

61048 SILICON PHOTOTRANSISTOR (TYPE GS4123)	<i>Mii</i> OPTOELECTRONIC PRODUCTS DIVISION
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Features: • Hermetically sealed • High Sensitivity • Base lead provided for conventional transistor biasing • Wide receiving angle for easy alignment • Spectrally Matched to the 62030 Series LED.	Applications: • Incremental Encoding • Reflective Sensors • Position Sensors • Level Sensors
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DESCRIPTION
This is a N-P-N Planar Silicon phototransistor in a flat window TO-46 three-lead package featuring a large (0.06" X 0.06") sensitive area. It is available in a range of sensitivities and is ideal for use wherever system considerations dictate the use of external optics to focus radiation on the sensor. Available custom binned to customer specifications and/or screened to MIL-PRF-19500.

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ABSOLUTE MAXIMUM RATINGS	
Storage Temperature.....	-65°C to +150°C
Operating Temperature (See part selection guide for actual operating temperature).....	-65°C to +125°C
Collector-Emitter Voltage.....	50V
Emitter-Collector Voltage.....	7V
Continuous Collector Current.....	50mA
Power Dissipation (Derate at the rate of 2.5 mW/°C above 25°C).....	250mW
Lead Soldering Temperature (1/16" from case for 10 seconds).....	240°C

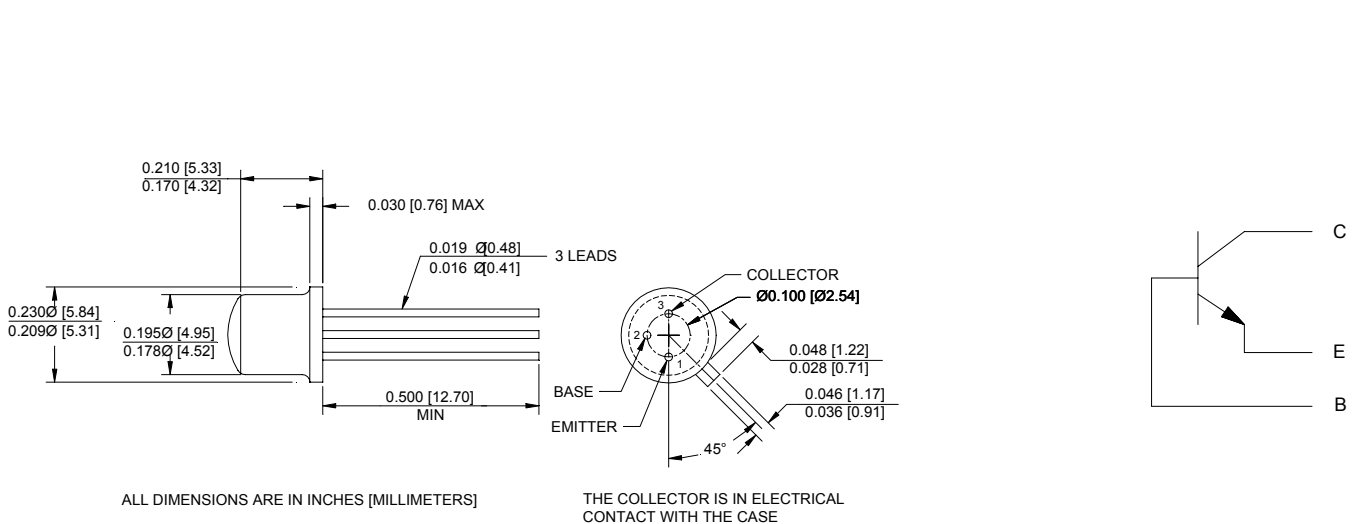
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Package Dimensions

Schematic Diagram

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0.210 [5.33]
0.170 [4.32]

0.030 [0.76] MAX

0.019 $\varnothing$ 0.48
0.016 $\varnothing$ 0.41

3 LEADS

0.230 $\varnothing$ [5.84]
0.209 $\varnothing$ [5.31]

0.195 $\varnothing$ [4.95]
0.178 $\varnothing$ [4.52]

