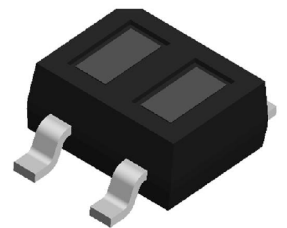


ITR1201SR10AR/TR

Features

- Fast response time
- High sensitivity
- Cut-Off visible wavelength
- Thin
- Compact
- Pb free
- This product itself will remain within RoHS compliant version.



Description

ITR1201SR10AR/TR is a light reflection switch which includes a GaAs IR-LED and a NPN photo-transistor with a high photosensitive receiver for short distance, operating in the infrared range.

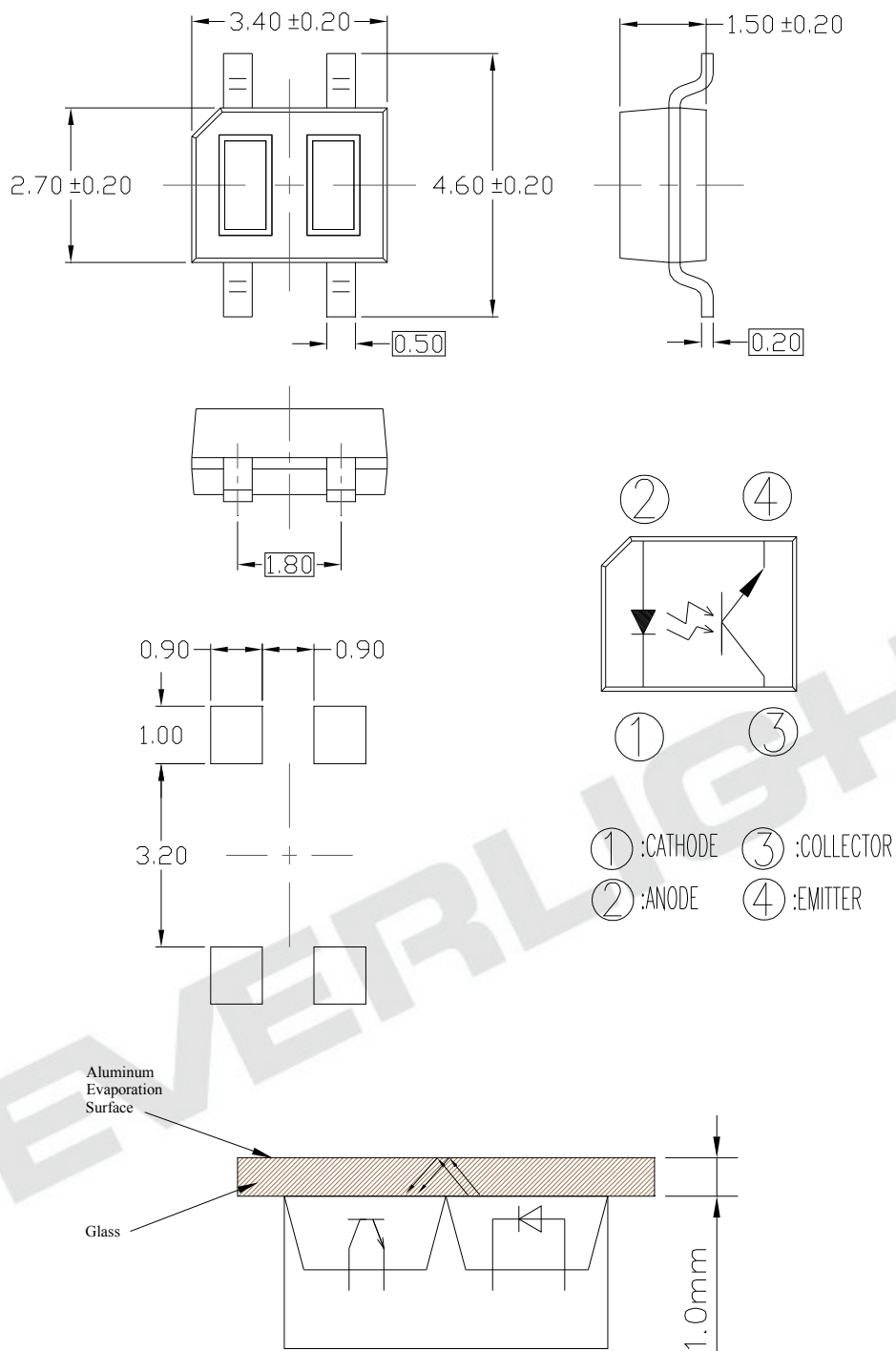
Applications

- Printer
- Switch Scanner
- Non-contact Switching

Device Selection Guide

Device No.	Chip Material
IR	AlGaAs
PT	Silicon

Package Dimensions



- Notes:**
1. All dimensions are in millimeters
 2. Tolerances: ± 0.15 mm

Absolute Maximum Ratings (Ta=25 °C)

Parameter		Symbol	Rating	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
