DATASHEET

ITR8105

Features

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

Description

The **ITR8105** 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 object is in between, phototransistor could not receive the radiation.

Applications

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

Device Selection Guide

Device No.	Chip Material	LENS COLOR
IR	GaAlAs	Water Clear
PT	Silicon	Water Clear

Absolute Maximum Ratings (Ta=25℃)

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25℃ 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	B V_{CEO}	30	V
	Emitter-Collector Voltage	B V_{ECO}	5	V
Operating Temperature		Topr	-25~+85	℃
Storage Temperature		Tstg	-40~+85	℃
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		Tsol	260	℃

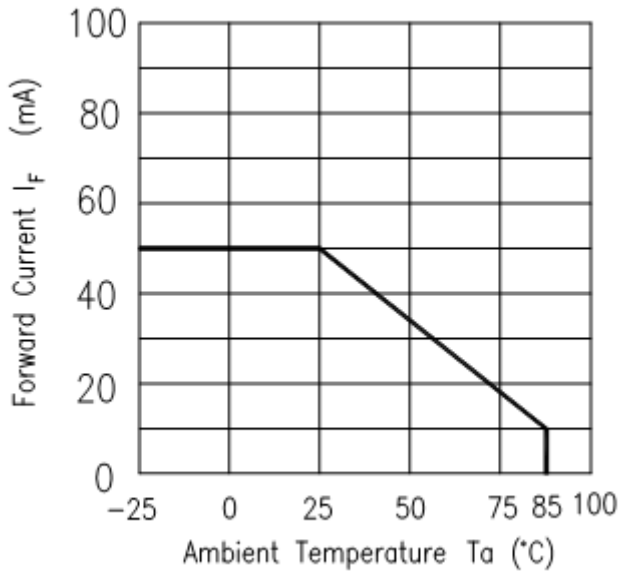
(＊1) tw=100 μsec., T=10 msec. (＊2) t=5 Sec

Electro-Optical Characteristics (Ta=25℃)

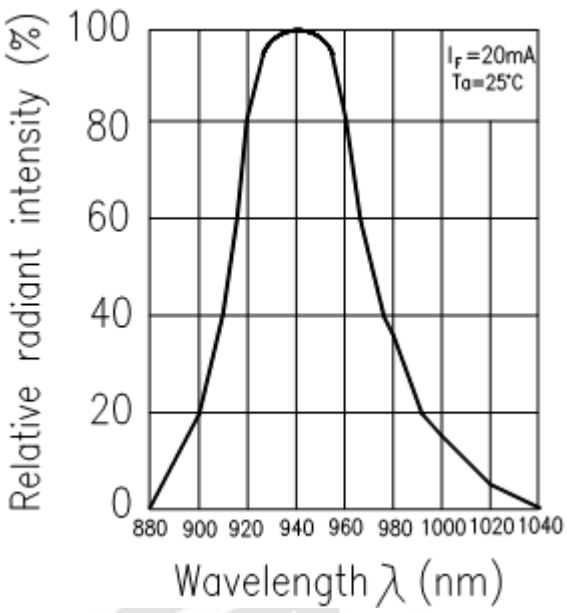
Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V_F	---	1.2	1.6	V	I_F=20mA
	Reverse Current	I_R	---	---	10	μ A	V_R=5V
	Peak Wavelength	λ_P	---	940	---	nm	I_F=20mA
	View Angle	2θ1/2	---	40	---	Deg	I_F=20mA
Output	Dark Current	I_{CEO}	---	---	100	nA	V_{CE}=20V,Ee=0mW/cm^2
	C-E Saturation Voltage	V_{CE}(sat)	---	---	0.4	V	I_C=2mA Ee=1mW/cm^2
Transfer Characteristics	Collect Current	I_C(ON)	0.9	---	15	mA	V_{CE}=5V I_F=20mA
	Rise time	t_r	---	15	---	μ sec	V_{CE}=5V I_C=1mA R_L=1KΩ
	Fall time	t_f	---	15	---	μ sec	

