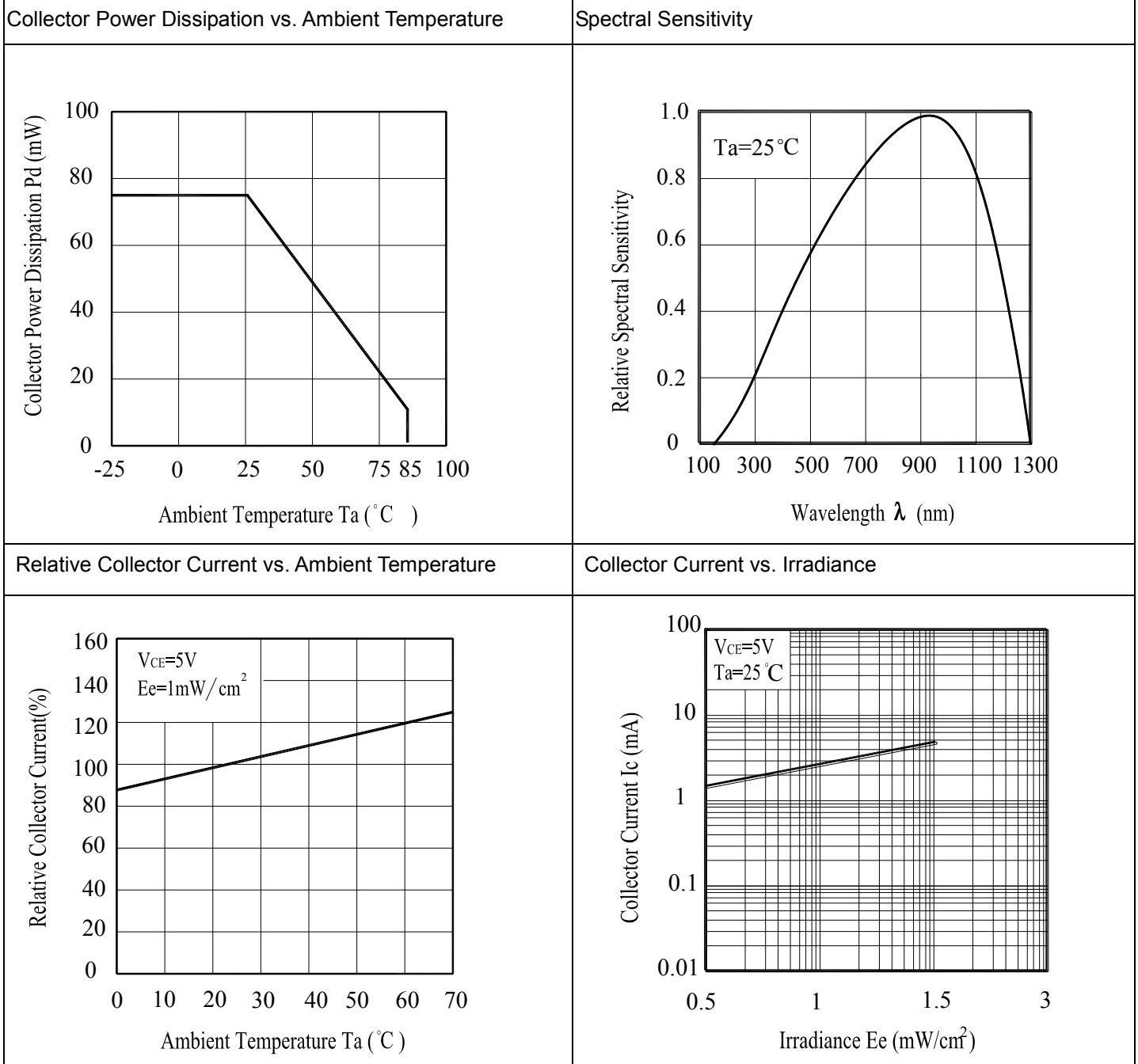
\*Measurement Uncertainty of Dominant Wavelength  $\pm 1.0\text{nm}$