Output	Collector Power Dissipation	P _C	75	mW
	Collector Current	I _C	10	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~+100	
Lead Soldering Temperature (*)		Tsol	260	

Notes: (*) t=5 Sec

Electro-Optical Characteristics (Ta=25 °C)

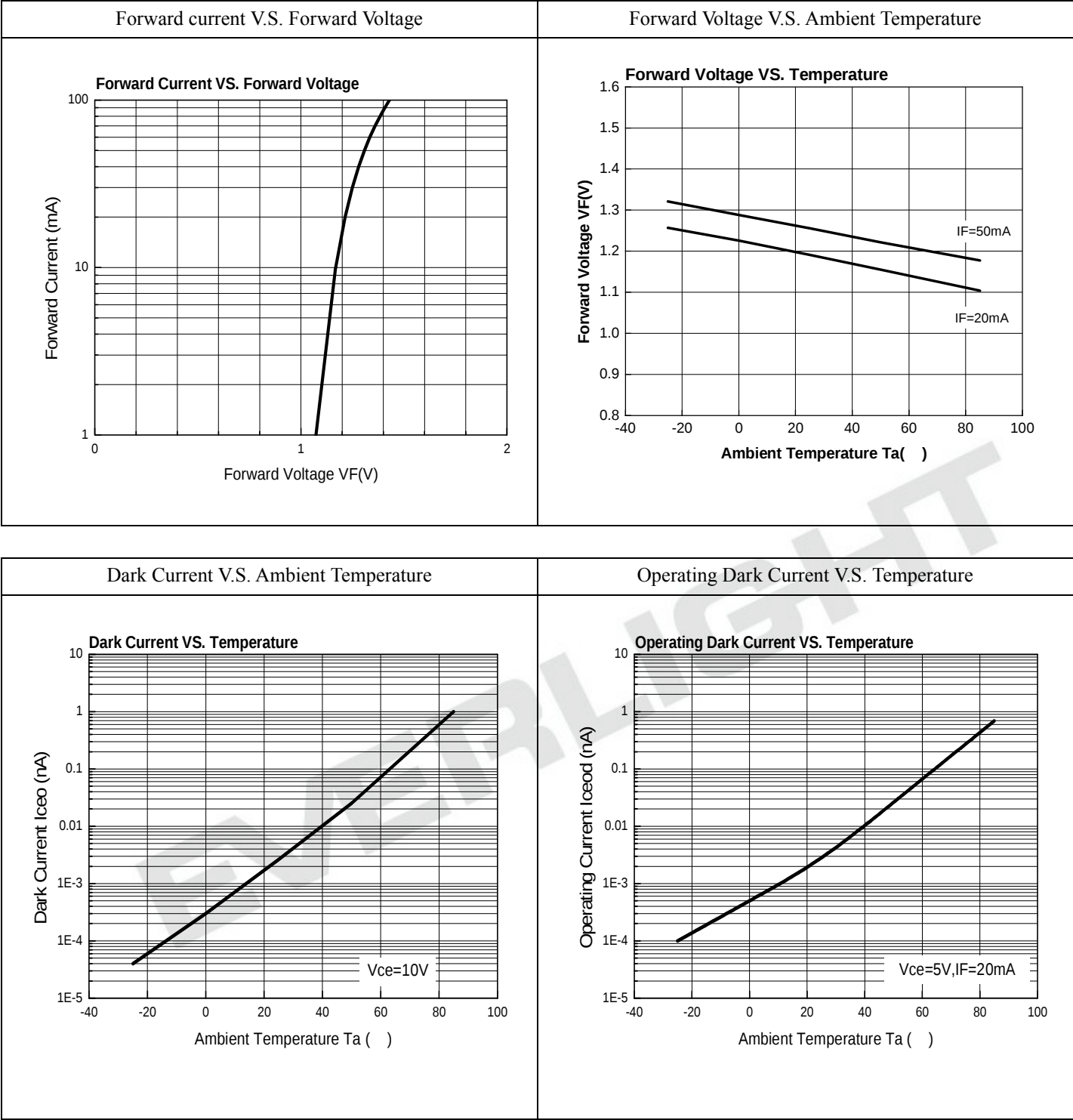
Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Input	Forward Voltage	V _F	1.1	1.2	1.4	V	I _F =20mA
	Reverse Current	I _R	---	---	10	μA	V _R =6V
	Peak Wavelength	λ _p	---	940	---	nm	I _F =20mA
Output	Dark Current	I _{CEO}	---	---	100	nA	V _{CE} =10V
Transfer Characteristics	Transfer Characteristics	I _{C(ON)}	100	---	1000	μA	V _{CE} =5V, I _F =20mA
	Operating Dark Current	I _{CEOD}	---	---	1	μA	V _{CE} =5V, I _F =20mA
	Rise time	t _r	---	15	---	μs	V _{CE} =5V I _C =1mA R _L =1KΩ
	Fall time	t _f	---	15	---	μs	

