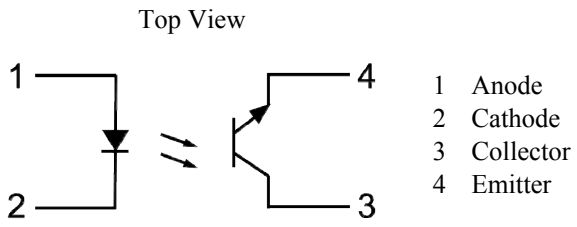
H21Ax, H22Ax

DESCRIPTION

The H21Ax and H22Ax series of opaque photointerrupters are single channel switches consisting of a Gallium Arsenide infrared emitting diode and a NPN silicon photo transistor mounted in a polycarbonate housing. The package is designed to optimise the mechanical resolution, coupling efficiency, ambient light rejection, cost and reliability.
Operating on the principle that objects opaque to infrared will interrupt the transmission of light between the infrared emitting diode and the photo sensor, switching the output from an "ON" state to an "OFF" state.

These photoinerrupters are in PWB mounting packages while H21Ax also provides flanges for Screw Mounting.



FEATURES

- High Gain
- 3mm Gap between LED and Detector
- Polycarbonate Case Protection against Ambient Light
- Pb Free and RoHS Compliant
- Safety Approvals Pending

APPLICATIONS

- Copiers, Printers, Facsimiles
- Record Players, Casette Decks
- Optoelectronic Switches

ORDER INFORMATION

- Supplied in Bulk Package

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Stresses exceeding the absolute maximum ratings can cause permanent damage to the device.
Exposure to absolute maximum ratings for long periods of time

Input	
Forward Current	50mA
Reverse Voltage	5V
Power dissipation	75mW
Output	
Collector Current	20mA
Collector-Emitter Voltage	30V
Emitter-Collector Voltage	5V
Power Dissipation	100mW
Total Package	
Operating Temperature	-25 to 85 °C
Storage Temperature	-55 to 100 °C
Lead Soldering Temperature (10s)	260°C

can adversely affect reliability.

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

INPUT

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward Voltage	V_F	I_F = 20mA		1.2	1.6	V
Reverse Current	I_R	V_R = 5V			100	µA

OUTPUT

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector-Emitter Dark Current	I_{CEO}	V_{CE} = 10V			100	nA

COUPLED

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
On-State Collector Current	$I_{C(ON)}$	H21A1, H22A1				mA
		I_F = 5mA, V_{CE} = 5V	0.15			
		I_F = 20mA, V_{CE} = 5V	1.0			
		I_F = 30mA, V_{CE} = 5V	1.9			
		H21A2, H22A2				
		I_F = 5mA, V_{CE} = 5V	0.3			
		I_F = 20mA, V_{CE} = 5V	2.0			
		I_F = 30mA, V_{CE} = 5V	3.0			
		H21A3, H22A3				
		I_F = 5mA, V_{CE} = 5V	0.6			
		I_F = 20mA, V_{CE} = 5V	4.0			
		I_F = 30mA, V_{CE} = 5V	5.5			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_F = 20mA, I_C = 0.25mA			0.4	V

SWITCHING

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Output Rise Time (10% to 90%)	t_r	V_{CE} = 5V I_C = 2mA R_L = 100Ω,		3	15	µs
Output Fall Time (90% to 10%)	t_f			4	20	

