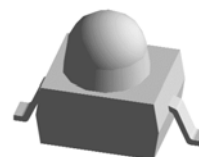


“Gull Wing” Lead Silicon Phototransistor

OP HA38

Description

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

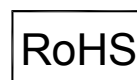


Features

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

Applications

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



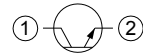
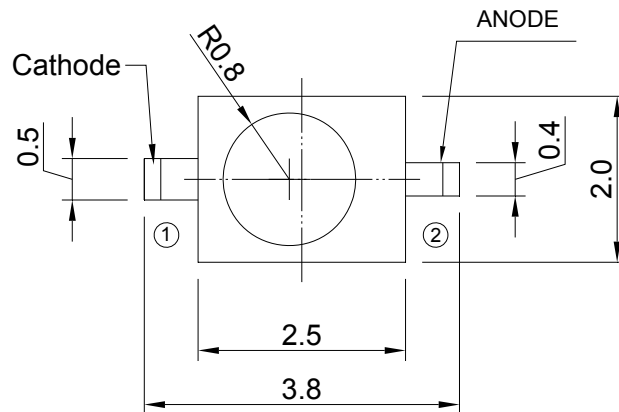
Absolute Maximum Rating $T(\text{amb}) = 25^{\circ}\text{C}$, unless otherwise specified

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	$^{\circ}\text{C}$

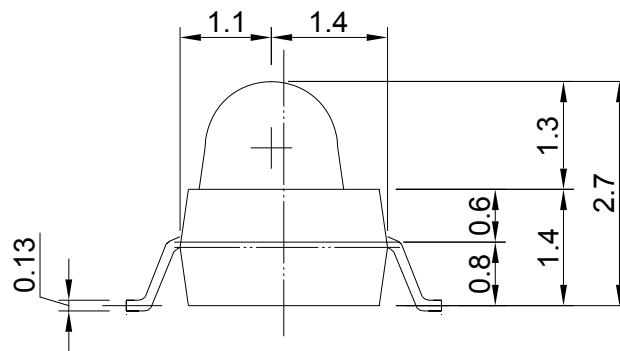
Note: Please take note the Absolute Maximum Rating values. Any operation beyond the specified ratings in this table will result degradation of product life-span and may cause to fail.

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.

