

Technical Data Sheet Opto Interrupter EAITRBA6

Features

- Fast response time
- High analytic
- High sensitivity
- Cut-off visible wavelength $\lambda_P=940\text{nm}$
- Pb Free
- This product itself will remain within RoHS compliant version.

Description

The **EAITRBA6** 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 IR234C/L110 and PT234-6B.

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	Black

Absolute Maximum Ratings (Ta=25°C)

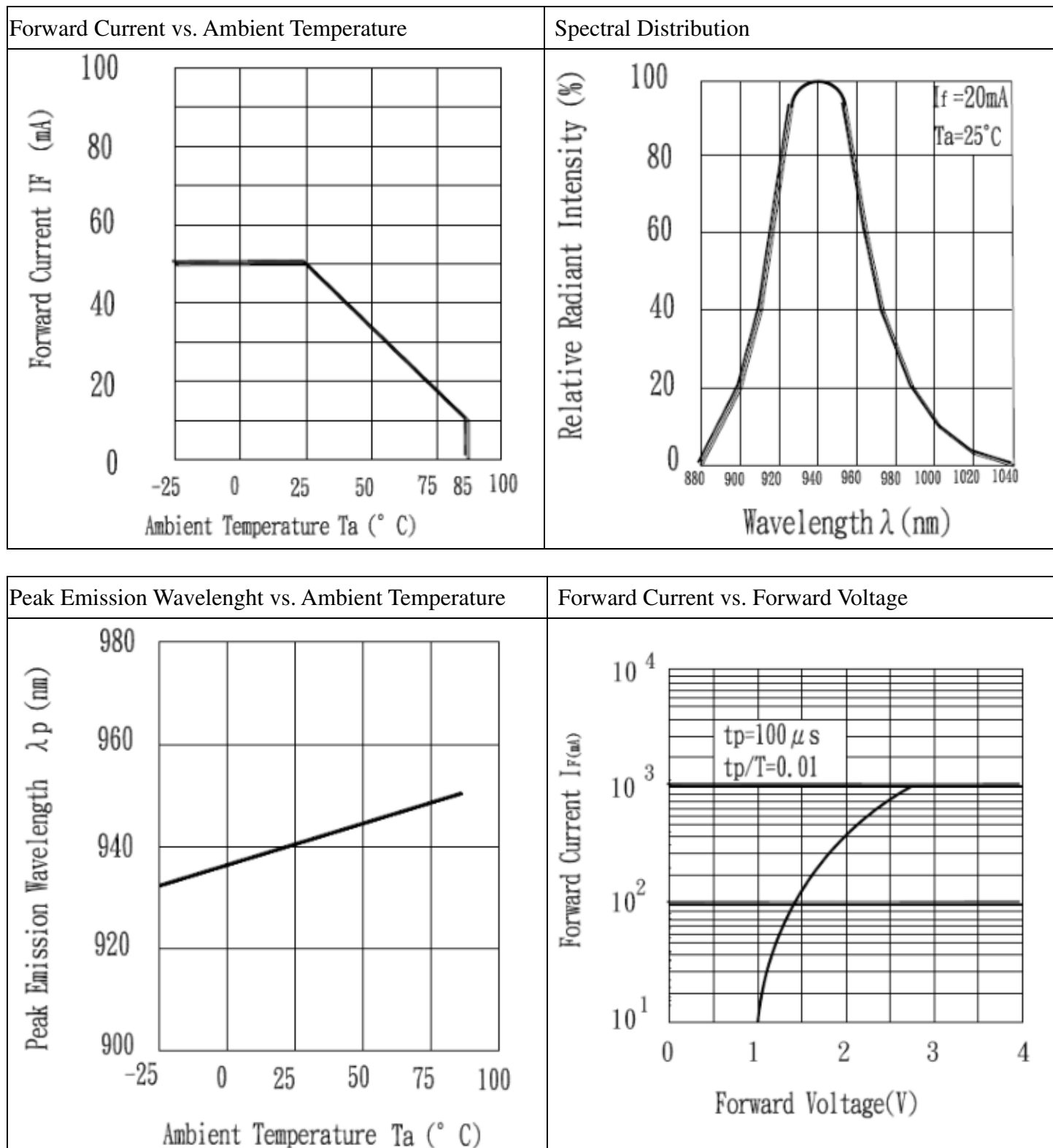
Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25°C Free Air Temperature	Pd	75	mW
	Reverse Voltage	V _R	5	V
	Forward Current	I _F	50	mA
	Peak Forward Current (*1) Pulse width ≤100μs, Duty cycle=1%	I _{FP}	1	A
Output	Collector Power Dissipation	P _C	75	mW
	Collector Current	I _C	20	mA
	Collector-Emitter Voltage	B V _{CEO}	30	V
	Emitter-Collector Voltage	B V _{ECO}	5	V
Operating Temperature		Topr	-25~+85	°C
Storage Temperature		Tstg	-40~+85	°C
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		Tsol	260	°C