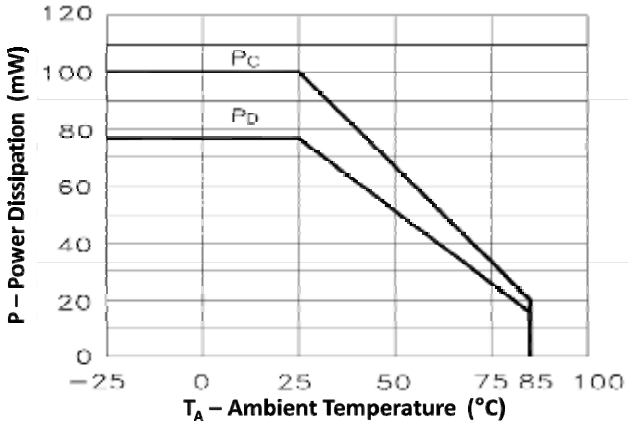


Fig 1 Power Dissipation vs Ambient Temperature

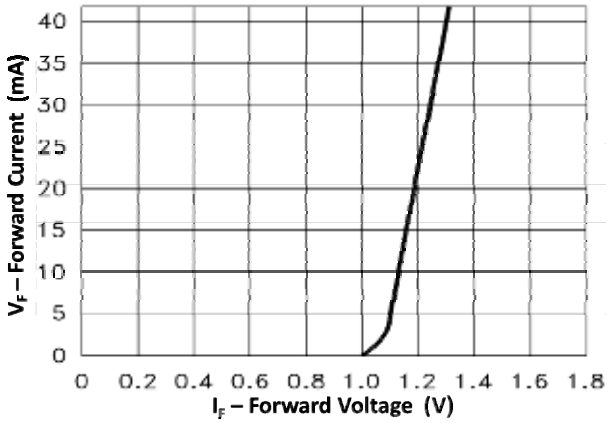


Fig 2 Forward Current vs Forward Voltage

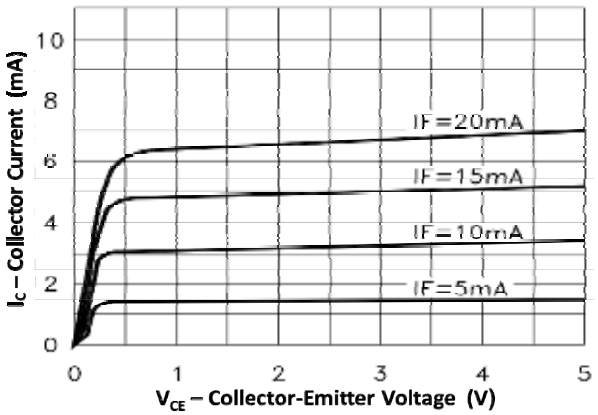


Fig 3 Collector Current vs Collector-Emitter Voltage

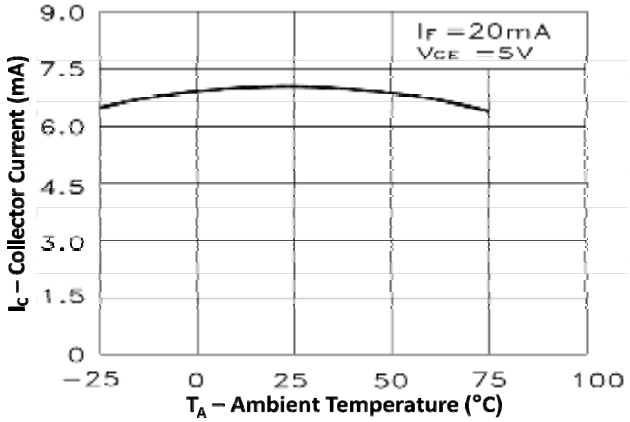


Fig 4 Collector Current vs Ambient Temperature

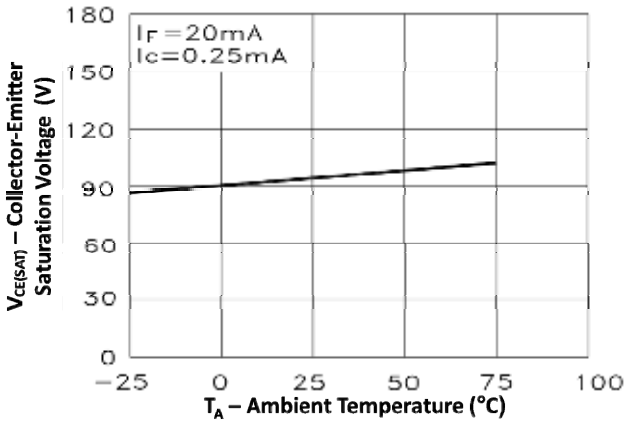


Fig 5 Collector-Emitter Saturation Voltage vs T_A

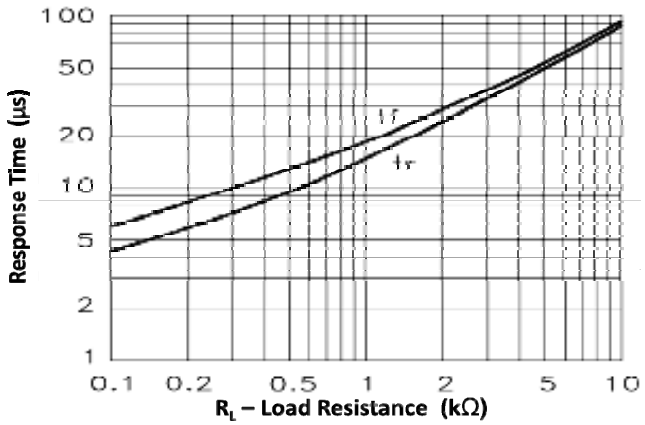