Typical Electrical/Optical/Characteristics Curves for IR

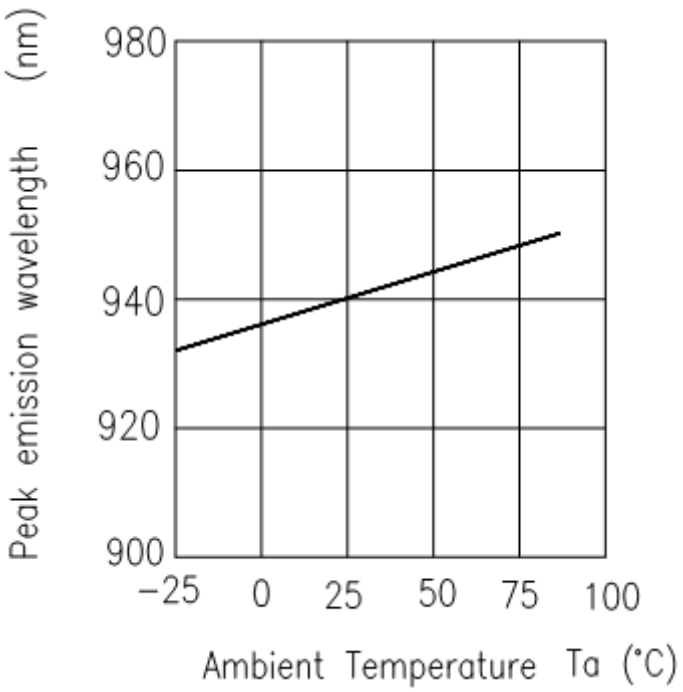
Forward Current vs. Ambient Temperature



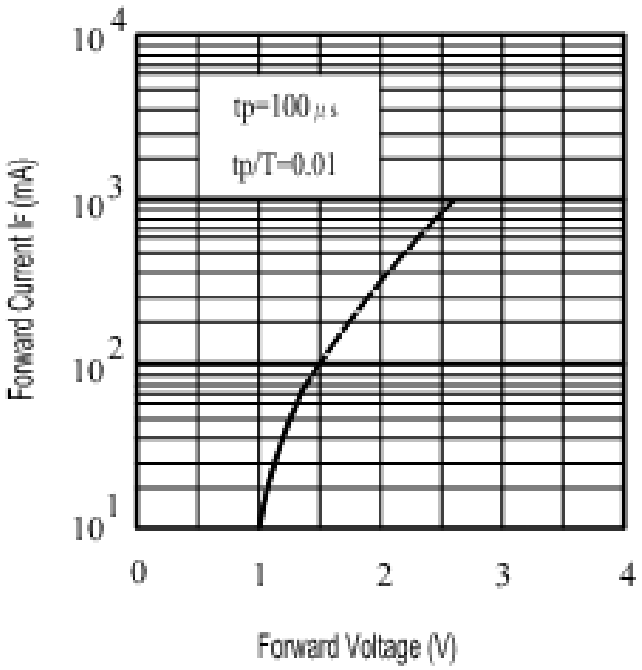
Spectral Distribution

