

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.

ISOCOM

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

FEATURES

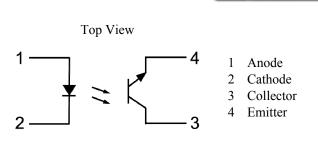
- High Gain
- 3mm Gap between LED and Detector
- Polycarbonate Case Protection against
 Ambient Light
- Pb Free and RoHS Compliant
- Safety Approvals Pending

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

Total Package

Power Dissipation

-25 to 85 °C
-55 to 100 °C
260°C

100mW

can adversely affect reliability.

ISOCOM COMPONENTS 2004 LTD

Unit 25B, Park View Road West, Park View Industrial Estate Hartlepool, Cleveland, TS25 1PE, United Kingdom Tel : +44 (0)1429 863 609 Fax : +44 (0)1429 863 581 e-mail : sales@isocom.co.uk http://www.isocom.com ISOCOM COMPONENTS ASIA LTD Hong Kong Office, Block A, 8/F, Wah Hing Industrial mansion, 36 Tai Yau Street, San Po Kong, Kowloon, Hong Kong. Tel : +852 2995 9217 Fax : +852 8161 6292 e-mail : sales@isocom.com.hk



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

INPUT

Parameter	Symbol	Test Condition	Min	Тур.	Max	Unit
Forward Voltage	\mathbf{V}_{F}	$I_F = 20 m A$		1.2	1.6	V
Reverse Current	I _R	$V_R = 5V$			100	μΑ

OUTPUT

Parameter	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector-Emitter Dark Current	I _{CEO}	$V_{CE} = 10V$			100	nA

COUPLED

Parameter	Symbol	Test Condition	Min	Тур.	Мах	Unit
On-State	I _{C(ON)}	H21A1, H22A1				mA
Collector Current		$I_F = 5mA$, $V_{CE} = 5V$	0.15			
		$I_F = 20mA, V_{CE} = 5V$	1.0			
		$I_F = 30 m A, V_{CE} = 5 V$	1.9			
		H21A2, H22A2				
		$I_F = 5mA$, $V_{CE} = 5V$	0.3			
		$I_F = 20mA, V_{CE} = 5V$	2.0			
		$I_F = 30 m A, V_{CE} = 5 V$	3.0			
		H21A3, H22A3				
		$I_F = 5mA$, $V_{CE} = 5V$	0.6			
		$I_F = 20mA, V_{CE} = 5V$	4.0			
		$I_{\rm F} = 30 {\rm mA}, V_{\rm CE} = 5 {\rm V}$	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	Тур.	Max	Unit
Output Rise Time (10% to 90%)	t _r	$V_{CE} = 5V I_C = 2mA$ $R_L = 100\Omega,$		3	15	μs
Output Fall Time (90% to 10%)	t _f			4	20	



H21Ax, H22Ax

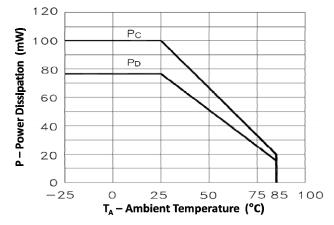


Fig 1 Power Dissipation vs Ambient Temperature

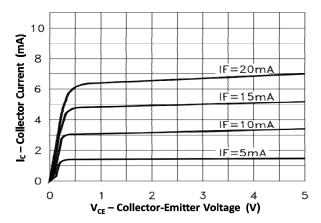
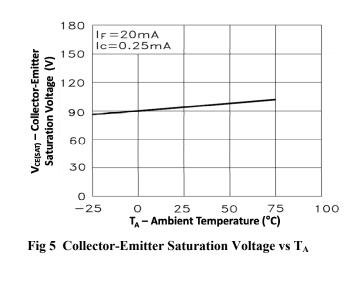


