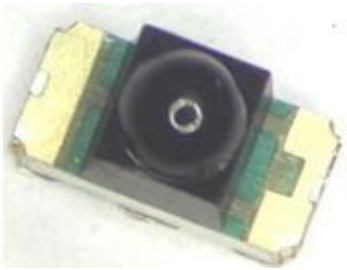
Photo Transistor ▪Top view 1206 Package

ST-1T226B-2T



Features

·1206 package

·Fast response time

·Top view LED

·Pb-free

·RoHS compliant

Description

The ST-1T226B-2T package has high efficacy, high power consumption, wide viewing angle and a compact form factor. These features make this package an ideal LED for all lighting applications.

Applications

· Miniature switch

· Counters and sorter

· Infrared applied system

· Position sensor

Device Selection Guide

Chip Materials	Resin Color
Silicon	Black

Absolute Maximum Ratings ($T_{Soldering}$=25℃)

Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Collector-Voltage	V_{ECO}	5	V
Collector Current	I_C	20	mA
Operating Temperature	T_{opr}	-25 ~ +85	℃
Storage Temperature	T_{stg}	-40 ~ +85	℃
Soldering Temperature	T_{sol}	260	℃
Power Dissipation at(or below) 25℃Free Air Temperature	Pc	75	mW

Electro-Optical Characteristics ($T_{Soldering}$=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Rang Of Spectral Band width	$\lambda_{0.5}$	730	---	1100	nm	---
Wavelength Of Peak Sensitivity	λ_P	---	940	---	nm	---
Collector-Emitter Breakdown Voltage	BV_{CEO}	60	---	---	V	I_C=500μA Ee=0mW/cm2
Emitter-Collector Breakdown Voltage	BV_{ECO}	7	---	---	V	I_E=50μA Ee=0mW/cm^2
Collector-Emitter Saturation Voltage	VCE(sat)	---	---	0.4	V	I_C=5mA Ee=1m W/cm^2
Collector Dark Current	I_{CEO}	---	---	150	nA	V_{CE}=70V Ee=0mW/cm^2
On State Collector Current	$I_{C(ON)}$	3	---	---	mA	V_{CE}=5V Ee=1mW /cm^2
Rise Time	t_r	---	15	---	μS	V_{CE}=5V I_C=1mA R_L=1000Ω
Fall Time	tf	---	15	---		

