

## AM2520P3BT03 Phototransistor

### DESCRIPTION

- Made with NPN silicon phototransistor chips

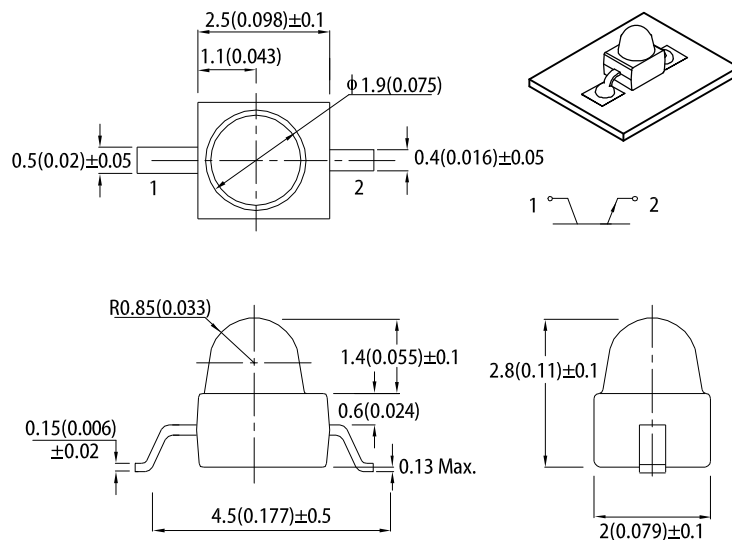
### FEATURES

- Subminiature package
- Gull wing lead
- Mechanically and spectrally matched to the infrared emitting LED lamp
- Package: 1000 pcs / reel
- Moisture sensitivity level: 3
- The device is having a daylightfilter
- RoHS compliant

### APPLICATIONS

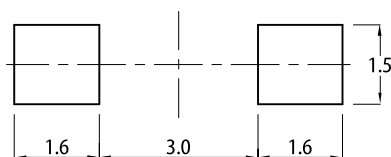
- Infrared applied systems
- Optoelectronic switches
- Photodetector control circuits
- Sensor technology

### PACKAGE DIMENSIONS



### RECOMMENDED SOLDERING PATTERN

(units : mm; tolerance : ± 0.1)



#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.

### ABSOLUTE MAXIMUM RATINGS at T<sub>A</sub>=25°C

Parameter	Max.Ratings	Units
Collector-to-Emitter Voltage	30	V
Emitter-to-Collector Voltage	5	V
Power Dissipation at(or below) 25°C Free Air Temperature	100	mW
Operating Temperature	-40 to +85	°C
Storage Temperature	-40 to +85	°C

#### Note:

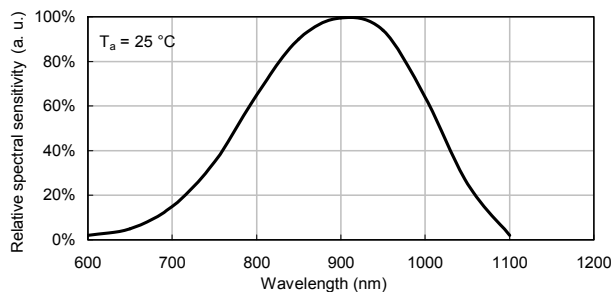
1. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