Typical Electrical/Optical/Characteristics Curves for IR

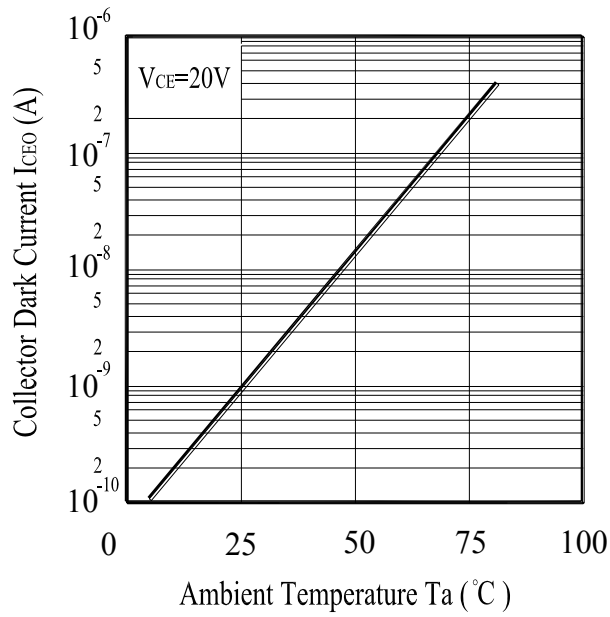




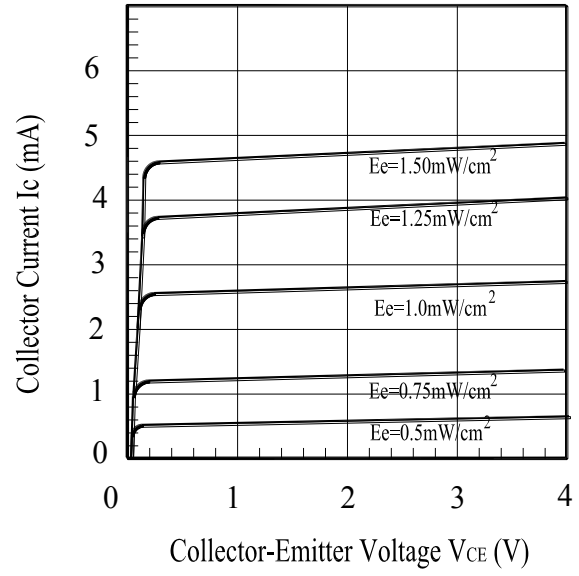
Typical Electrical/Optical/Characteristics Curves for PT



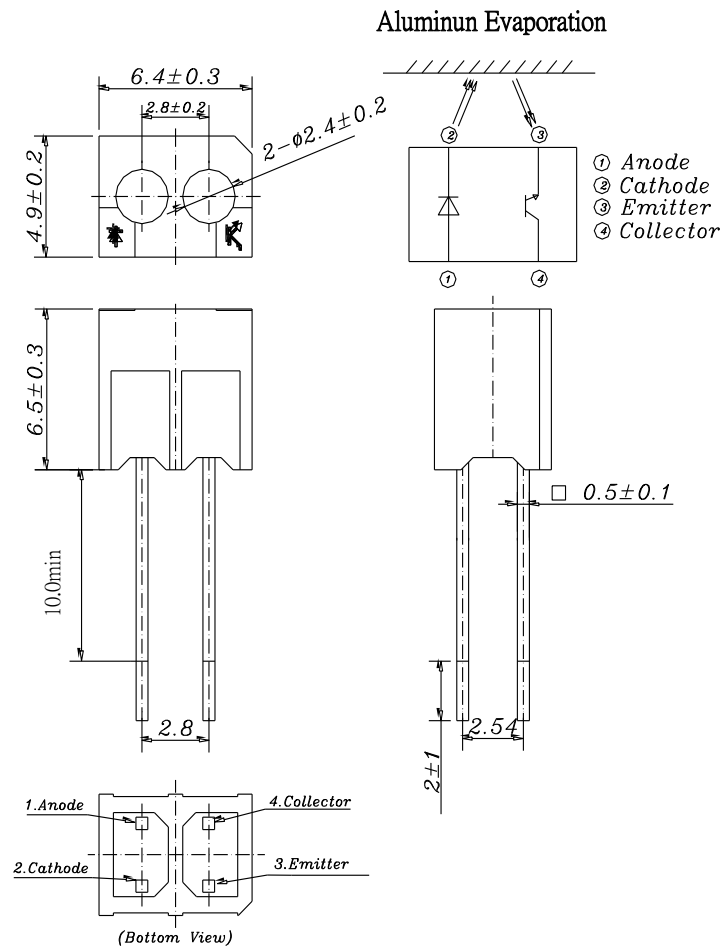
Collector Dark Current vs. Ambient Temperature



Collector Current vs. Collector-Emitter Voltage



## Package Dimension



Note: Tolerances unless dimensions  $\pm 0.25$ mm



**Packing Quantity Specification**

- 1.200PCS/1Bag, 6Bags/1Box
- 2.10Boxes/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

**DISCLAIMER**

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2. The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
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