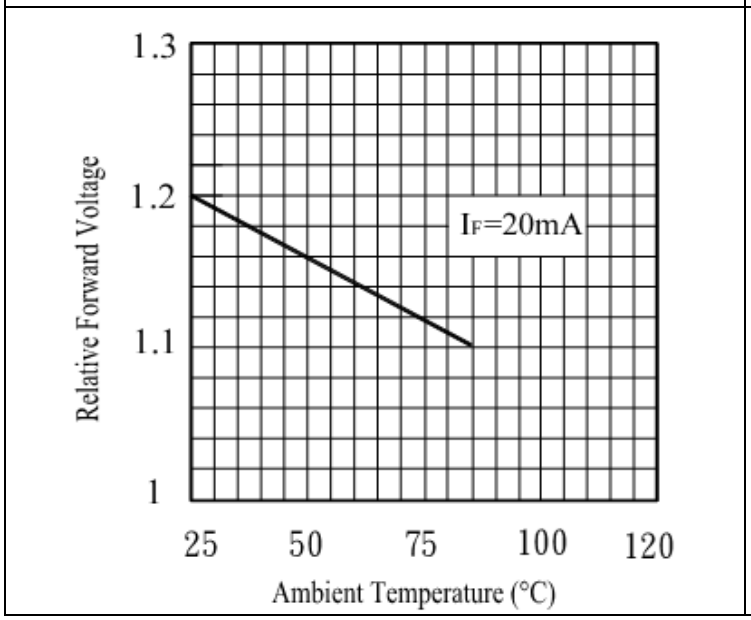
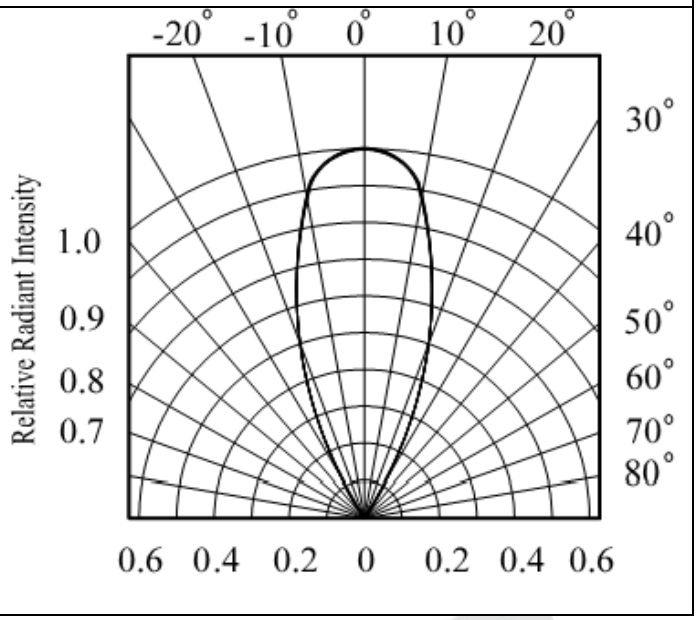


Peak Emission Wavelenght vs. Ambient Temperature

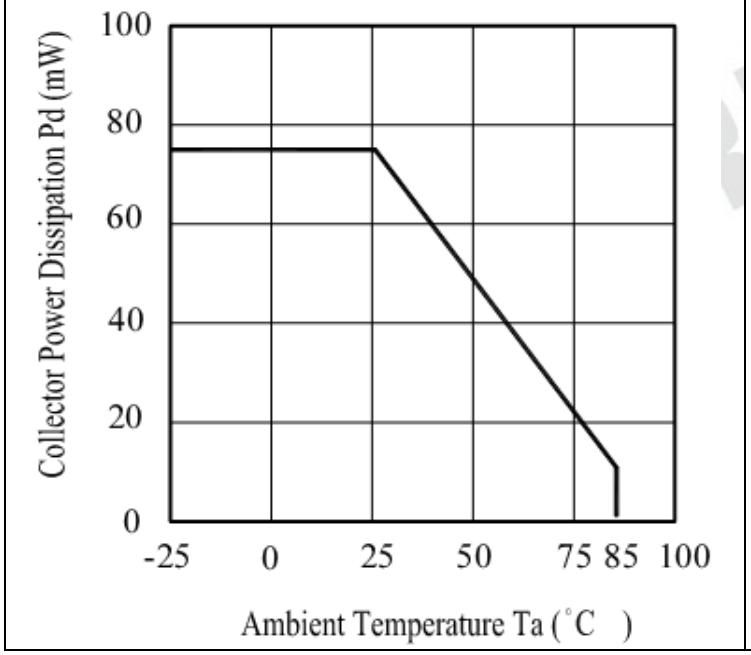
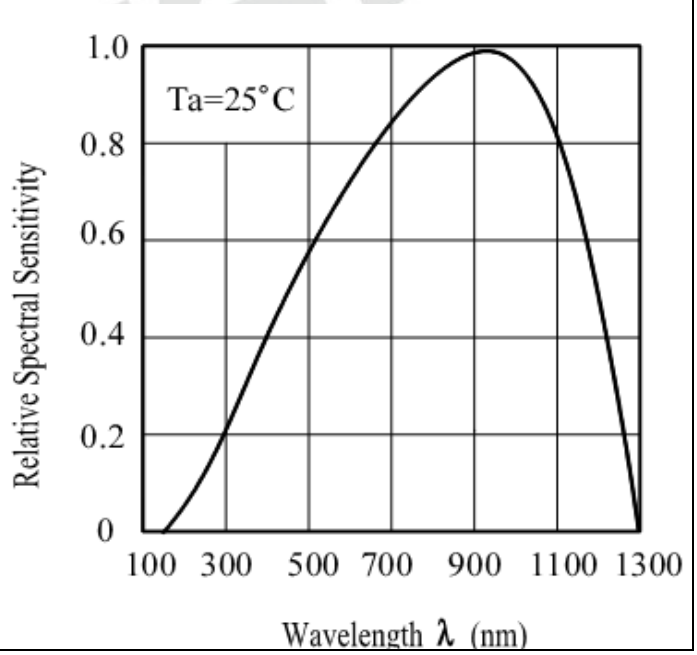