### ELECTRICAL / OPTICAL CHARACTERISTICS at $T_A=25^\circ\text{C}$

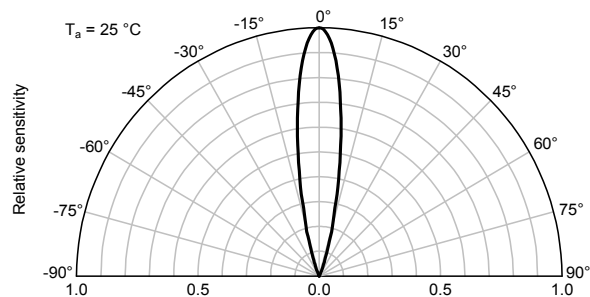
Parameter	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Collector-to-Emitter Breakdown Voltage	$V_{BR\ CE0}$	30	-	-	V	$I_C = 100\mu\text{A}$ $E_e = 0\text{mW}/\text{cm}^2$
Emitter-to-Collector Breakdown Voltage	$V_{BR\ ECO}$	5	-	-	V	$I_E = 100\mu\text{A}$ $E_e = 0\text{mW}/\text{cm}^2$
Collector-to-Emitter Saturation Voltage	$V_{CE(SAT)}$	-	-	0.8	V	$I_C = 2\text{mA}$ $E_e = 20\text{mW}/\text{cm}^2$
Collector Dark Current	$I_{CEO}$	-	-	100	nA	$V_{CE} = 10\text{V}$ $E_e = 0\text{mW}/\text{cm}^2$
Rise Time(10% to 90%)	$T_R$	-	15	-	$\mu\text{S}$	$V_{CE} = 5\text{V}$ $I_C = 1\text{mA}$ $R_L = 1000\Omega$
Fall Time(90% to 10%)	$T_F$	-	15	-	$\mu\text{S}$	
On State Collector Current	$I_{(ON)}$	0.4	0.8	-	mA	$V_{CE} = 5\text{V}$ $E_e = 1\text{mW}/\text{cm}^2$ $\lambda = 940\text{nm}$
Range of spectral bandwidth	$\lambda_{0.1}$	670	-	1070	nm	-
Wavelength of peak Sensitivity	$\lambda_p$	-	940	-	nm	-
Angle of half sensitivity	$2\theta_{1/2}$	-	20	-	deg	-

### TECHNICAL DATA

#### RELATIVE SPECTRAL SENSITIVITY vs. WAVELENGTH



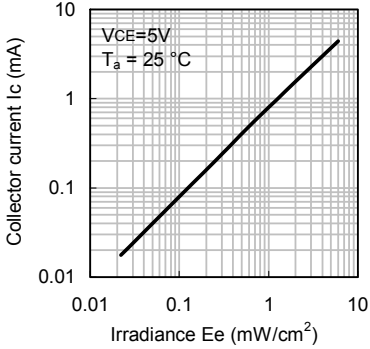
#### RELATIVE RADIANT SENSITIVITY vs. ANGULAR DISPLACEMENT



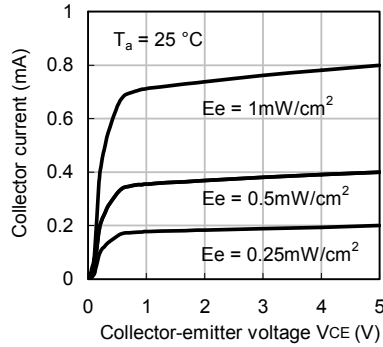
## TECHNICAL DATA

### PHOTOTRANSISTOR

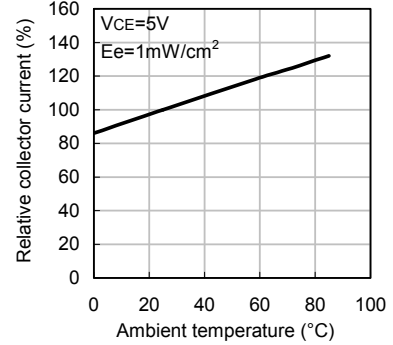
**Collector Current vs. Irradiance**



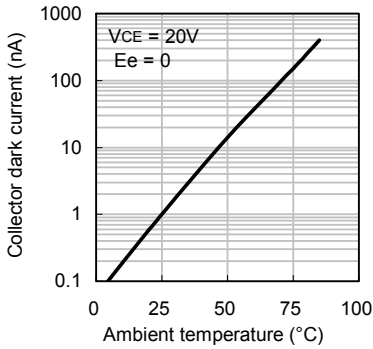
**Collector Current vs. Collector-Emitter Voltage**