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

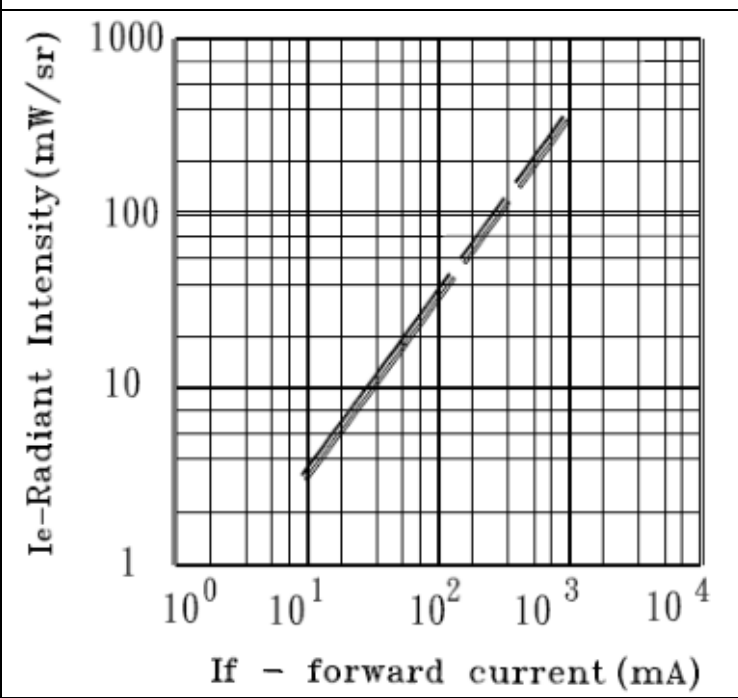
Electro-Optical Characteristics (Ta=25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Input	Forward Voltage	V _{F1}	-	1.2	1.5	V	I _F =20mA
		V _{F2}	-	1.4	1.8		I _F =100mA, tp=100μs, tp/T=0.01
		V _{F3}	-	2.6	4.0		I _F =1A, tp=100μs, tp/T=0.01
	Reverse Current	I _R	-	-	10	μA	V _R =5V
	Peak Wavelength	λ _p	-	940	-	nm	I _F =20mA
	View Angle	2θ1/2	-	35	-	Deg	I _F =20mA
Output	Dark Current	I _{CEO}	-	-	100	nA	V _{CE} =5V, Ee=0mW/cm ²
	C-E Saturation Voltage	V _{CE(sat)}	-	-	0.4	V	I _C =0.04mA, I _F =40mA
Collector Current(*3)		I _{C(ON)}	20	-	110	μA	V _{CE} =3V, I _F =35mA
Response Time	Rise Time	t _R	-	15	-	μs	V _{CE} =5V, I _C =100μA, R _L =100Ω
	Fall Time	t _F	-	15	-	μs	