Rank

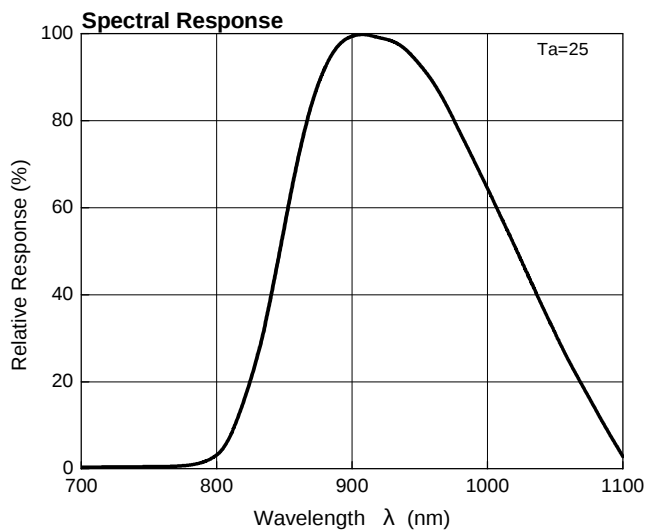
Conditions : I_F=20mA V_{CE}=5V Unit: μA

Bin number	Min	Max	Bin number	Min	Max
A1	100	300	C1	500	700
A2	200	400	C2	600	800
B1	300	500	D1	700	900
B2	400	600	D2	800	1000

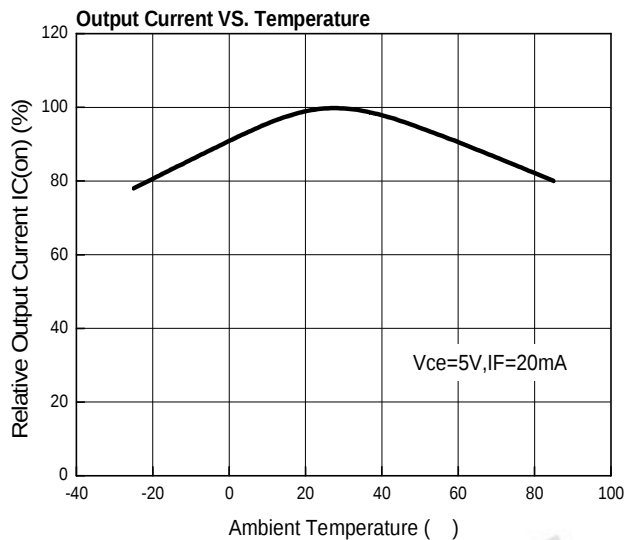
Typical Electrical/Optical/Characteristics Curves