Forward Current vs. Forward Voltage

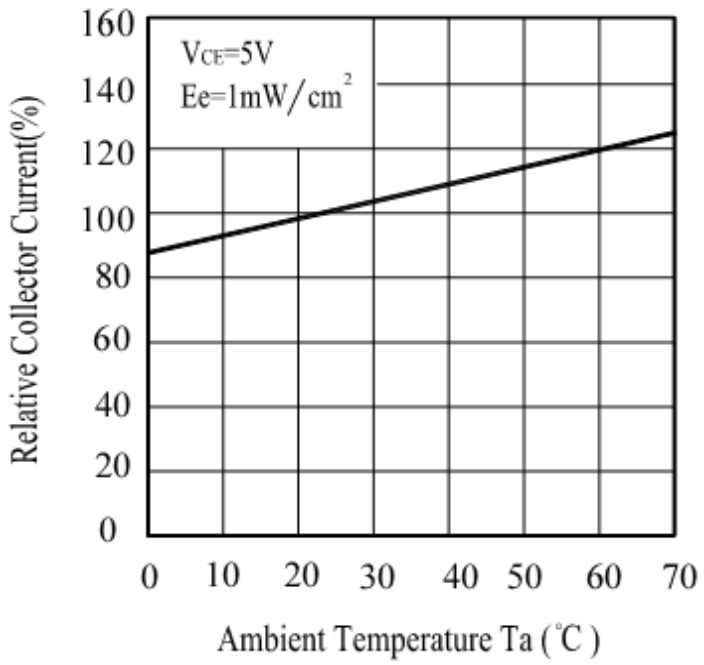


Forward Current vs. Ambient Temperature	Relative Radiant Intensity vs. Angular Displacement
	

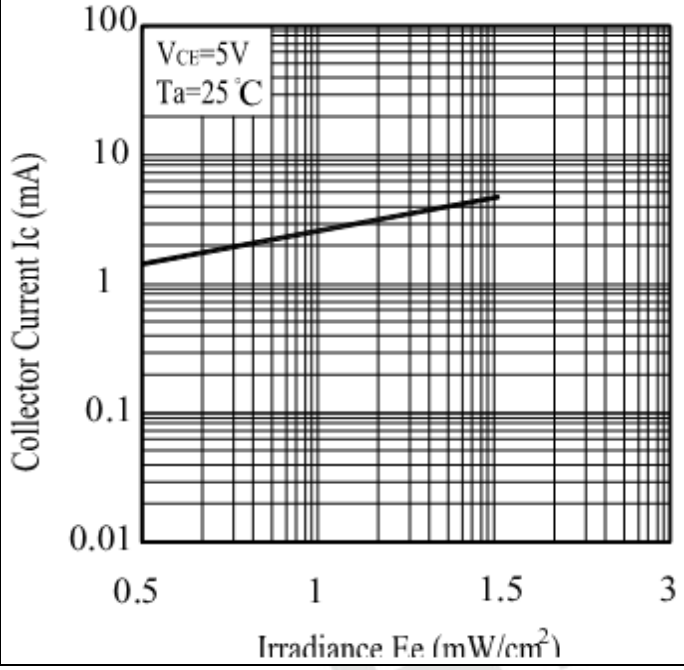
Typical Electro/Optical/Characteristics Curves for PT