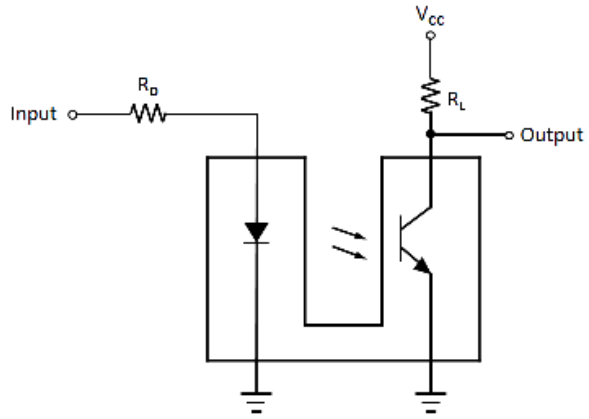
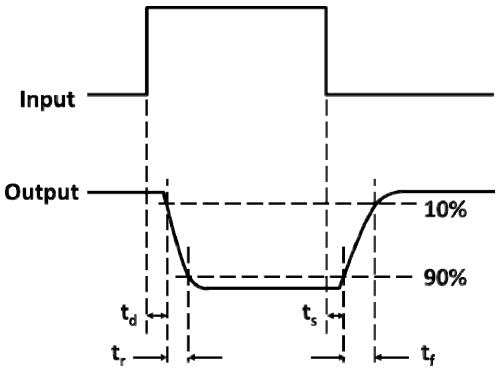


Fig 6 Response Time vs Load Resistance



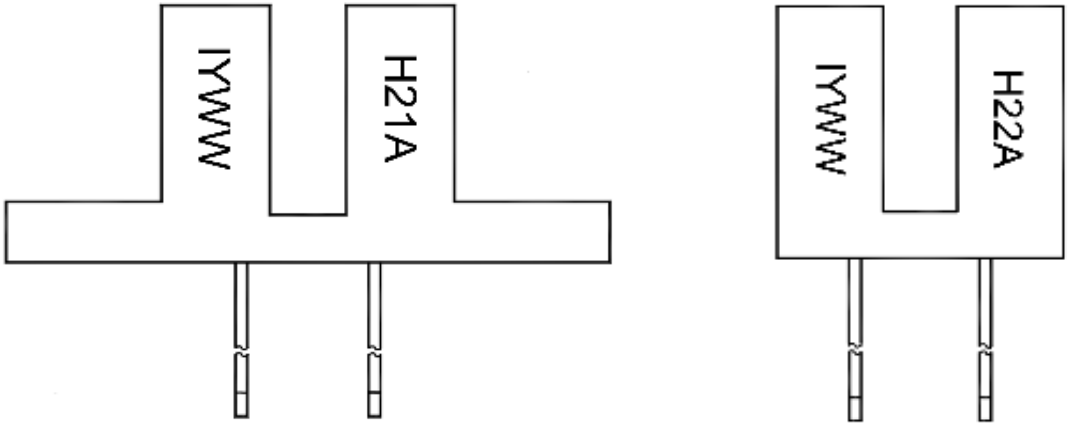


Test Circuit for Response Time

ORDER INFORMATION

H21Ax, H22Ax			
After PN	**PN**	**Description**	**Packing quantity**
None	H21A1, H21A2, H21A3 H22A1, H22A2, H22A3	Bulk Package	500pcs

DEVICE MARKING



H21A / H22A	denotes Device Part Number
I	denotes Isocom
Y	denotes 1 digit Year code
WW	denotes 2 digit Week code