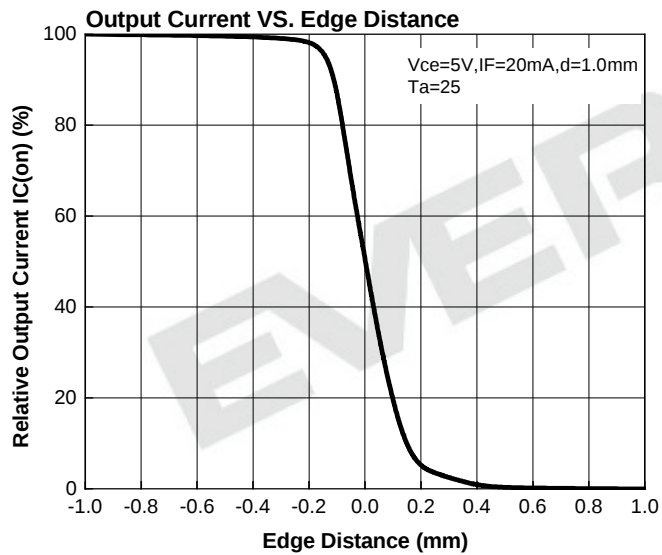
Relative Response V.S. Wavelength



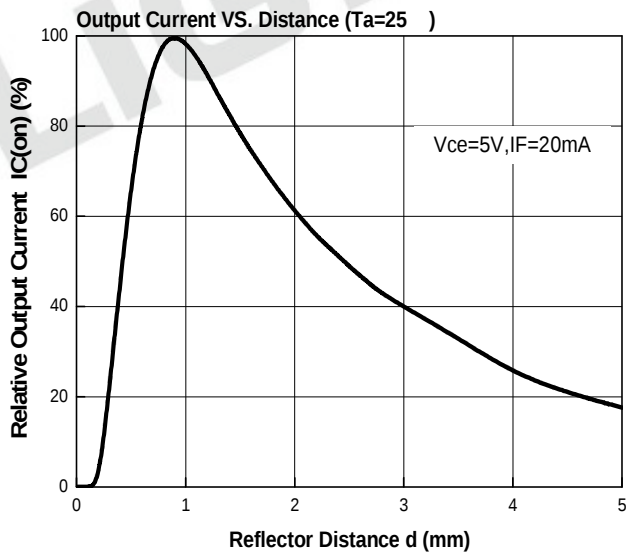
Relative Output Current V.S. Ambient Temperature