Collector Power Dissipation vs. Ambient Temperature	Spectral Sensitivity
	

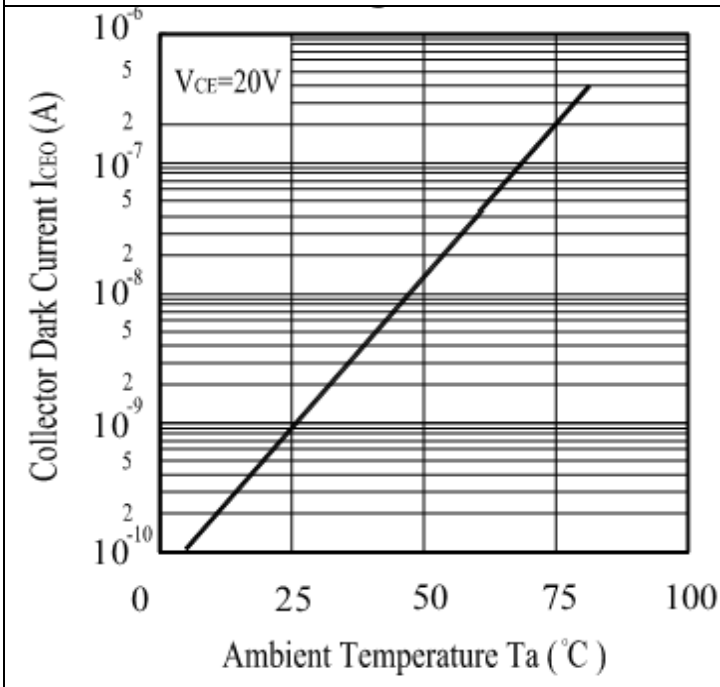
Relative Collector Current vs Ambient Temperature