Typical Electro-Optical Characteristics Curves

Fig.1-Collector Power Disspation vs. Ambient Temperature

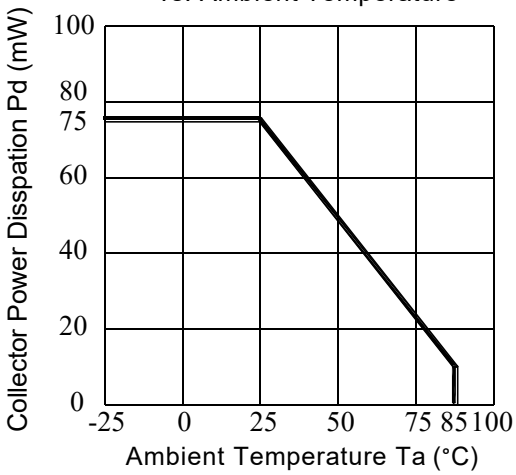


Fig.2-Spectral Sensitivity

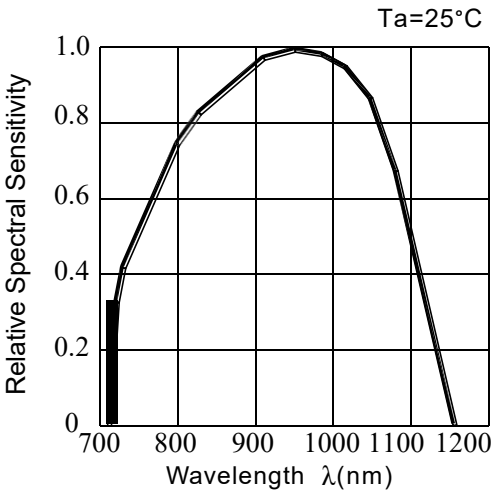


Fig.3-Relative Collector Current vs. Ambient Temperture

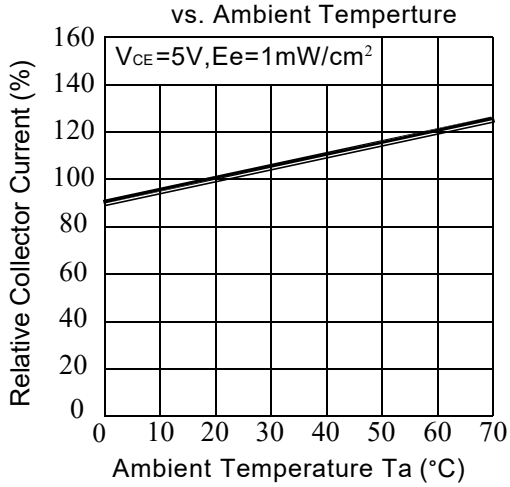


Fig.4-Collector Current vs.Irradiance

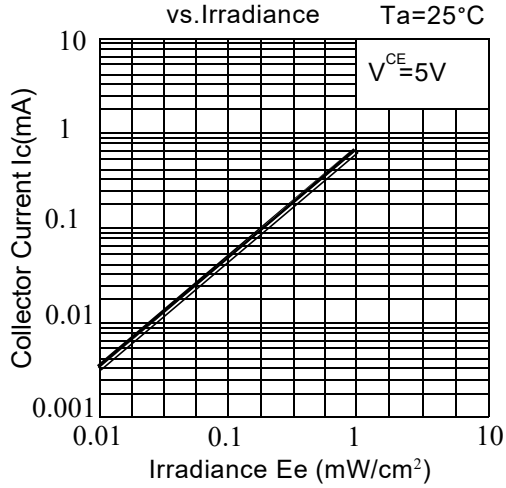


Fig.5-Collector Dark Collector Current vs.Ambient Temperture

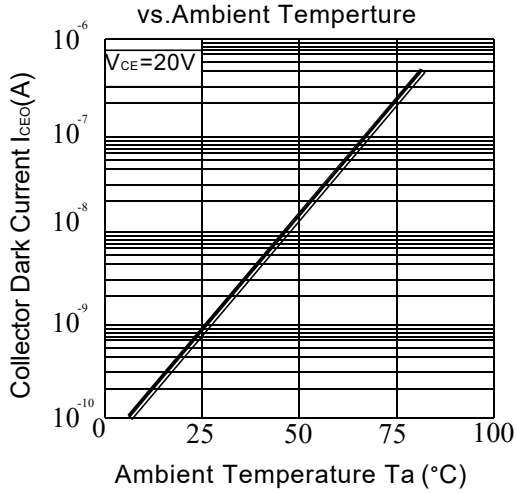
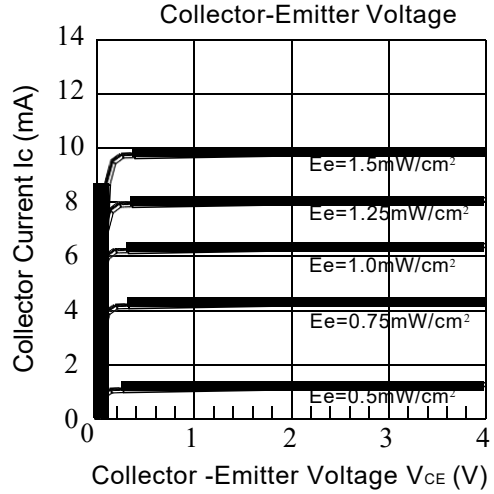
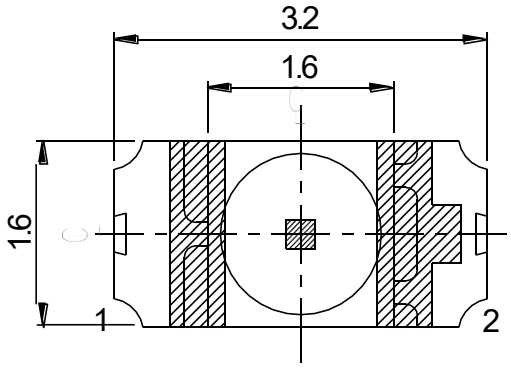
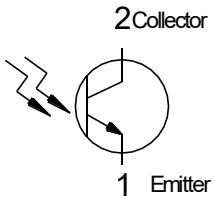