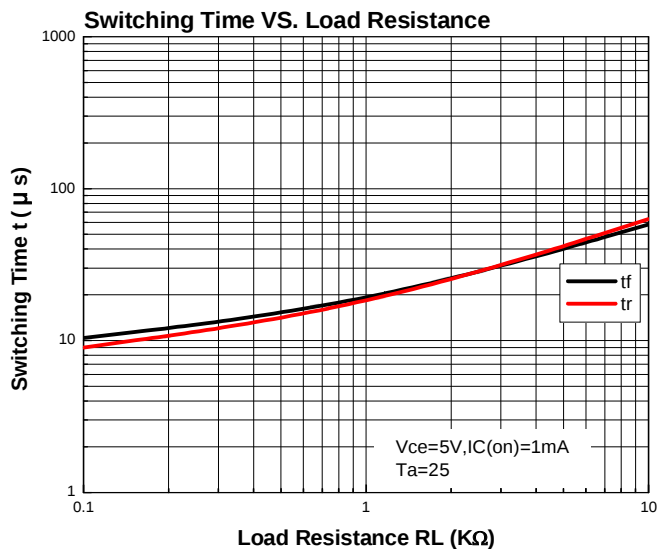
Output Current V.S. Edge Distance



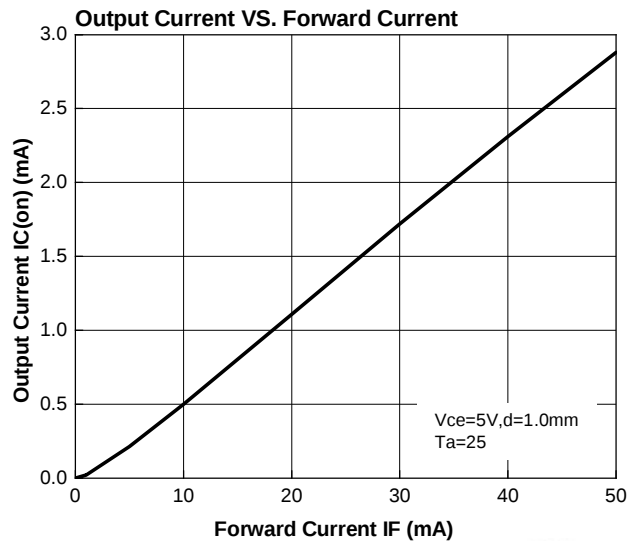
Output Current V.S. Reflector Distance



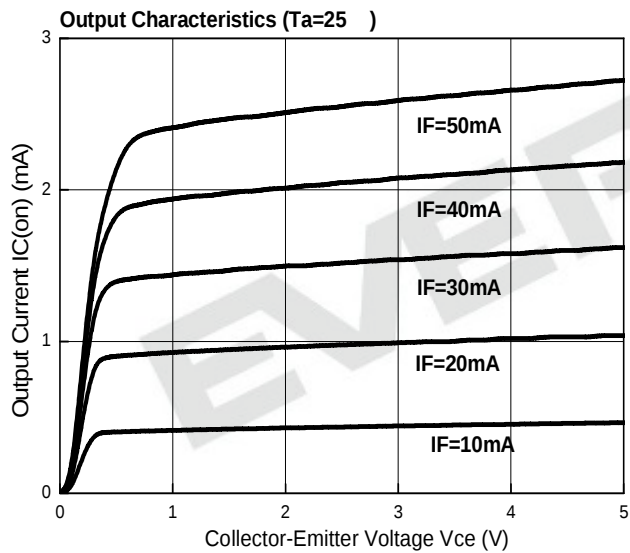
Switching Time V.S. Load Resistance



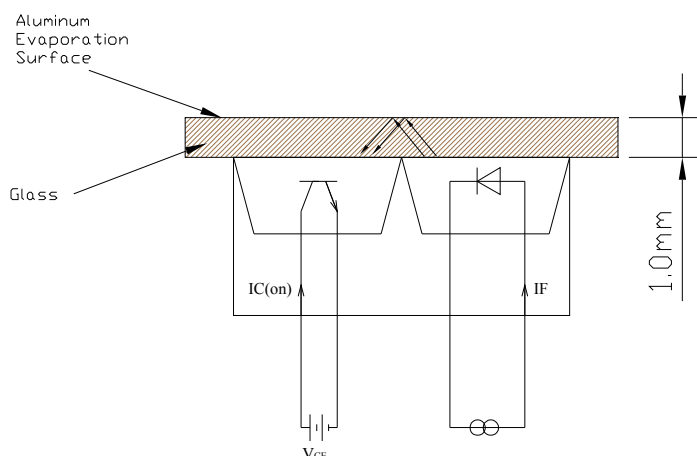
Output Current V.S. Forward Current



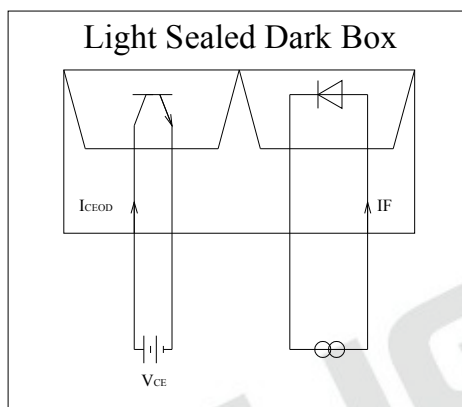
Output Characteristics



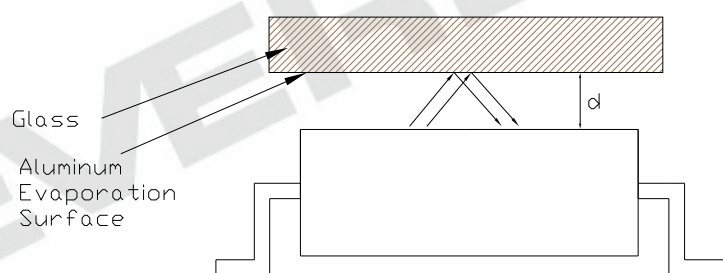
Measuring Specification For Output Current