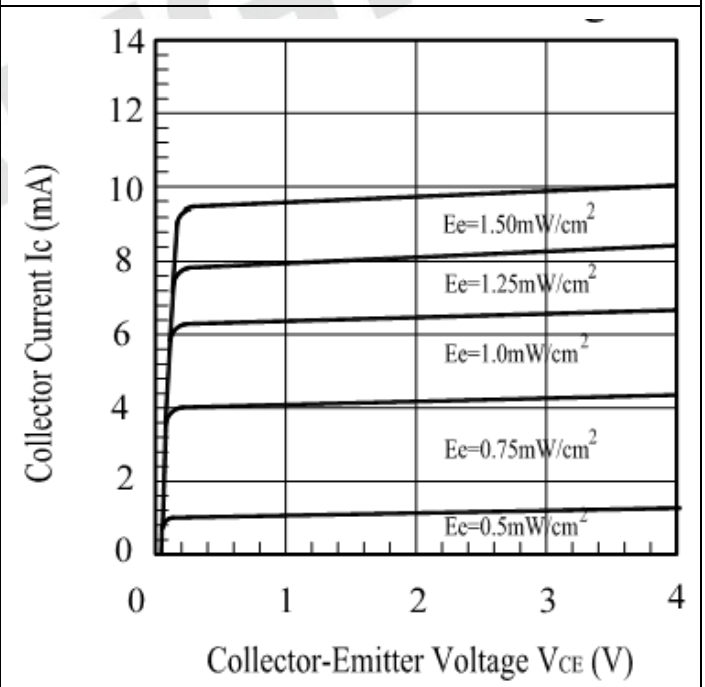
Collector Current vs. Irradiance



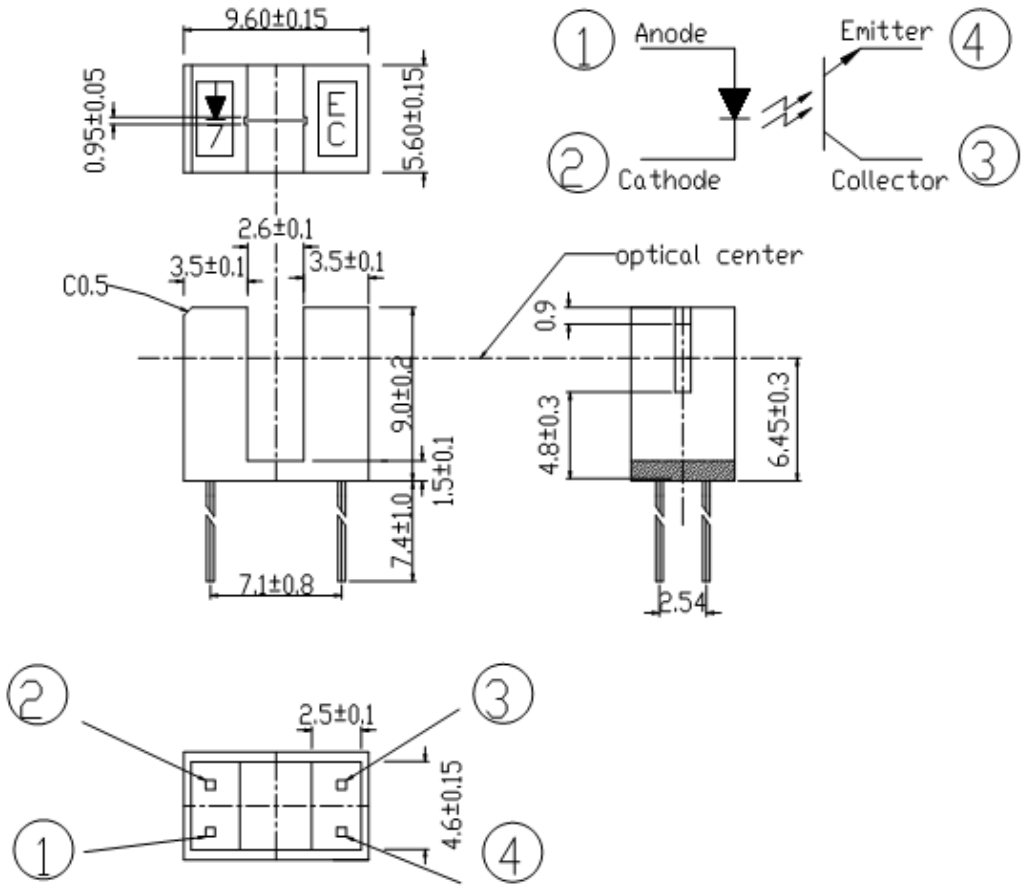
Collector Current vs. Ambient Temperatrue



Collector Current vs. Collector-emitter Voltage



Package Dimension



Notes:

1.All dimensions are in millimeters

2.Tolerances unless dimensions ±0.2mm

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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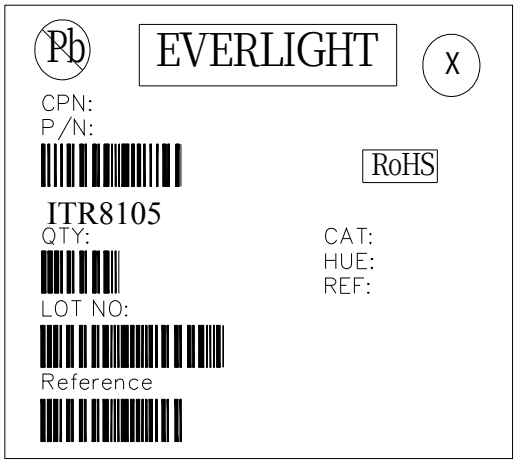
6.When using this product , please observe the absolute maximum ratings and the instructions for use outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.

Packing Quantity Specification
1. 150pcs/1Bag, 4Bags/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

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