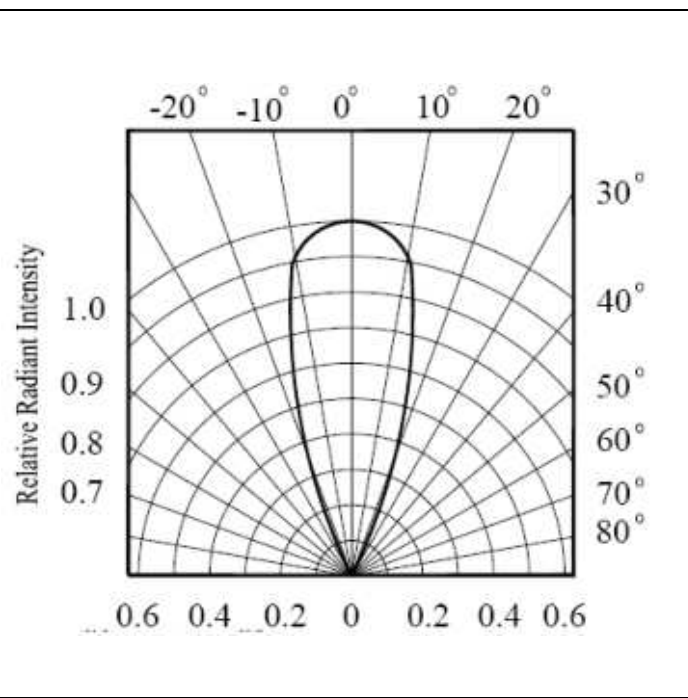
Typical Electrical/Optical/Characteristics Curves for IR