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COLLECTOR
 $\varnothing$ 0.100 [$\varnothing$ 2.54]

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0.028 [0.71]

0.046 [1.17]
0.036 [0.91]

45°

BASE
EMITTER

C
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ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]

THE COLLECTOR IS IN ELECTRICAL CONTACT WITH THE CASE

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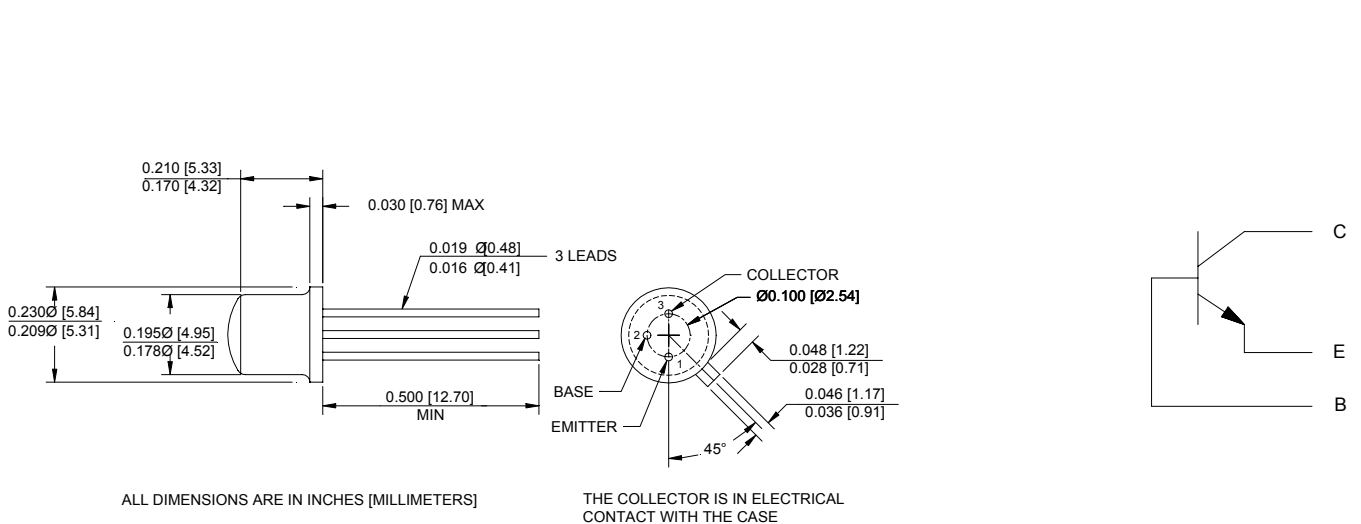
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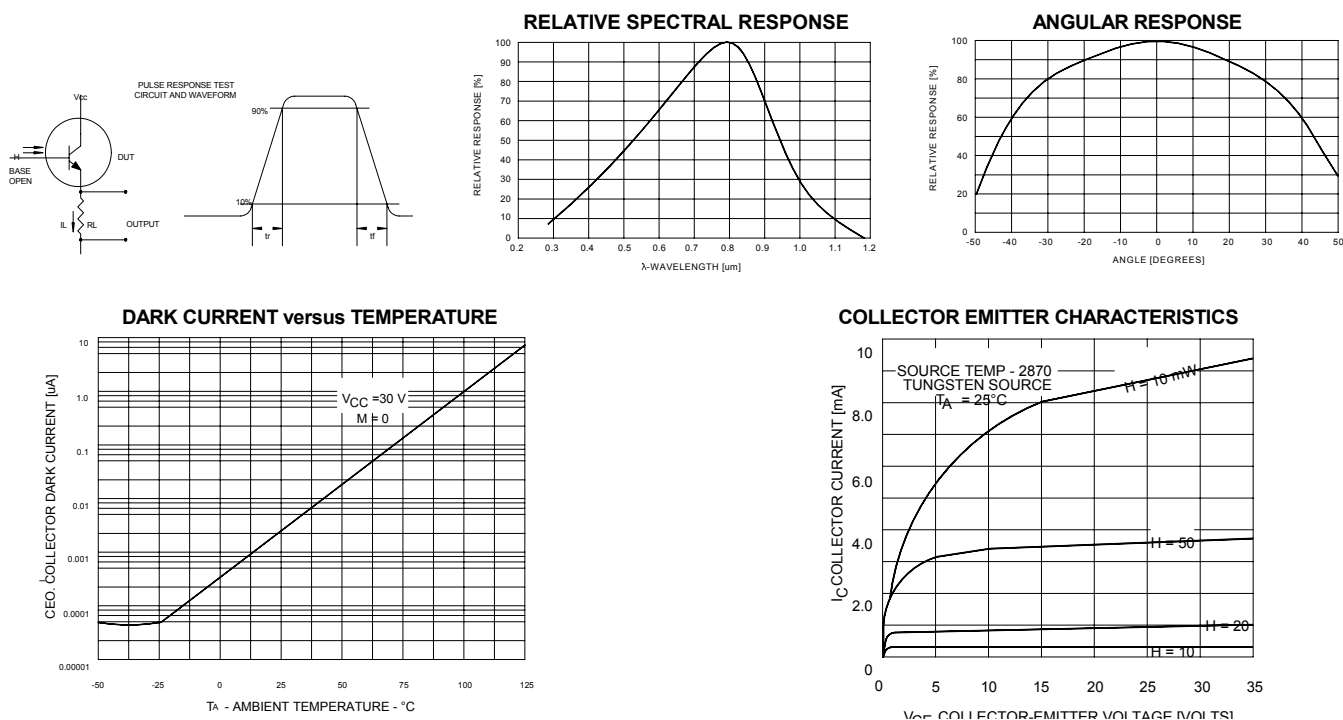


