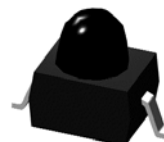


“Gull Wing” Lead Silicon Phototransistor

OP HA47

Description

This series of lead type SMT phototransistors is mold into “Gull Wing” lead package with black resin lens.



Features

- Fast response time
- High photo sensitivity
- High speed and high sensitive silicon NPN material

Applications

- Detector for industrial electronic circuitry
- Encoder
- Interrupter
- Infrared detector



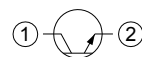
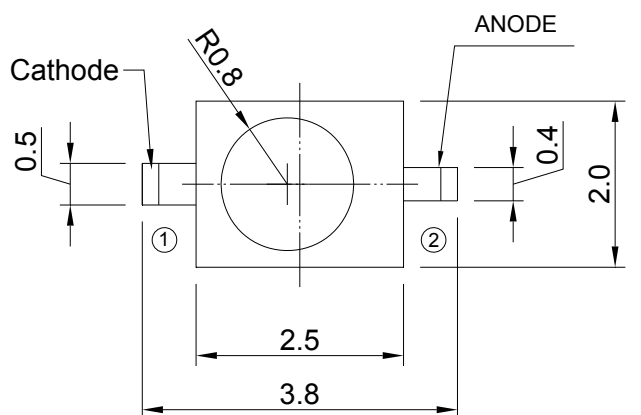
Absolute Maximum Rating $T(\text{amb}) = 25^{\circ}\text{C}$, unless otherwise specified

Parameter	Symbol	Value	Unit
Emitter-Collector Voltage	V_{ECO}	5	V
Collector-Emitter Voltage	V_{CEO}	30	V
Collector Current	I_{C}	20	mA
Power Dissipation	P_{C}	80	mW
Operating Temperature Range	T_{opr}	-30 to + 85	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-40 to + 85	$^{\circ}\text{C}$
Soldering Temperature	T_{sol}	260	$^{\circ}\text{C}$

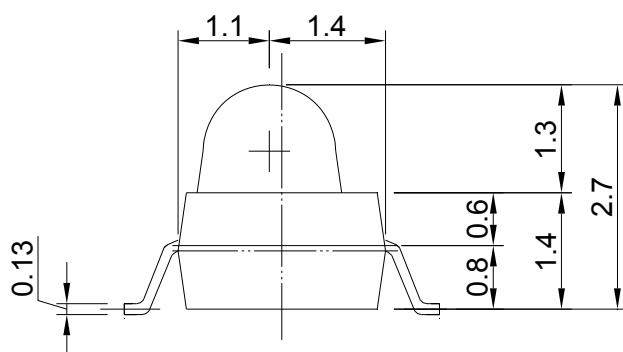
Note: Please take note the Absolute Maximum Rating values. Any operation beyond the specified ratings in this table will result degradation of product life-span and may cause to fail.

Package Dimension:

unit : mm



- ① Collector
- ② Emitter



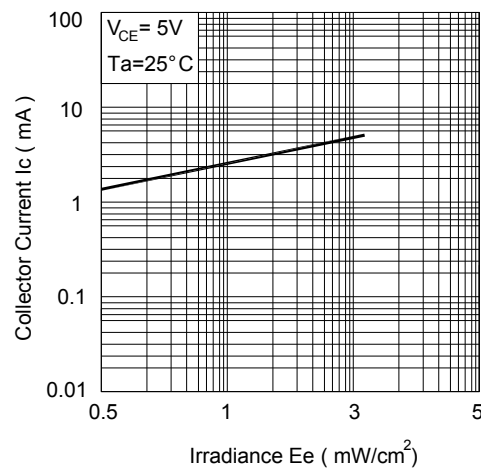
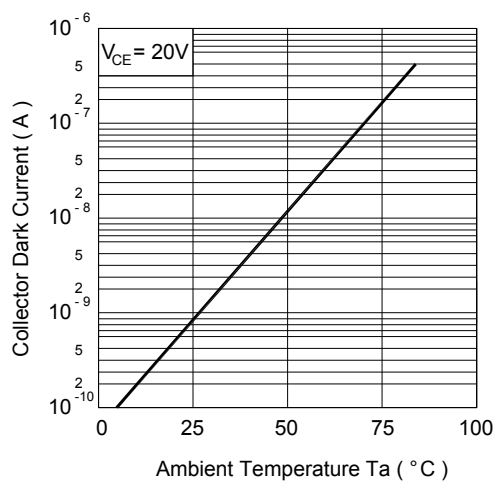
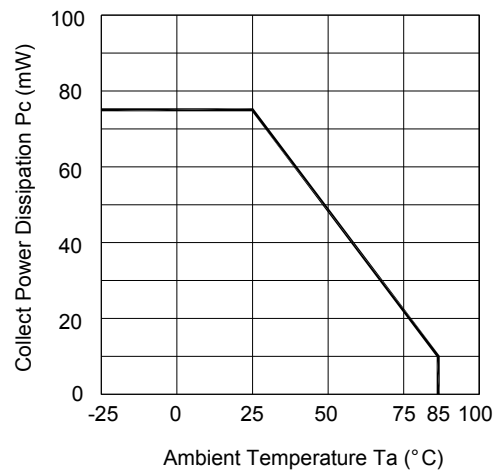
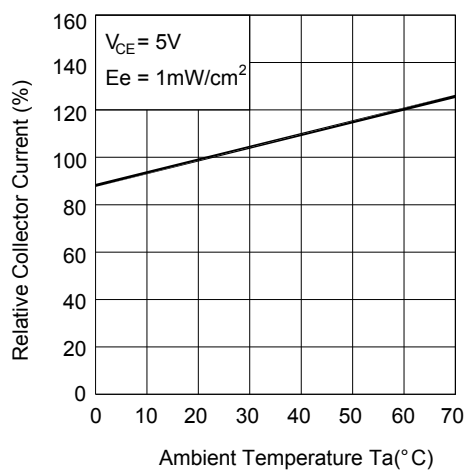
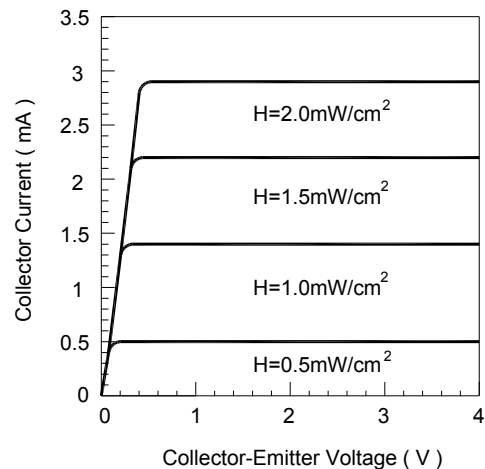
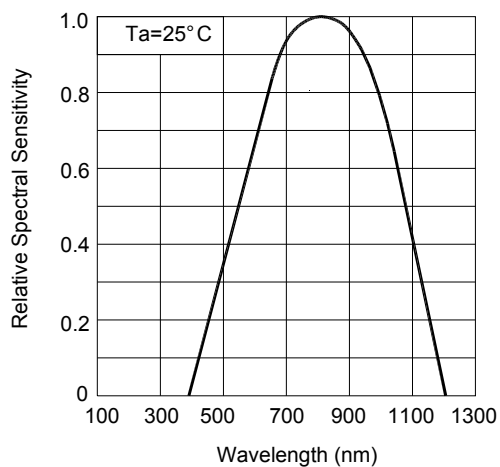
Notes:

1. All dimensions are millimeters.
2. Tolerance is $\pm 0.2\text{mm}$ unless otherwise specified.
3. Specifications are subject to change without notice.

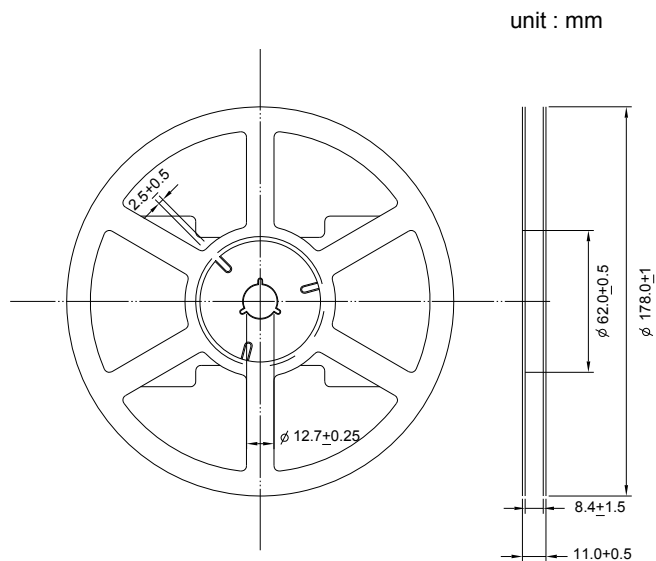
Optical Characteristics Tamb=25°C, unless otherwise specified