Relative Intensity vs. Forward Current

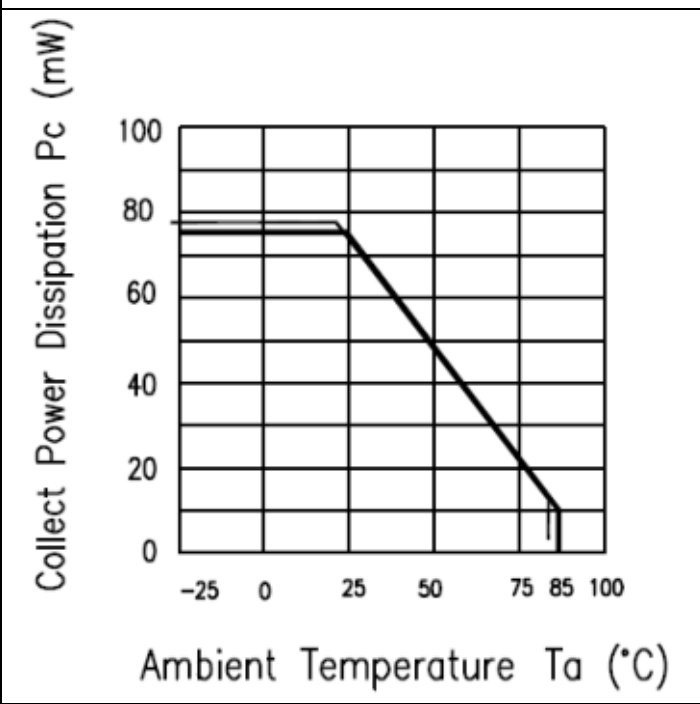


Relative Radiant Intensity

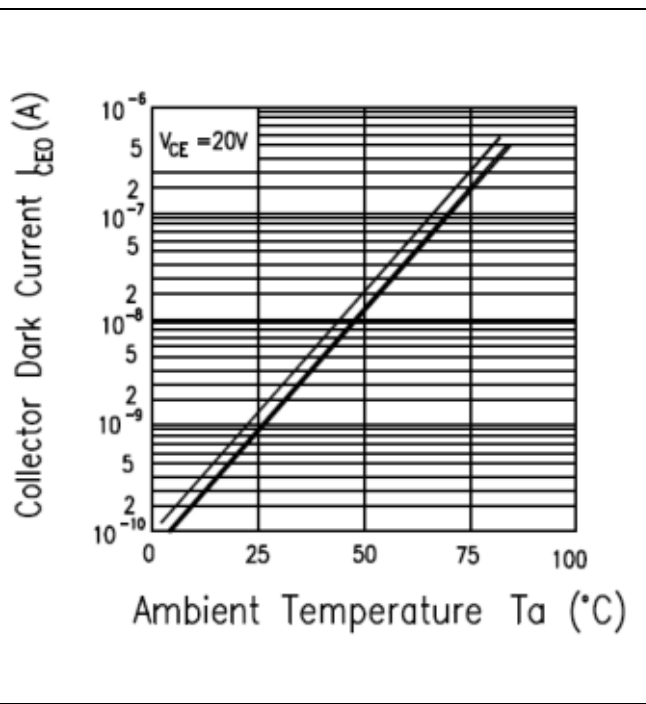


Typical Electro/Optical/Characteristics Curves for PT

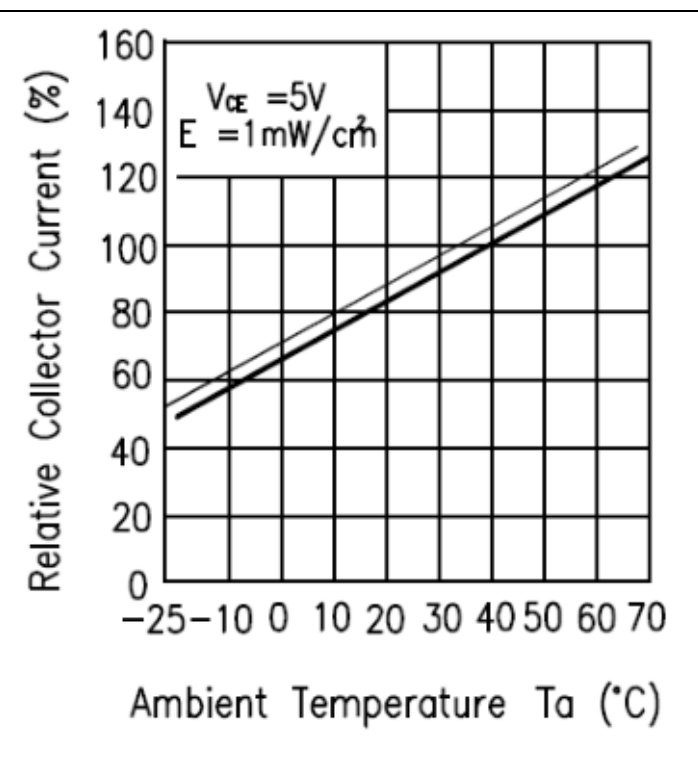
Collector Power Dissipation vs. Ambient Temperature



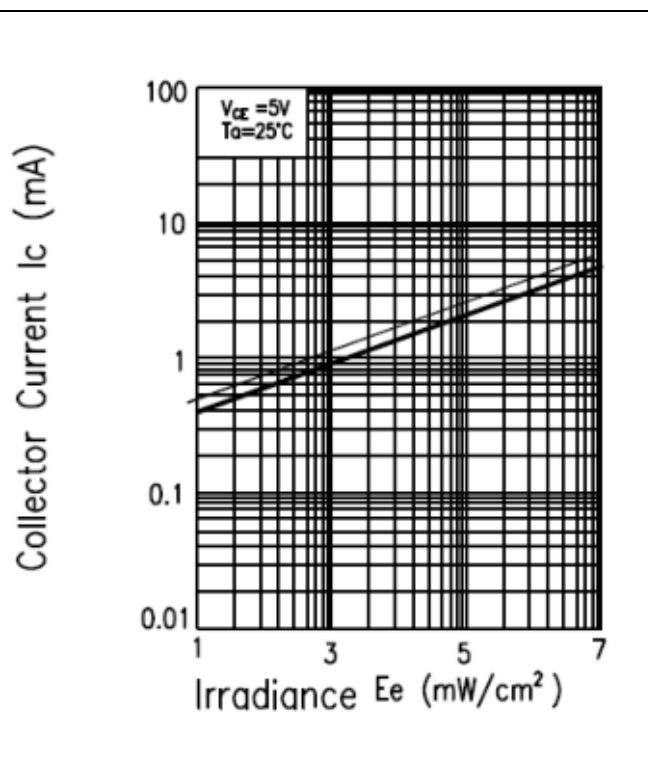
Collector Dark Current vs. Ambient Temperature