ELECTRICAL CHARACTERISTICS $T_A = 25^\circ\text{C}$ unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Light Current	I_L	5 20 30 50		20 30 50 —	mA	$V_{CE} = 5.0\text{V}$, $H = 20\text{ mW/cm}^2$	1
Dark Current	I_D			50	nA	$V_{CE} = 5\text{V}$, $H = 0$	
Collector-Emitter Breakdown Voltage	BV_{CEO}	30			V	$I_C = 100\mu\text{A}$	
Emitter-Collector Breakdown Voltage	BV_{ECO}	7			V	$I_E = 100\mu\text{A}$	
Light Current Rise Time	t_r		8 10 15 20		μs	$R_L = 100\Omega$, $V_{CC} = 5\text{V}$, $I_L = 1.0\text{mA}$	
Saturation Voltage	$V_{CE(sat)}$		0.2		V	$I_C = 0.4\text{mA}$, $H = 20\text{ mW/cm}^2$	
Angular Response	θ		10		degrees		2

NOTES:

- Irradiance in mW/cm^2 from tungsten source at a color temperature of 2870K.
- The angle between incidence for peak response and incidence for 50% of peak response.

**RECOMMENDED OPERATING CONDITIONS:**

PARAMETER	SYMBOL	MIN	MAX	UNITS
Bias Voltage-Collector/Emitter	I_F	5	10	mA
Irradiance (H)	H	15	25	mW/cm^2

SELECTION GUIDE

PART NUMBER	PART DESCRIPTION	I_L Range
61048-001	Silicon Phototransistor in TO-46 package, commercial version	5 to 20mA
61048-101	Silicon Phototransistor in TO-46 package (-55° to +100°C) with 100% screening	5 to 20mA
61048-002	Silicon Phototransistor in TO-46 package, commercial version	20 to 30mA
61048-102	Silicon Phototransistor in TO-46 package (-55° to +100°C) with 100% screening	20 to 30mA
61048-003	Silicon Phototransistor in TO-46 package, commercial version	30 to 50mA
61048-103	Silicon Phototransistor in TO-46 package (-55° to +100°C) with 100% screening	30 to 50mA
61048-004	Silicon Phototransistor in TO-46 package, commercial version	+50mA
61048-104	Silicon Phototransistor in TO-46 package (-55° to +100°C) with 100% screening	+50mA