Fig.6-Collector Current vs. Collector-Emitter Voltage

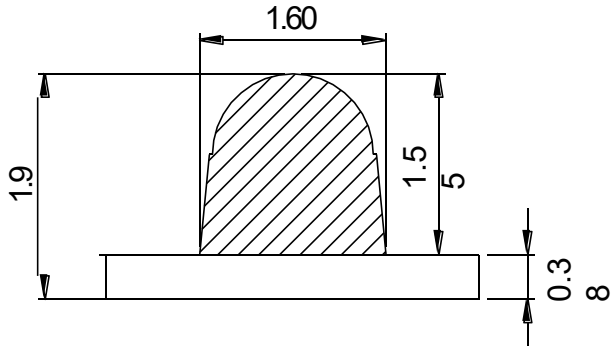


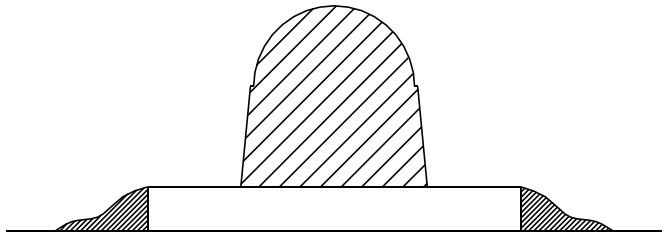
Package Dimension



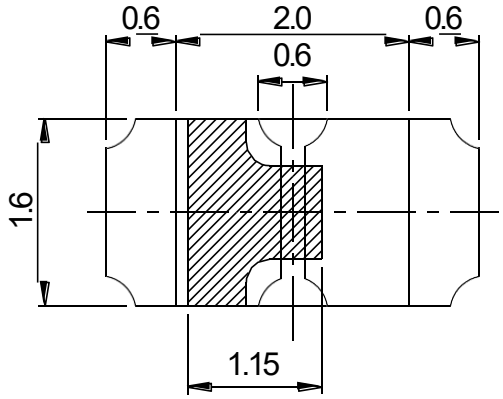


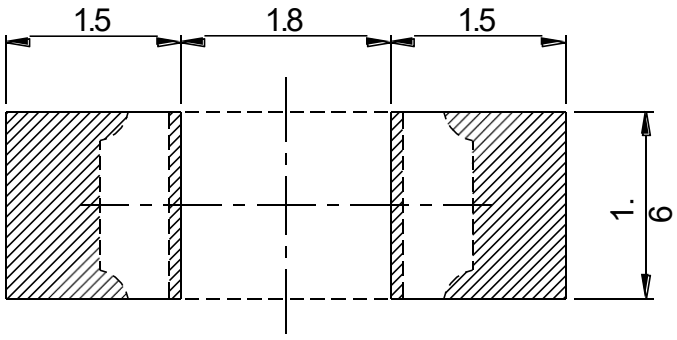
Polarity





