

# MICRO

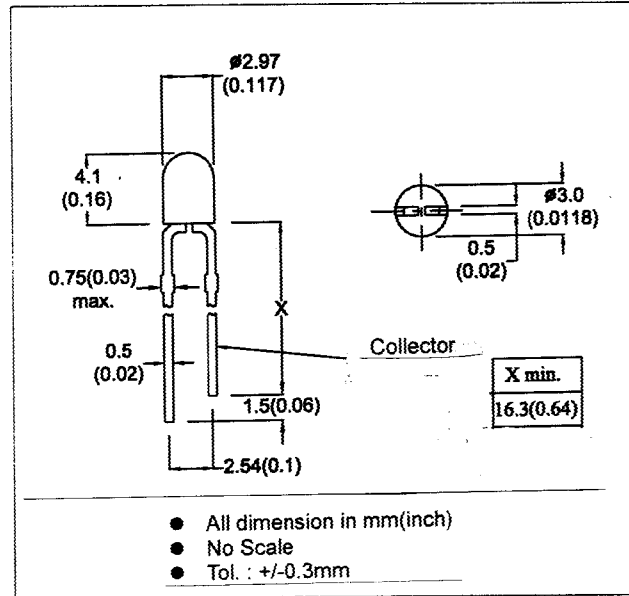
ELECTRONIC

NPN SILICON  
PHOTO  
TRANSISTOR

## DESCRIPTION

MEL82 is NPN silicon planar photo-transistor. It is encapsulated in a 3mm diameter, low profile and flangeless water clear transparent epoxy package.

It features ultra high illumination sensitivity, fast response time, and spectrally matched with the infra-red emitter MI38T series.



## ABSOLUTE MAXIMUM RATINGS

Collector-Emitter Voltage	V <sub>CEO</sub>	20V
Emitter-Collector Voltage	V <sub>ECO</sub>	5V
Continuous Power Dissipation	P <sub>d</sub>	50mW
Operating Junction Temperature	T <sub>j</sub>	-40 to +85°C
Storage Temperature Range	T <sub>stg</sub>	-40 to +100°C

## ELECTRO-OPTICAL CHARACTERISTICS (T<sub>a</sub>=25°C)

PARAMETER	SYMBOL	MIN	MAX	UNIT	CONDITIONS
Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	20		V	I <sub>C</sub> =100μA E <sub>e</sub> =0
Emitter-Collector Breakdown Voltage	BV <sub>ECO</sub>	5		V	I <sub>C</sub> =100μA E <sub>e</sub> =0
Dark Current	I <sub>D</sub>		100	nA	V <sub>CE</sub> =10V E <sub>e</sub> =0
Light Current	I <sub>L</sub>	3.5		mA	V <sub>CE</sub> =5V E <sub>e</sub> =5mW/cm <sup>2</sup> *
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>		0.3	V	I <sub>C</sub> =500μA E <sub>e</sub> =20mW/cm <sup>2</sup>
Rise Time	T <sub>r</sub>	3	TYP	μs	V <sub>CC</sub> =5V I <sub>C</sub> =4mA R <sub>L</sub> =100ohm
Fall Time	T <sub>f</sub>	3	TYP	μs	V <sub>CC</sub> =5V I <sub>C</sub> =4mA R <sub>L</sub> =100ohm

\* Measured at noted irradiance as emitted from tungsten filament lamp at a color temperature of 2854°K.



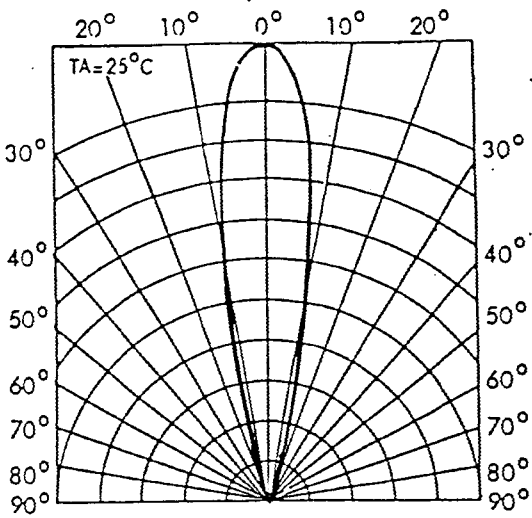
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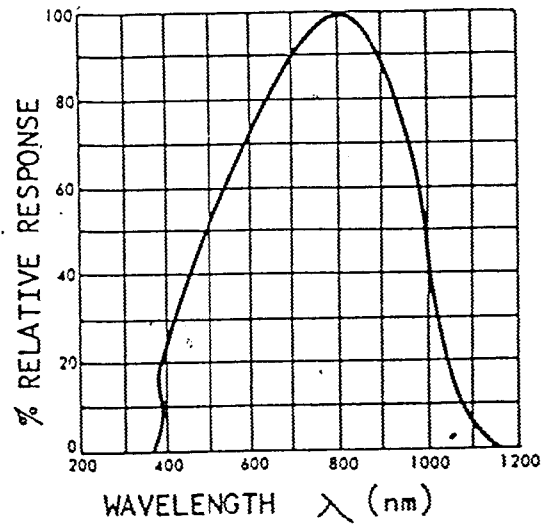
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# MEL82 TYPICAL CHARACTERISTICS

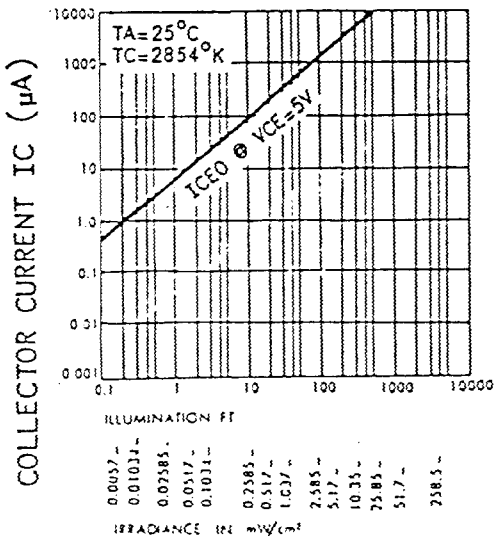
## ANGULAR RESPONSE



## SPECTRAL CHARACTERISTICS



## PHOTO CURRENT CHARACTERISTICS



## LIGHT CURRENT VS COLLECTOR-EMITTER VOLTAGE

