

SUBMINIATURE
PHOTOINTERRUPTER

MIR-3305

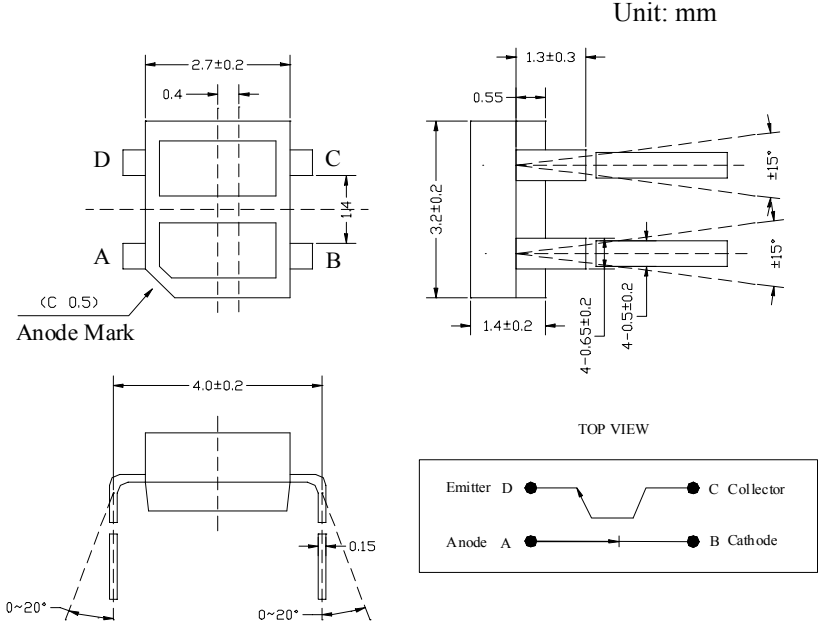
Description

The MIR-3305 consists of a Gallium Arsenide infrared emitting diode and a NPN silicon phototransistor built in a black plastic housing. It is a reflective subminiature photointerrupter.

Features

- Compact and thin
- MIR-3305 : Compact DIP, long lead type
- Optimum detecting distance : 0.8 - 1.0 mm
- Wavelength : 940nm
- Visible light cut-off type

Package Dimensions



NOTE:
(1).Tolerance:±0.2mm
(2). () Reference dimensions

Absolute Maximum Ratings

@ T _A =25°C					
Parameter		Symbol	Minimum Rating	Maximum Rating	Unit
INPUT	Continuous Forward Current	I _F		50	mA
	Reverse Voltage	V _R		5	V
	Power Dissipation	P _{ad}		75	mW
OUTPUT	Collector-emitter breakdown voltage	V _{(BR)CEO}	30		V
	Emitter-Collector breakdown voltage	V _{(BR)ECO}	5		V
	Collector power dissipation	P _c		75	mW
Total power dissipation		P _{TOT}		100	mW
Operating Temperature Range		T _{opr}	-25 °C to + 85°C		
Storage Temperature Range		T _{stg}	-40 °C to + 100°C		
Lead Soldering Temperature (within 5 sec, minimum 1.6mm from body) at 260°C					

Optical-Electrical Characteristics

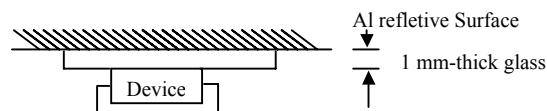
@ $T_A=25^{\circ}\text{C}$

Parameter		symbol	Min.	Typ.	Max.	Unit.	Test Conditions
Input	Forward Voltage	V_F	-	-	1.3	V	$I_F=20\text{mA}$
	Reverse Current	I_R	-	-	10	μA	$V_R=5\text{V}$
Output	Collector Dark Current	I_{ceo}	-	-	0.2	μA	$V_{ce}=10\text{V}$
Transfer Characteristics	*1 Collector Current	I_c	B	38	-	75	μA $I_F=4\text{mA}, V_{ce}=5\text{V}$
			C	56	-	108	
			D	80	-	151	
			E	112	-	216	
	Response Time (RISE)	t_r	-	20	100	μS	$I_c=100\mu\text{A}, V_{ce}=2\text{V}$
	Response Time (FALL)	t_f	-	20	100	μS	$R_L=1\text{k}\Omega$
	*2 Leak Current	I_{LEAK}	-	-	0.1	μA	$V_{ce}=5\text{V}$

*1 THE CONDITION AND ARRANGEMENT OF THE REFLECTIVE OBJECT ARE SHOWN AS FOLLOWING .

*2 WITHOUT REFLECTIVE OBJECT.