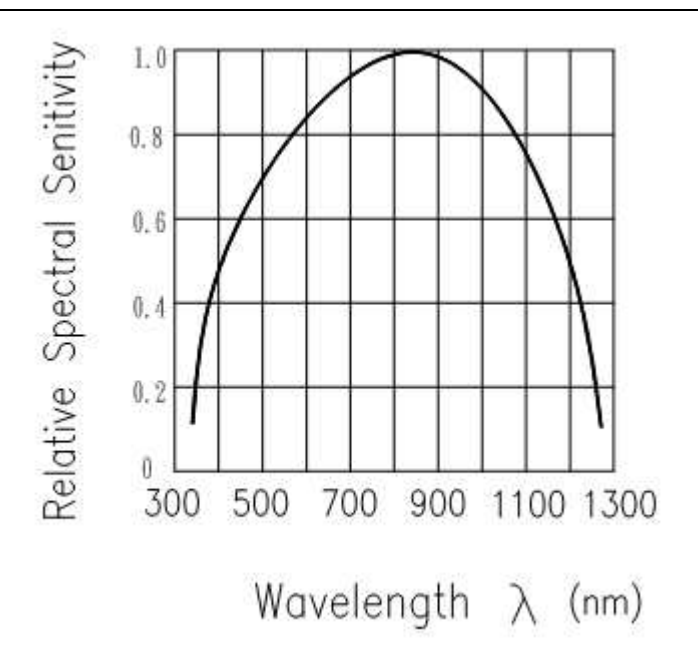
Relative Collector Current vs. Ambient Temperature



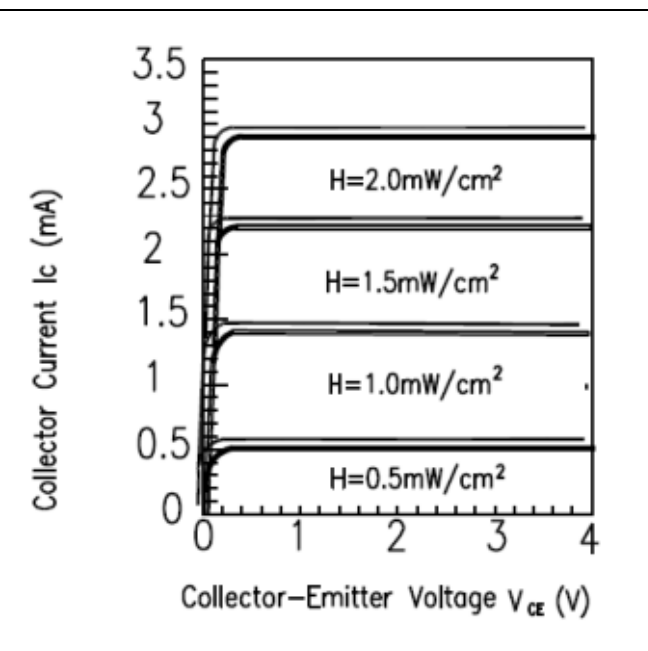
Collector Current vs. Irradiance



Spectral Sensitivity



Collector Current vs. Collector-emitter Voltage



Reliability Test Item And Condition

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

Confidence level : 90%

LTPD : 10%

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

① Anode
② Cathode
③ Emitter
④ Collector

Packing Quantity Specification

1. 100PCS/1Bag, 5Bag/1Box
2. 10Boxes/1Carton

Label Form Specification

The label form is rectangular with a white background. At the top left is a circular logo with 'Pb' inside. To its right is a rectangular box containing the text 'EVERLIGHT AMERICA'. Further right is a small circle. Below the logo, the text 'CPN: XXXXXXXXXXXX' is followed by a barcode. Below that, 'P/N: XXXXXXXXXXXX' is followed by another barcode. To the right of these is a small rectangular box containing 'RoHS'. Below the P/N barcode is a long string of 'X's. Below that, 'QTY: XXXX' is followed by a barcode. To the right of this is 'CAT: XXX'. Below the QTY barcode is 'LOT NO: XXXXXXXXXXXXXXXXXXXX' followed by a barcode. To the right of this is 'HUE: XXX'. Below the LOT NO barcode is 'REFERENCE: XXXXXXXXXXXX' followed by a barcode. To the right of this is 'REF: XXX'. At the bottom center, the text 'MADE IN TAIWAN' is printed.

- 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

Notes

1. Above specification may be changed without notice. EVERLIGHT Americas will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT Americas 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.
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