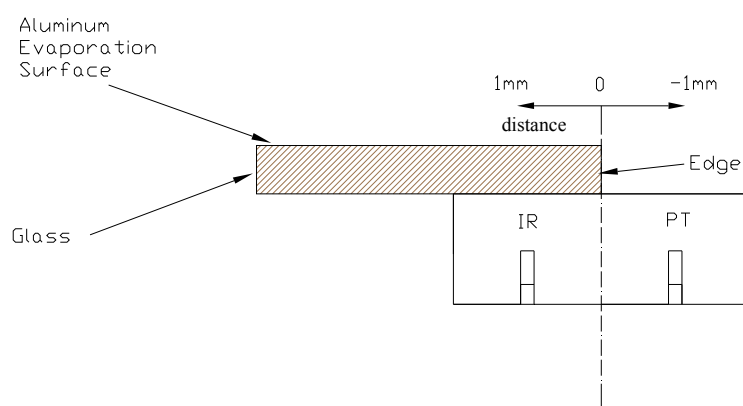
Measuring Circuit For Operating Dark Current



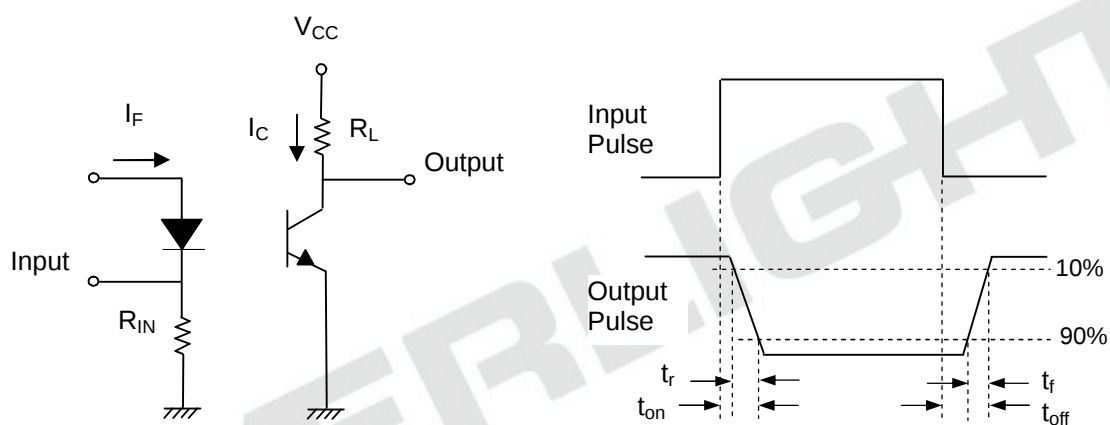
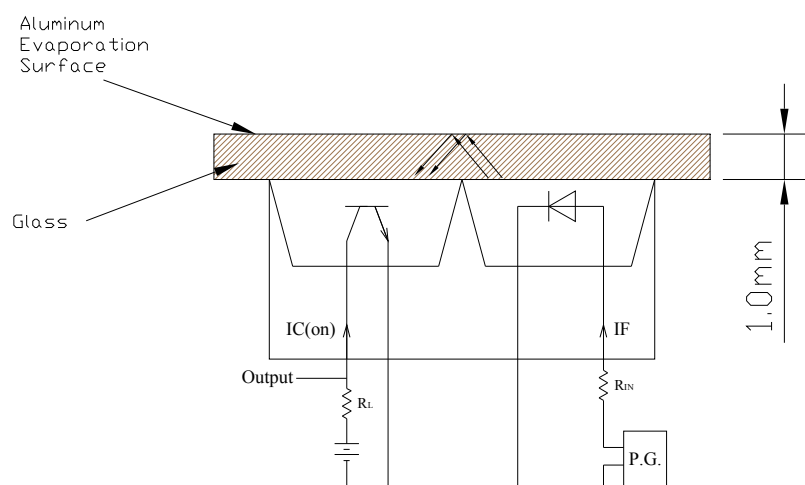
Measuring Specification For Reflector Response