Parameter	Test condition	Symbol	Min	Typ.	Max	Unit
Emitter-Collector Breakdown Voltage	$I_C = 100\mu A$ $E_e = 0mW/cm^2$	BV_{ECO}	30	---	---	V
Collector- Emitter Breakdown Voltage	$I_C = 100\mu A$ $E_e = 0mW/cm^2$	BV_{CEO}	5	---	---	V
Collector-Emitter Saturation Voltage	$I_C = 2mA$ $E_e = 1mW/cm^2$	$V_{CE(SAT)}$	---	---	0.4	V
Collector Dark Current	$E_e = 0mW/cm^2$ $V_{CE} = 20V$	I_{CEO}	---	---	100	nA
On State Collector Current	$E_e = 1mW/cm^2$ $V_{CE} = 5V$	$I_{C(ON)}$	1.0	1.5		mA
Range of Spectral Bandwidth	---	$\lambda_{0.5}$	700	---	1200	nm
Wavelength of Peak Sensitivity	---	λ_p	---	940	---	nm
Rise Time	$V_{ce}=5V, I_c=1mA,$ $R_L=1000\Omega$	T_r	---	15	---	μS
Fall Time		T_f		15	---	

Typical Electro-optical Characteristics Curves

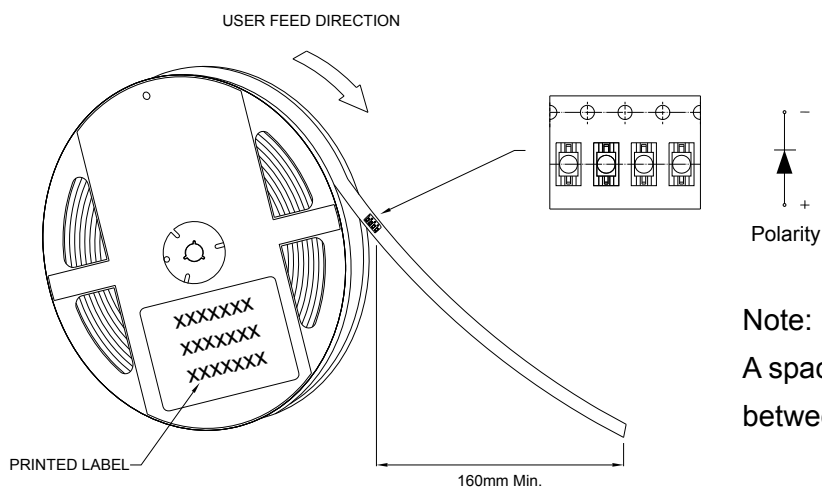


Reel Dimension:



Note:

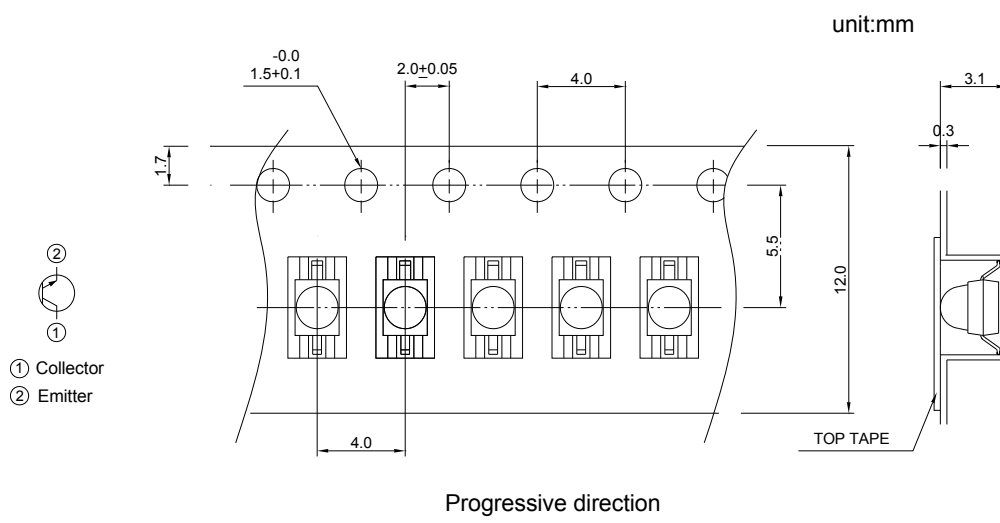
Available in 8mm carrier tape on 178mm diameter reels. (1000 pieces)