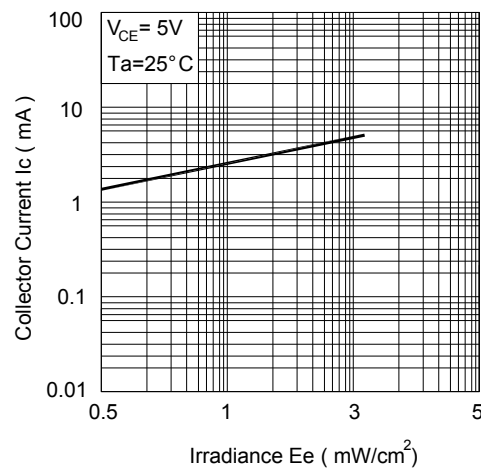
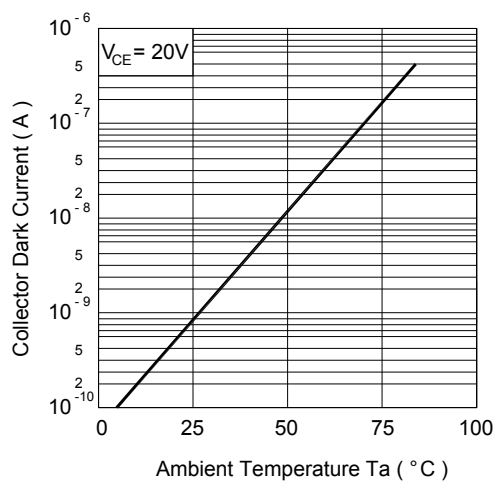
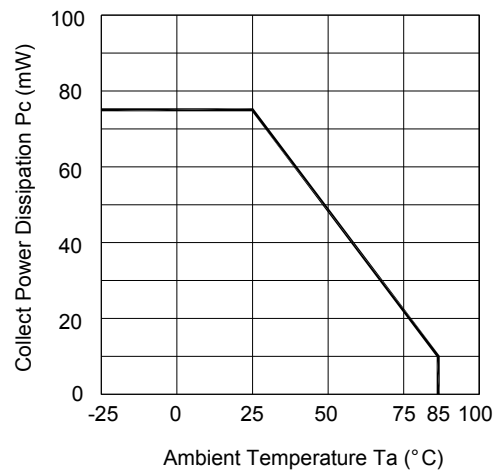
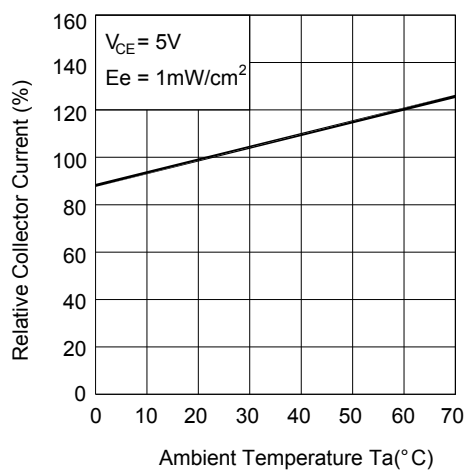
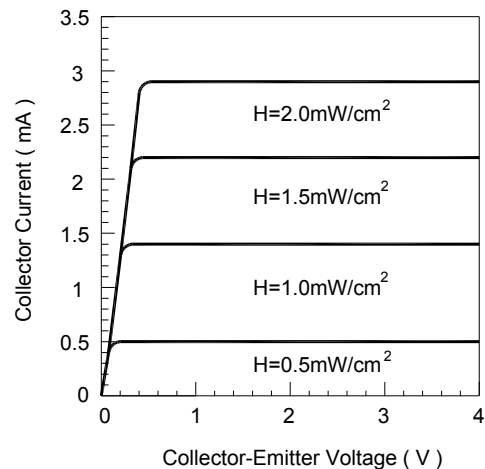
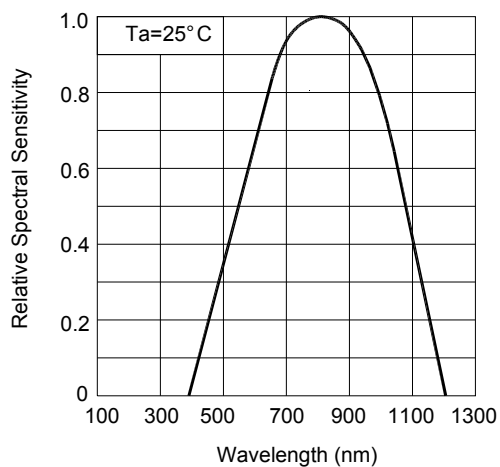
Optical Characteristics Tamb=25°C, unless otherwise specified

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	$E_e = 1mW/cm^2$ $V_{CE} = 5V$	$I_{C(ON)}$	0.5	3.0		mA
Range of Spectral Bandwidth	---	$\lambda_{0.5}$	400	---	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	---	

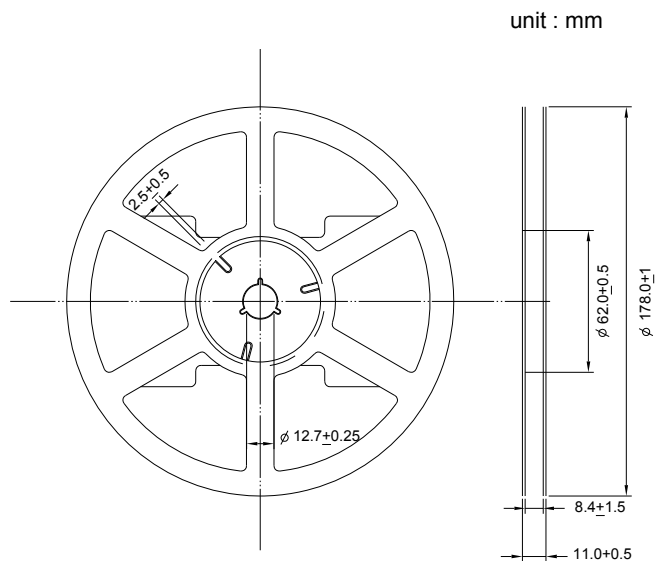
Rankings

Parameter	Symbol	Min.	Max.	Unit	Test Condition
1	$I_{C(ON)}$	1.0	2.0	mA	$E_e = 1mW/cm^2$ $V_{CE} = 5V$
2		1.5	3.0		
3		2.0	4.0		
4		2.5	5.0		
5		3.0	6.0		

