

SIDE LOOK PACKAGE NPN PHOTOTRANSISTOR

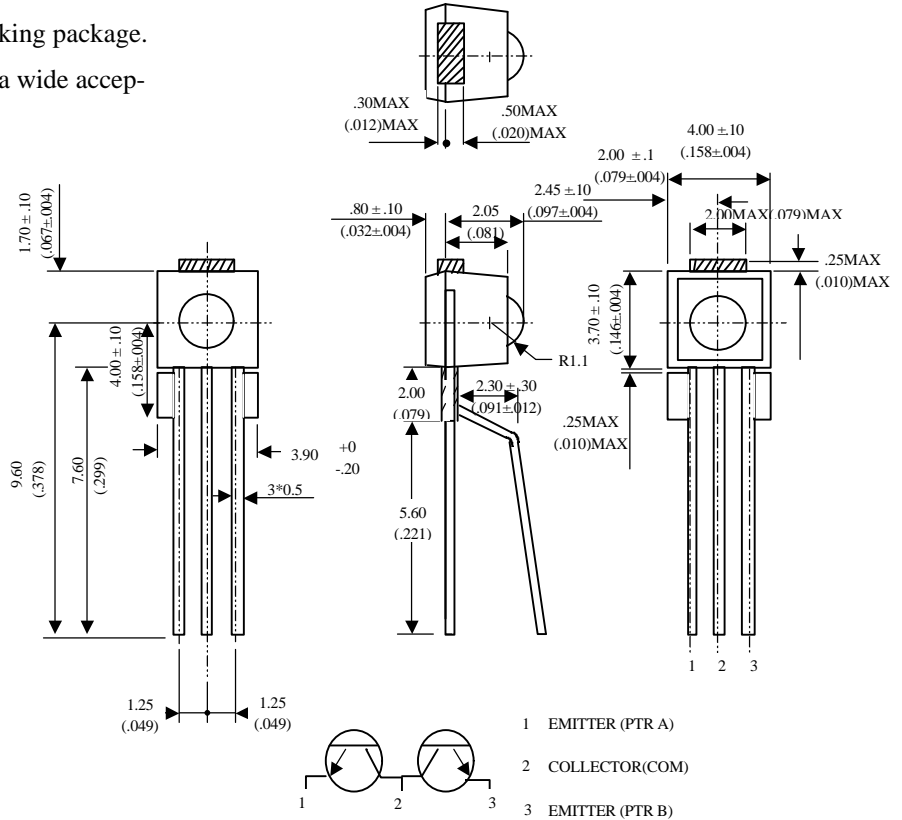
Unit: mm(inches)

MID-13A45

Description

The MID-13A45 is a Two Bits silicon phototransistor mounted in a special dark plastic side looking package. The lensing effect of the package allows a wide acceptance angle.

Package Dimensions



Features

- Wide range of collector current
- Low cost plastic package
- High resolution for mouse application

NOTES :

1. All dimensions are in millimeters.(inches).
2. Tolerance is $\pm 0.25\text{mm}$ (.010") unless otherwise noted .
3. Lead spacing is measured where the leads emerge from the package.

Absolute Maximum Ratings

@ $T_A=25^\circ\text{C}$

Parameter	Maximum Rating	Unit
Power Dissipation	100	mW
Collector-Emitter Voltage	30	V
Emitter-Collector Voltage	5	V
Operating Temperature Range	-55°C to +100°C	
Storage Temperature Range	-55°C to +100°C	
Lead Soldering Temperature	260°C for 5 seconds	

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Optical-Electrical Characteristics

@ $T_A=25^\circ\text{C}$

Parameter	Test Conditions	Symbol	Min.	Typ .	Max.	Unit
Collector-Emitter Breakdown Voltage	$I_c=0.1\text{mA}$ $E_e=0$	$V_{(BR)CEO}$	30			V
Emitter-Collector Breakdown Voltage	$I_e=0.1\text{mA}$ $E_e=0$	$V_{(BR)ECO}$	5			V
Collector-Emitter Saturation Voltage	$I_c=0.5\text{mA}$ $E_e=0.1\text{mW/cm}^2$	$V_{CE(SAT)}$		0.1	0.4	V
Rise Time	$V_R=5\text{V}$, $R_L=1\text{K}\Omega$	T_r		10		μS
Fall Time		T_f		10		
Collector Dark Current	$V_{CE}=10\text{V}$ $E_e=0$	I_{CEO}			100	nA
On State Collector Current	$V_{CE}=5\text{V}$ $E_e=0.1\text{mW/cm}^2$	$I_{C(ON)}$	0.16	0.4		mA

Typical Optical-Electrical Characteristic Curves

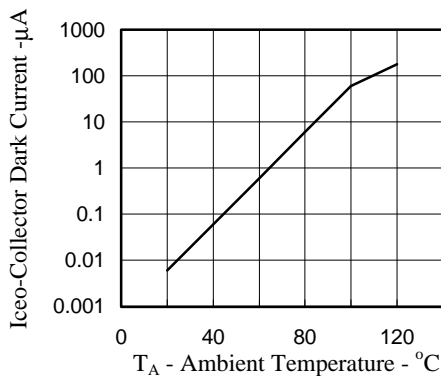


FIG.1 COLLECTOR DARK CURRENT VS AMBIENT TEMPERATURE

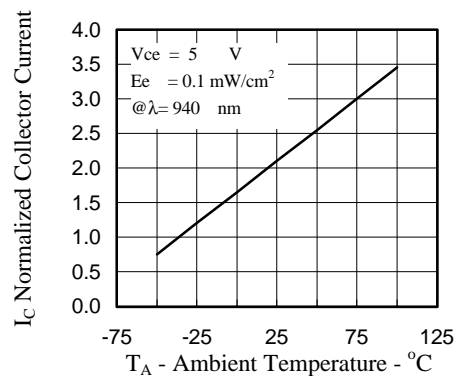


FIG.2 NORMALIZED COLLECTOR CURRENT VS AMBIENT TEMPERATURE

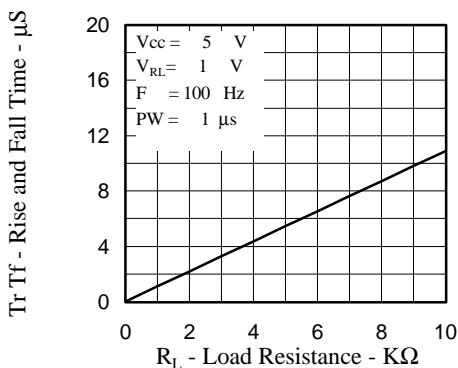


FIG.3 RISE AND FALL TIME VS LOAD RESISTANCE

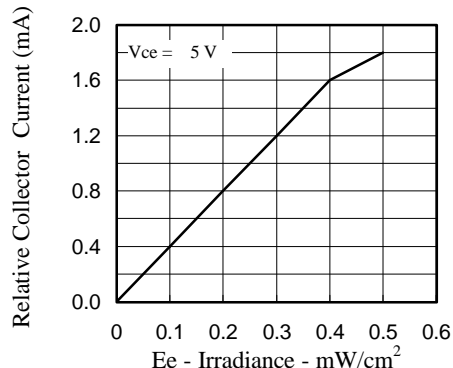


FIG.4 RELATIVE COLLECTOR CURRENT VS IRRADIANCE