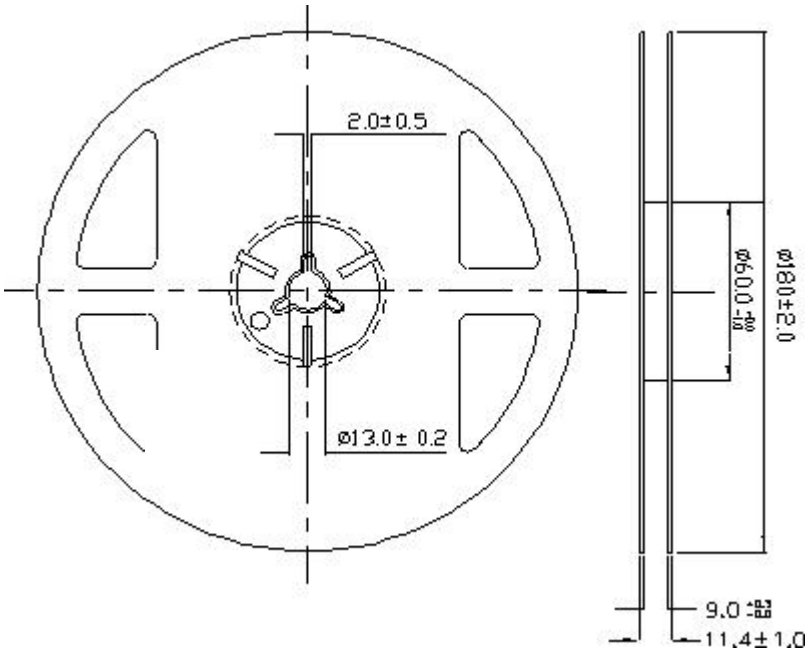
Recommended Solder Pad





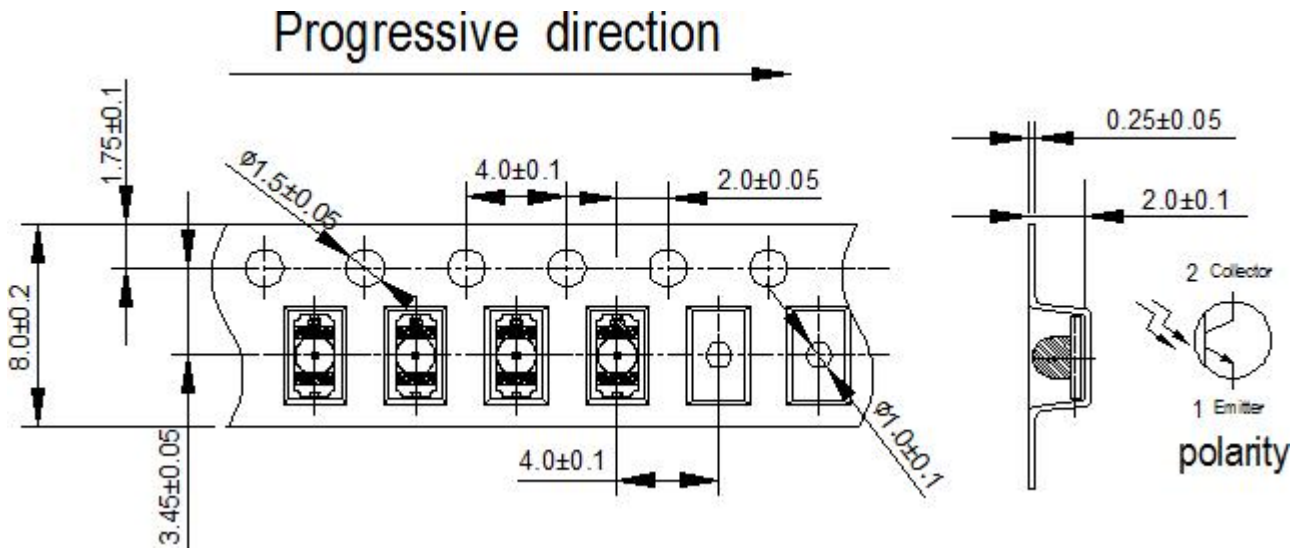
Note:
Tolerance unless mentioned is ±0.1mm,Unit = mm.

Reel Dimensions



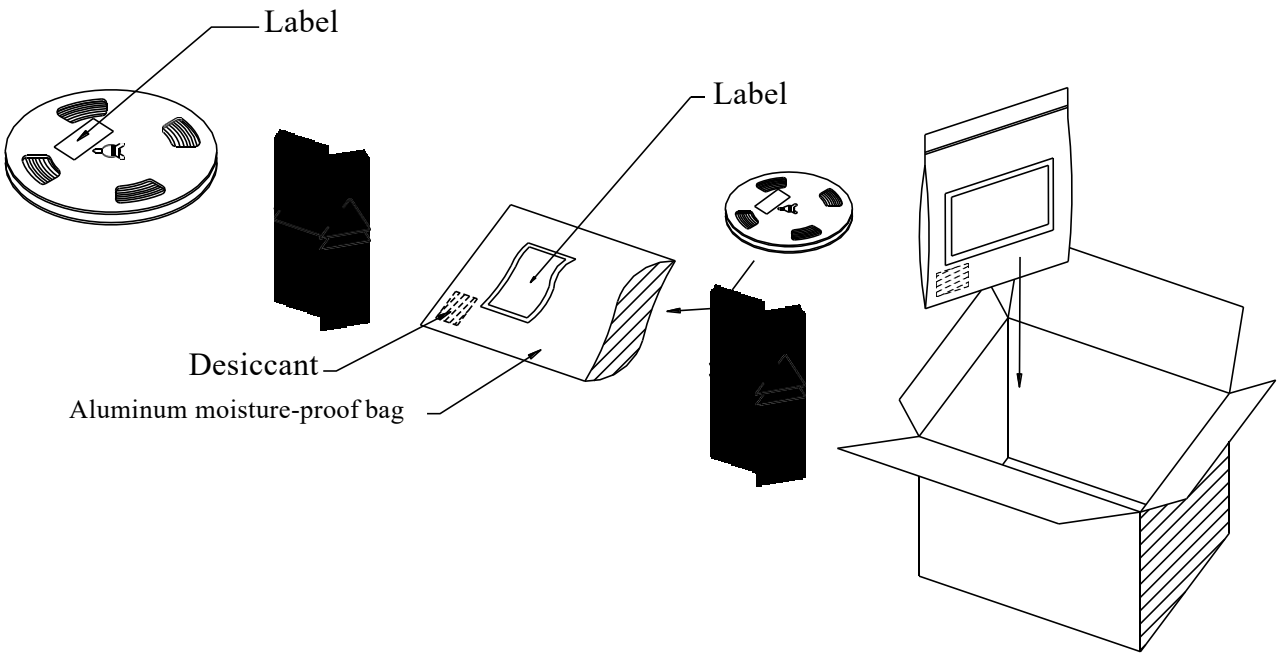
Note:
Tolerances unless mentioned ±0.1mm,Unit = mm

Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



Notes:
1.Tolerance unless mentioned is ±0.1mm,Unit = mm.
2.Minimum packing amount is 1000 pcs per reel.

Moisture Resistant Packing Process



Reliability Test Items and Conditions

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

Confidence level：90%

LTPD：10%

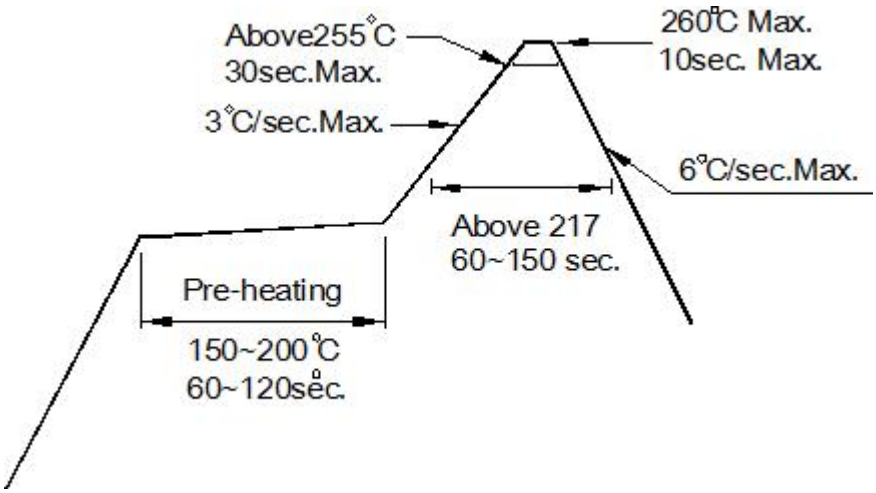
No.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Reflow Soldering	Temp. : 260℃/10sec.	6 Min.	22 PCS.	0/1
2	Thermal Shock	H : +100℃ 5min ∫ 10 sec L : -10℃ 5min	300 Cycles	22 PCS.	0/1
3	Temperature Cycle	H : +100℃ 15min ∫ 5 min L : -40℃ 15min	300 Cycles	22 PCS.	0/1
4	High Temperature/Humidity Reverse Bias	Ta=85℃,85%RH	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Ta=-40℃	1000 Hrs.	22 PCS.	0/1
6	High Temperature Storage	Ta=100℃	1000 Hrs.	22 PCS.	0/1
7	DC Operation Life	V_{CE}=5V	1000 Hrs.	22 PCS.	0/1

Precautions for Use

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
   1. Do not open moisture proof bag before the products are ready to use.
   2. Before opening the package: The LEDs should be kept at 30℃ or less and 90%RH or less.
   3. After opening the package: The LED's floor life is 1 year under 30℃ or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.
   4. 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
   1. Pb-free solder temperature profile



   2. Reflow soldering should not be done more than two times.
   3. When soldering, do not put stress on the LEDs during heating.
   4. After soldering, do not warp the circuit board.

4. Soldering Iron
   Each terminal is to go to the tip of soldering iron temperature less than 350℃ for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5. 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.