Typical Electro-optical Characteristics Curves

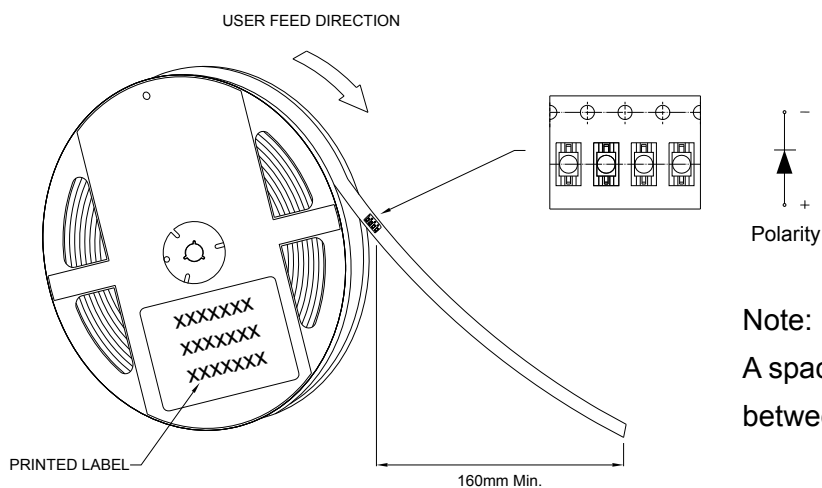


Reel Dimension:



Note:

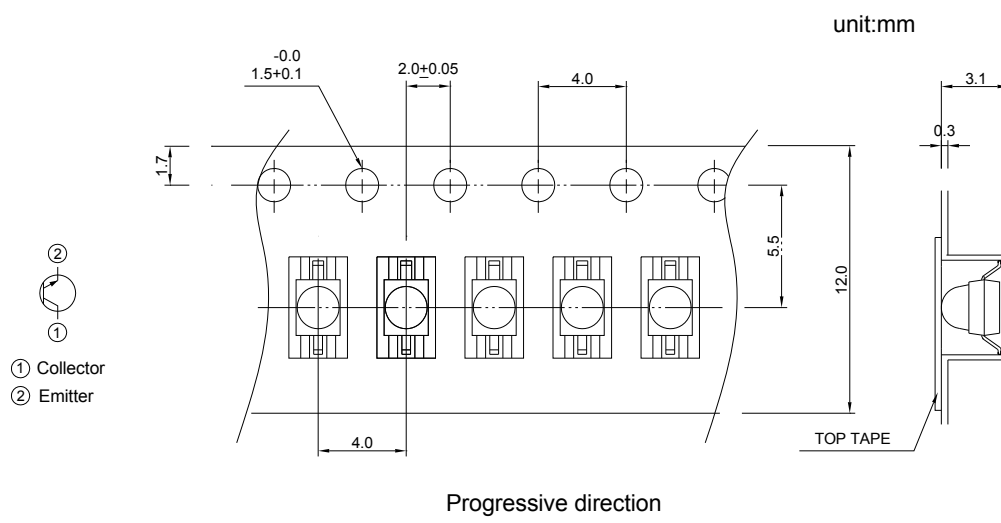
Available in 8mm carrier tape on 178mm diameter reels. (1000 pieces)



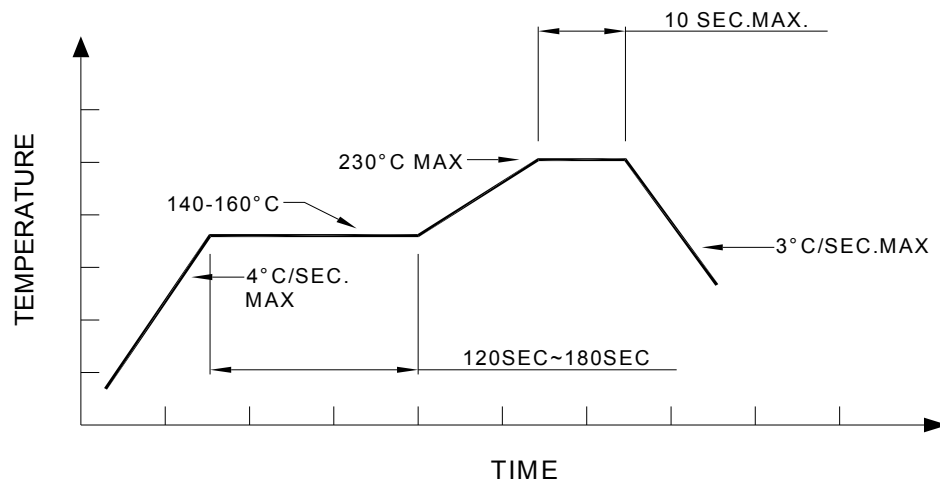
Note:

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:

