

SUBMINIATURE PHOTOINTERRUPTER

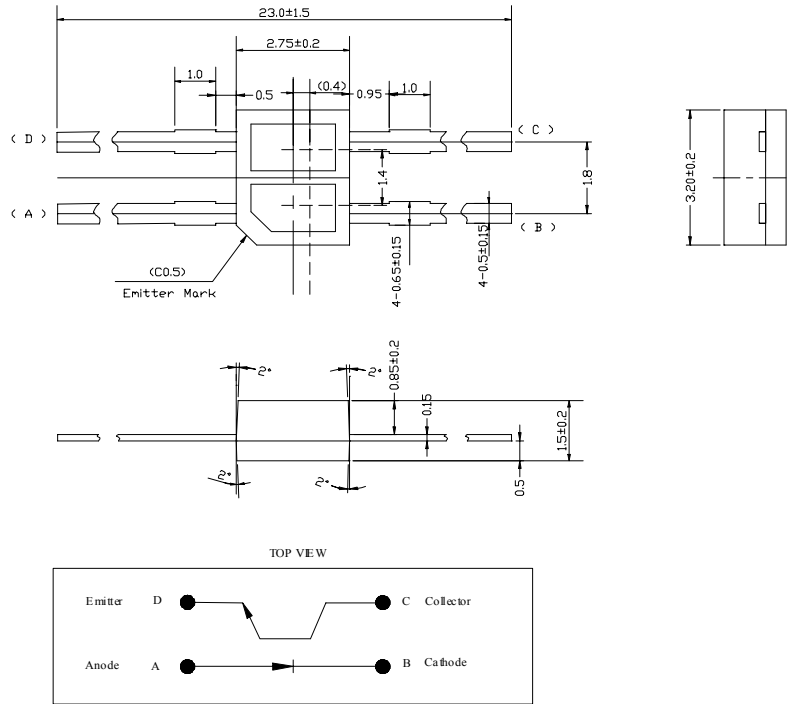
MIR-3305-P

Description

The MIR-3305-P 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.

Package Dimensions

Unit: mm



NOTE:

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

Features

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

Absolute Maximum Ratings

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

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					

UNI

Unity Opto Technology Co., Ltd.

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Optical-Electrical Characteristics

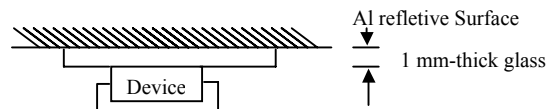
@ $T_A=25^\circ\text{C}$

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_{ce0}	-	-	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

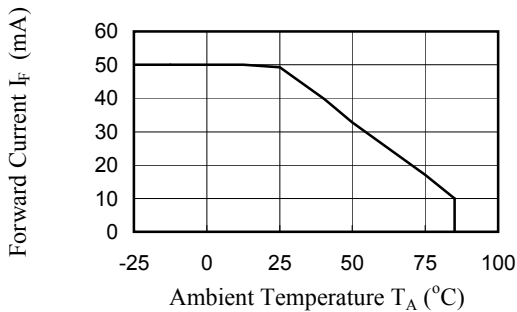


Fig.1 forward Current vs. Ambient Temperature

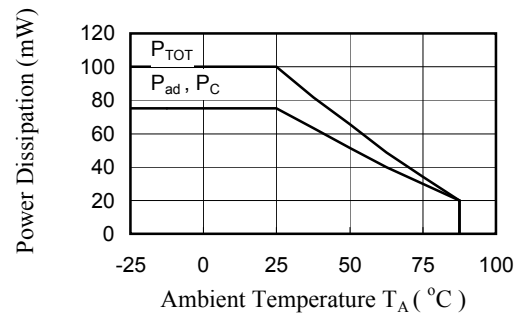


Fig.2 Power Dissipation vs. Ambient Temperature

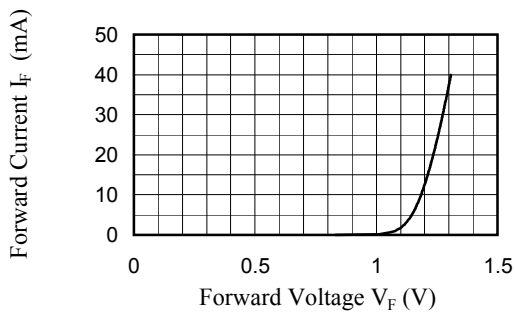


Fig.3 Forward Current vs. Forward Voltage

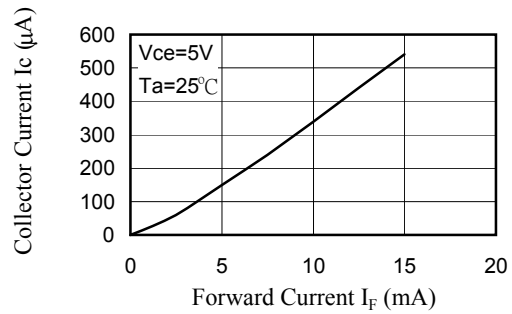


Fig.4 Collector Current vs. Forward Current

Typical Optical-Electrical Characteristic Curves

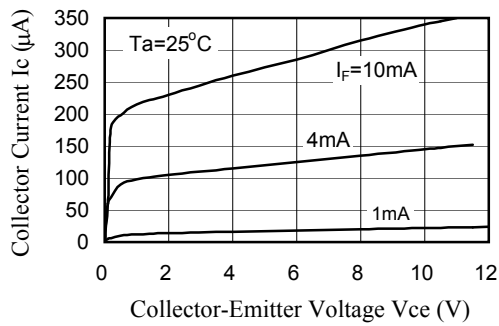


Fig.5 Collector Current vs. V_{ce}

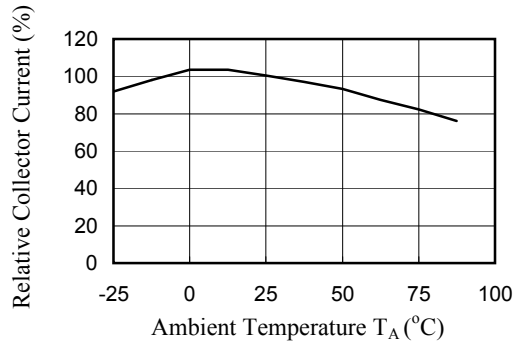


Fig.6 Relative Collector Current vs.

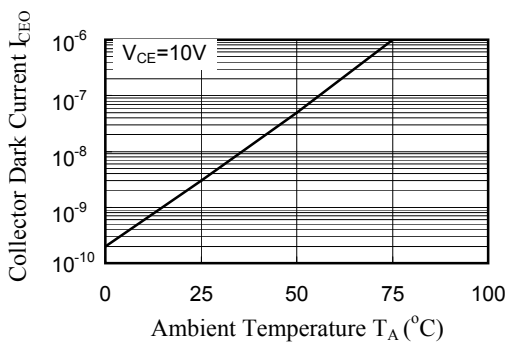


Fig.7 Collector Dark Current vs. Ambient Temperature

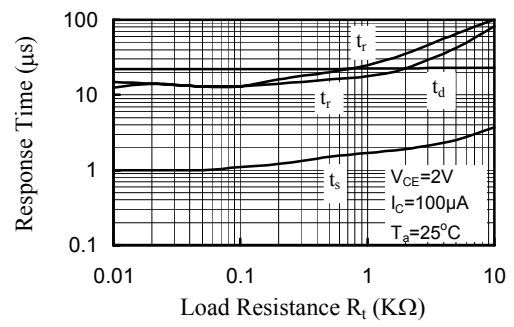


Fig.8 Response Time vs. Load Resistance

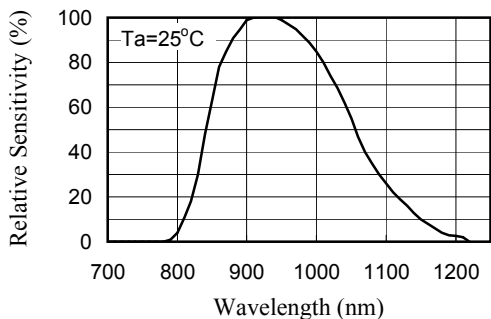


Fig.9 Spectral Sensitivity (Detecting side)

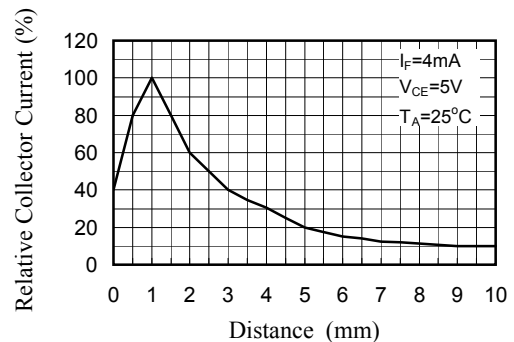


Fig.10 Relative Collector Current vs. Distance between MIR-3301 and Card

Test Circuit for Response Time