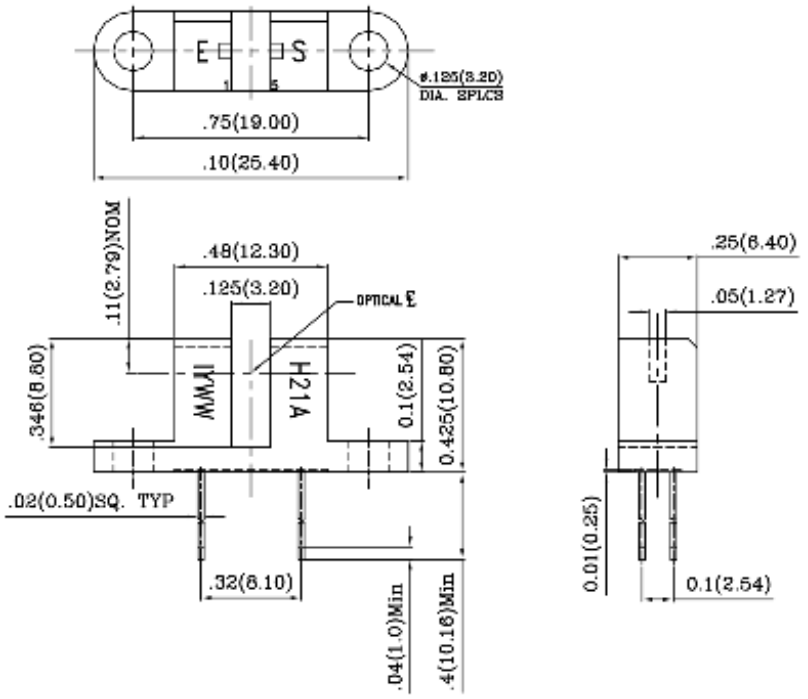
Note : H21A Type will be Marked “H21A”
H22A Type will be Marked “H22A”

H21Ax, H22Ax

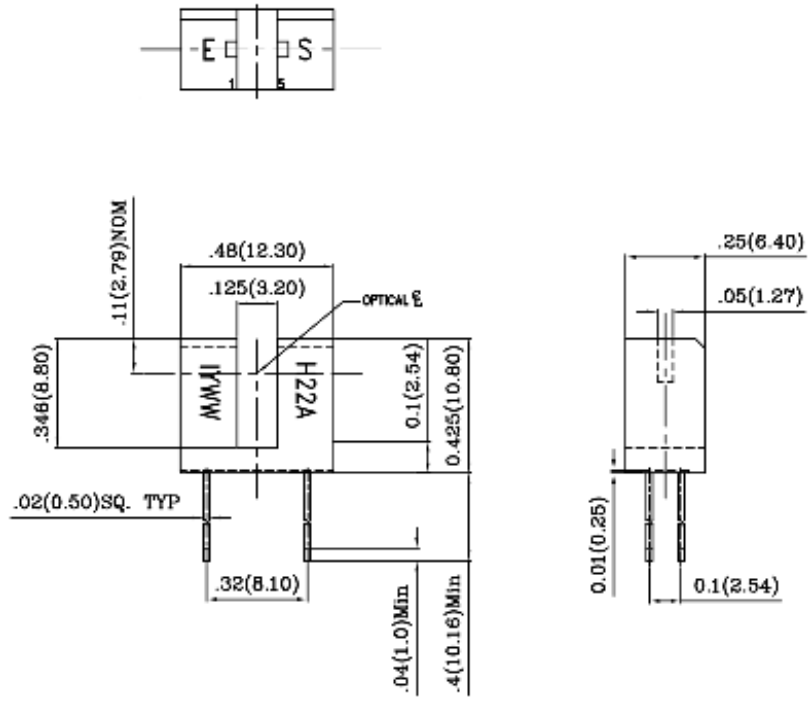
PACKAGE DIMENSIONS in inch(mm)

Tolerance : ±.010" (0.25mm) unless otherwise noted.

H21A



H22A



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- For equipment/application where high reliability or safety is required, such as space applications, nuclear power control equipment, medical equipment, etc., please contact our sales representatives.

- When requiring a device for any ”specific” application, please contact our sales for advice.

- The contents described herein are subject to change without prior notice.

- Do not immerse device body in solder paste.

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