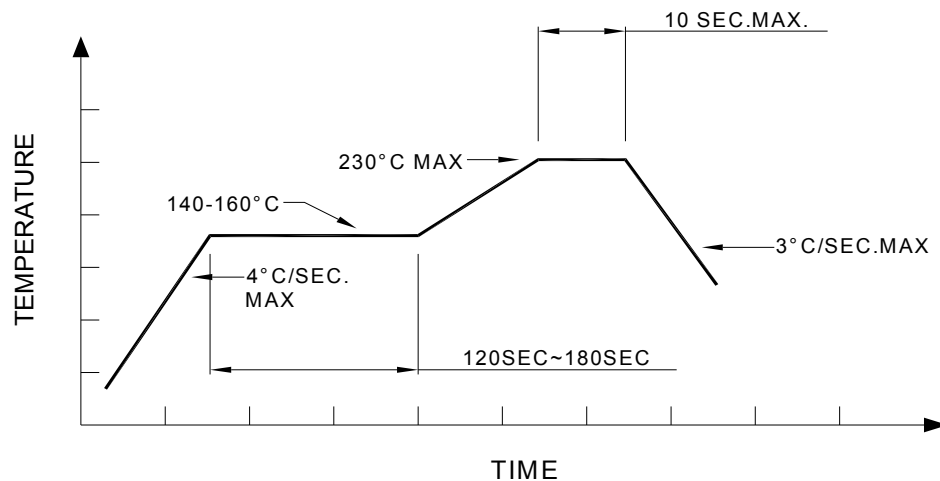
Note:

A spacing of approximately 160mm between the front edge of tape

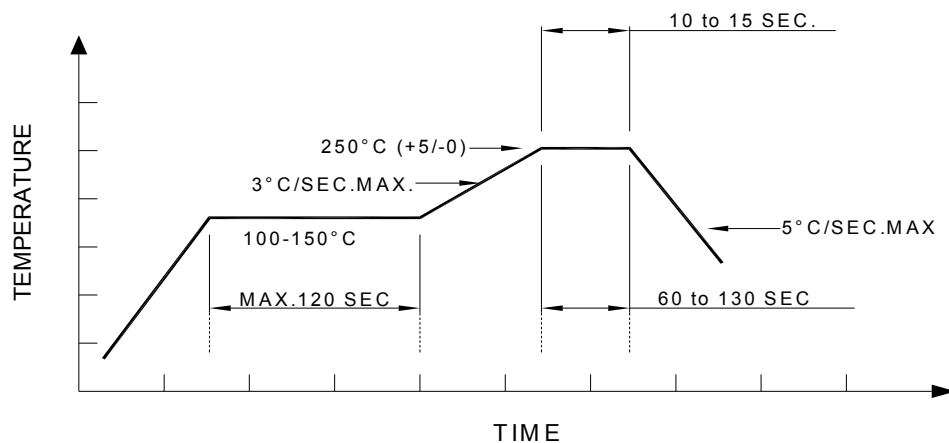
Tape Dimension:



Recommended re-flow soldering profile:



Recommended Pb-free re-flow soldering profile:



Note:

All the specifications listed in this data sheet are suitable for general electronic equipment, office equipment and communication devices. Kindly consult Sales Representatives for specific reliabilities request, Forward Voltage, Luminous Intensity, Wavelength, Radiant Power or Viewing Angle.