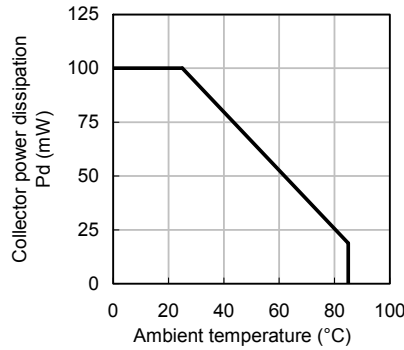
**Relative Collector Current vs. Ambient Temperature**



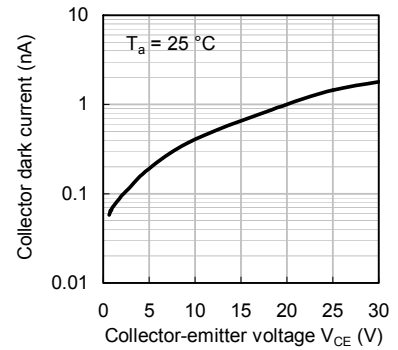
**Collector Dark Current vs. Ambient Temperature**



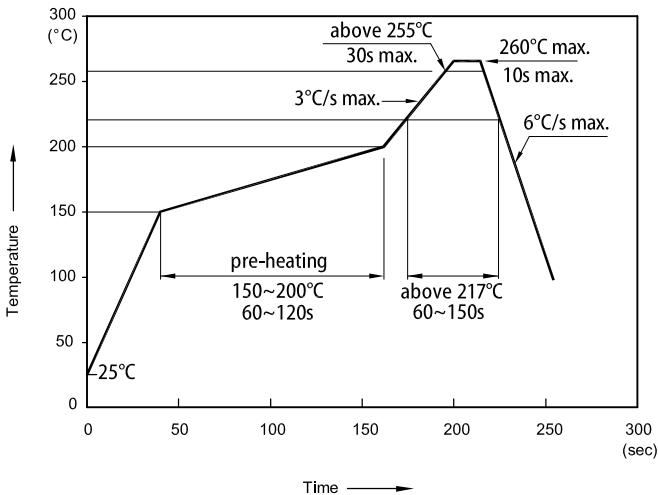
**Collector Power Dissipation vs. Ambient Temperature**



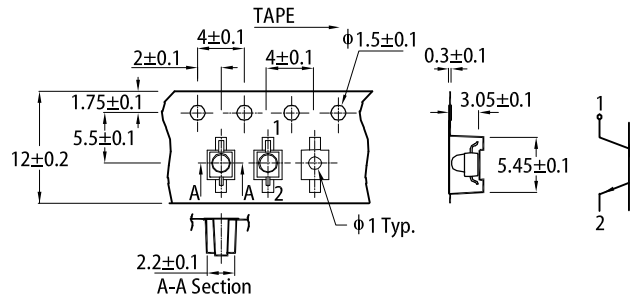
**Collector Dark Current vs. Collector-Emitter Voltage**



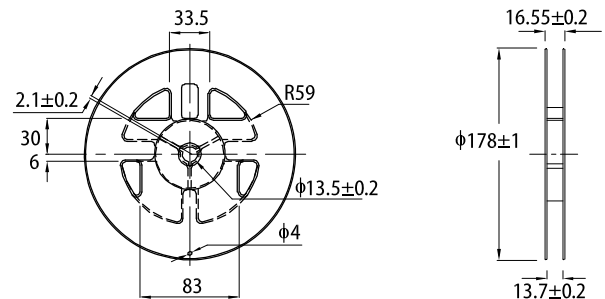
### REFLOW SOLDERING PROFILE for LEAD-FREE SMD PROCESS



### TAPE SPECIFICATIONS (units : mm)



### REEL DIMENSION (units : mm)



- Notes:
1. Don't cause stress to the LEDs while it is exposed to high temperature.
  2. The maximum number of reflow soldering passes is 2 times.
  3. Reflow soldering is recommended. Other soldering methods are not recommended as they might cause damage to the product.