Measuring Specification For Edge Response



Measuring Circuit For Response Time

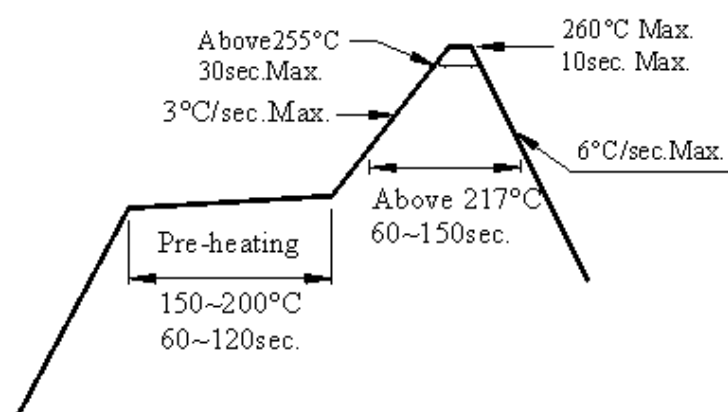


Recommended Method of Storage

1. Over-current-proof
Customer must apply resistors for protection , otherwise slight voltage shift will cause big current change (Burn out will happen).
2. Storage
 - 2.1. Do not open moisture proof bag before the products are ready to use.
 - 2.2. Before opening the package, the LEDs should be kept at 30 or less and 90%RH or less.
 - 2.3. The LEDs should be used within a year.
 - 2.4. After opening the package, the LEDs should be kept at 30 or less and 70%RH or less.
 - 2.5. The LEDs should be used within 168 hours (7 days) after opening the package.
 - 2.6. If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. Baking treatment : 60 ± 5 for 24 hours.

3. Soldering Condition

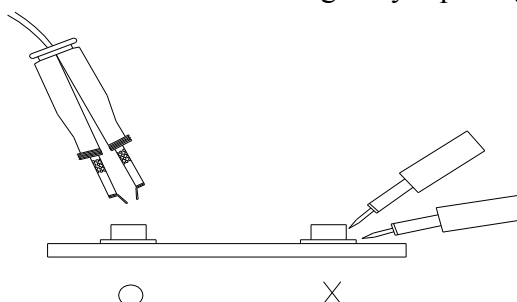
3.1. Pb-free solder temperature profile



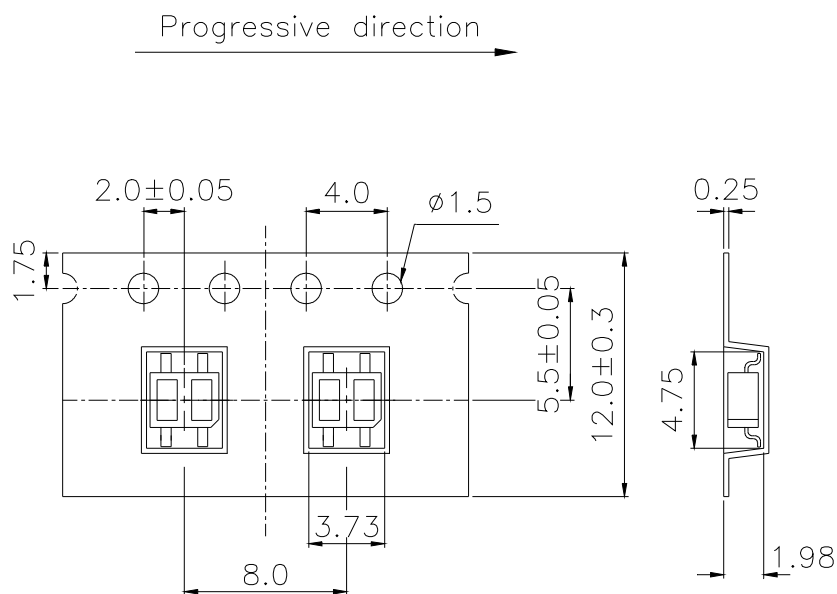
- 3.2. Reflow soldering should not be done more than two times.
- 3.3. When soldering, do not put stress on the LEDs during heating.
- 3.4. After soldering, do not warp the circuit board.

4. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

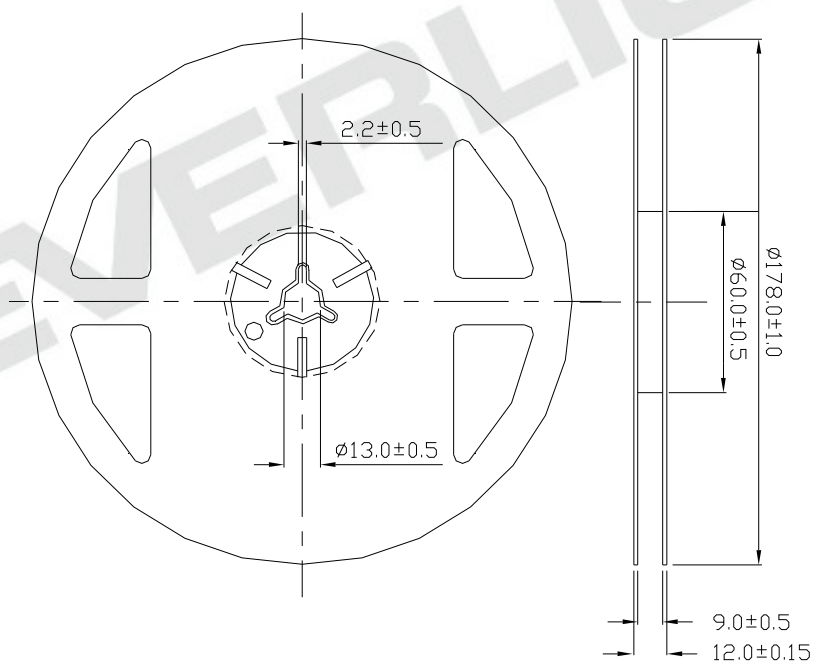


Taping Dimension

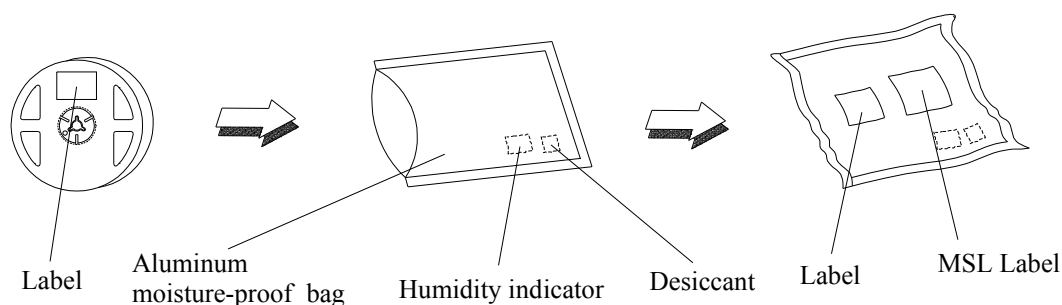


General Tolerance ± 0.1
UNIT:mm

Package Dimensions



Moisture Resistant Packaging



Packing Quantity Specification

- 1.1000 Pcs/ 1Reel
- 2.15 Reel /1 Box
- 3. Box/ 1 Carton

Label Form Specification

Pb **EVERLIGHT**

CPN :
P/N : XXXXXXXXXXXXX
XXXXXXXXXXXXXX

RoHS

QTY : XXX
XXXXXXXXXXXXXX

LOT NO : XXXXXXXXXXXX
XXXXXXXXXXXXXX

Reference : XXXXXXXX
XXXXXXXXXXXXXX

CAT : XXX
HUE : XXX
REF : XXX

CPN: Customer's Production Number
P/N : Production Number
QTY: Packing Quantity
CAT: Ranks
HUE: Peak Wavelength
REF: Reference
LOT No: Lot Number
MADE IN TAIWAN: Production Place

Note

- Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
- When using this product, please observe the absolute maximum ratings and the instructions for using 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.
- These specification sheets include materials protected under copyright of EVERLIGHT corporation. Please don't reproduce or cause anyone to reproduce them without EVERLIGHT's consent.

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