TEST CONDITION AND ARRANGEMENT FOR COLLECTOR CURRENT



Typical Optical-Electrical Characteristic Curves

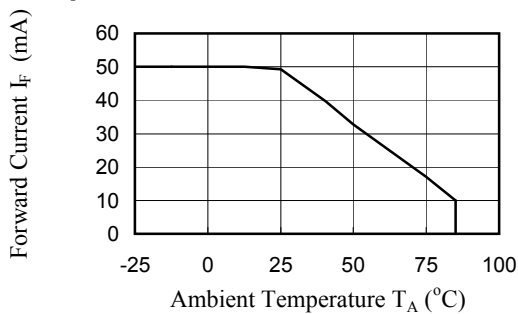


Fig.1 forward Current vs.
Ambient Temperature

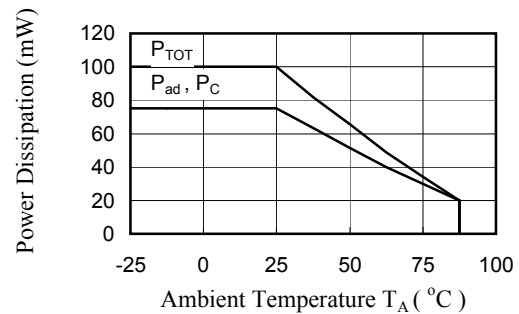


Fig.2 Power Dissipation vs.
Ambient Temperature

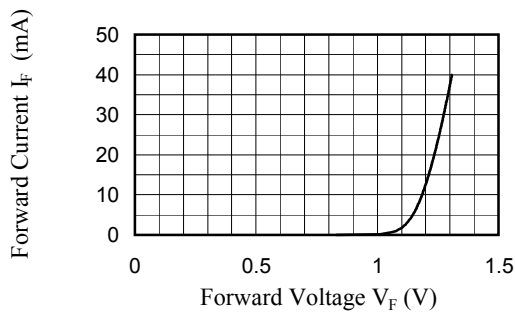


Fig.3 Forward Current vs
Forward Voltage

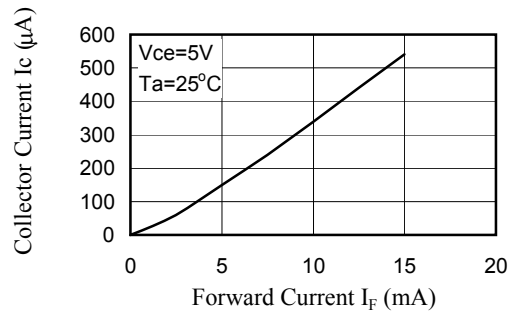


Fig.4 Collector Current vs.
Forward Current

Typical Optical-Electrical Characteristic Curves

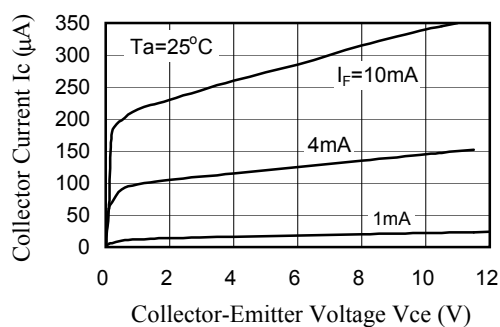


Fig.5 Collector Current vs. Vce

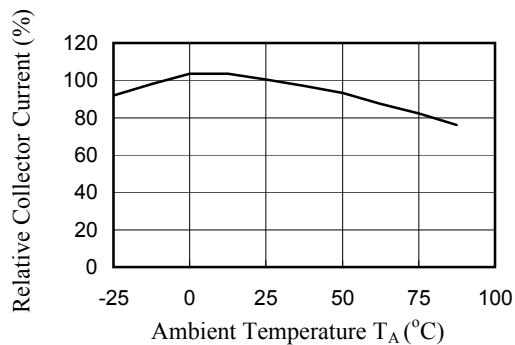


Fig.6 Relative Collector Current vs.

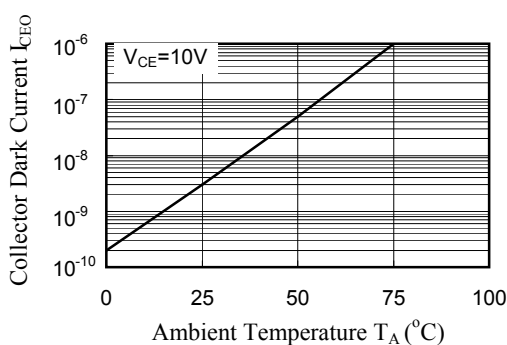


Fig.7 Collector Dark Current vs. Ambient Temperature

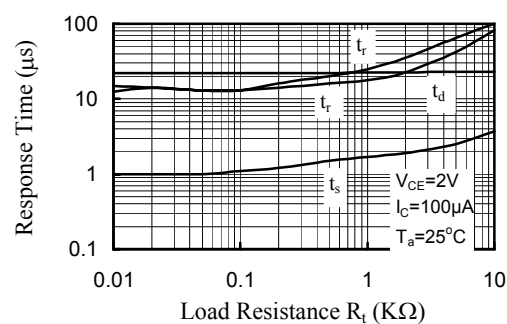


Fig.8 Response Time vs. Load Resistance

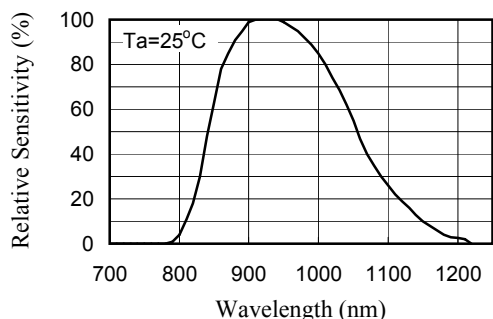


Fig.9 Spectral Sensitivity (Detecting side)

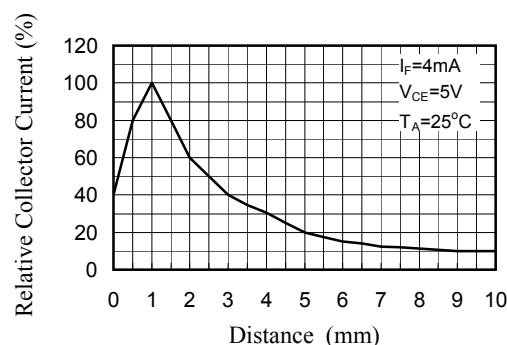


Fig.10 Relative Collector Current vs. Distance between MIR-3301 and Card

Test Circuit for Response Time