Fig 3 Collector Current vs Collector-Emitter Voltage



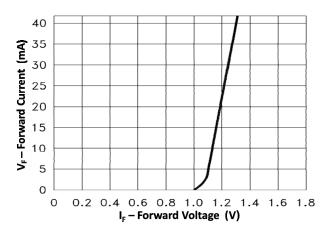


Fig 2 Forward Current vs Forward Voltage

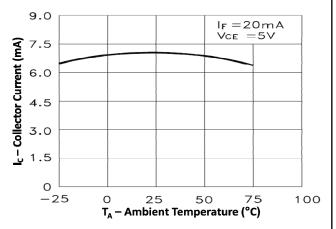


Fig 4 Collector Current vs Ambient Temperature



H21Ax, H22Ax

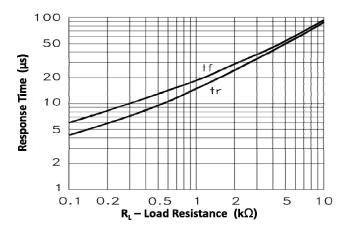
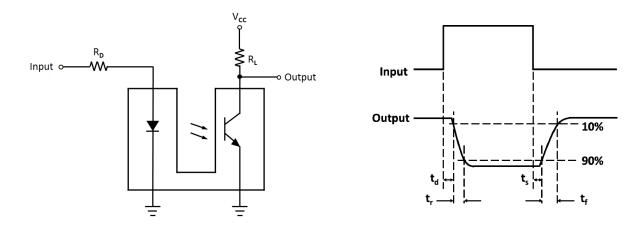


Fig 6 Response Time vs Load Resistance



Test Circuit for Response Time

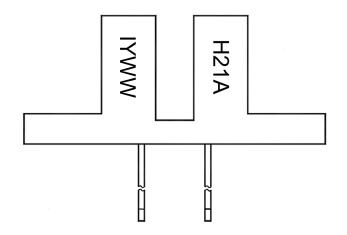
H21Ax, H22Ax

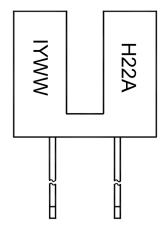
ORDER INFORMATION

ISOCOM COMPONENTS

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

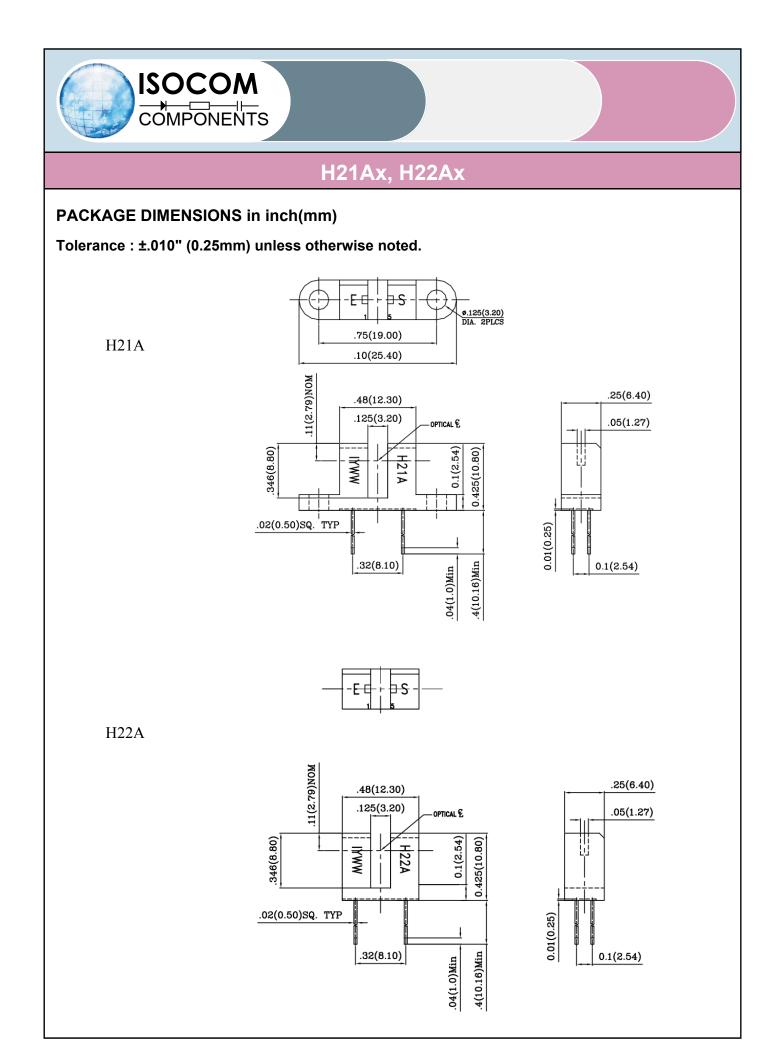
DEVICE MARKING





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"





NOTES :

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- The products shown in this publication are designed for the general use in electronic applications such as office automation equipment, communications devices, audio/visual equipment, electrical application and instrumentation.
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- 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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COMPONENTS



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