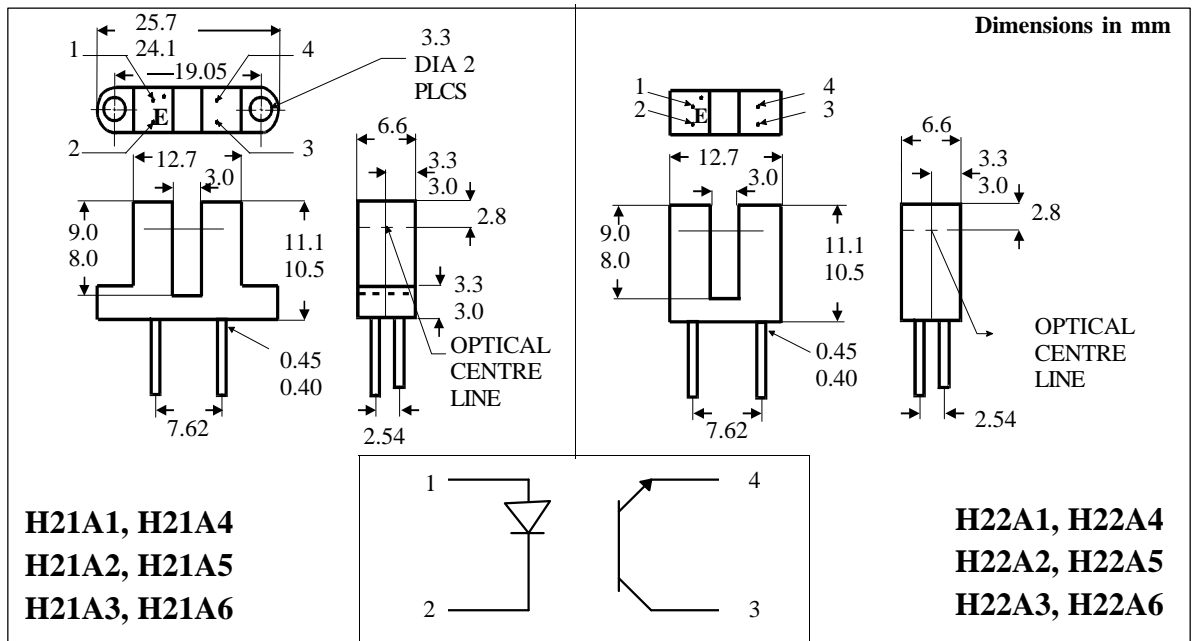


H21A1, H21A2, H21A3, H21A4, H21A5, H21A6
H22A1, H22A2, H22A3, H22A4, H22A5, H22A6



1mm APERTURE OPTO-ELECTRONIC SINGLE CHANNEL SLOTTED INTERRUPTER SWITCHES WITH TRANSISTOR SENSORS



DESCRIPTION
The H21A_ and H22A_ 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 an infrared emitting diode and a photo sensor switching the output from an "ON" state to an "OFF" state.

- FEATURES**
- High Gain
 - 3mm Gap between LED and Detector
 - Polycarbonate case protected against ambient light

- APPLICATIONS**
- Copiers, Printers, Facsimilies, Record Players, Cassette Decks, Optoelectronic Switches

**ABSOLUTE MAXIMUM RATINGS
(25°C unless otherwise specified)**

Storage Temperature _____ -40°C to + 85°C
Operating Temperature _____ -25°C to + 85°C
Lead Soldering Temperature
(1/16 inch (1.6mm) from case for 10 secs) 260°C

INPUT DIODE

Forward Current _____ 50mA
Reverse Voltage _____ 5V
Power Dissipation _____ 75mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO}
H21A4, 5, 6, H22A4, 5, 6 _____ 55V
H21A1, 2, 3, H22A1, 2, 3 _____ 30V
Emitter-collector Voltage BV_{ECO} _____ 5V
Collector Current I_C _____ 20mA
Power Dissipation _____ 75mW

ISOCOM COMPONENTS LTD
Unit 25B, Park View Road West,
Park View Industrial Estate, Brenda Road
Hartlepool, Cleveland, TS25 1YD
Tel: (01429) 863609 Fax :(01429) 863581

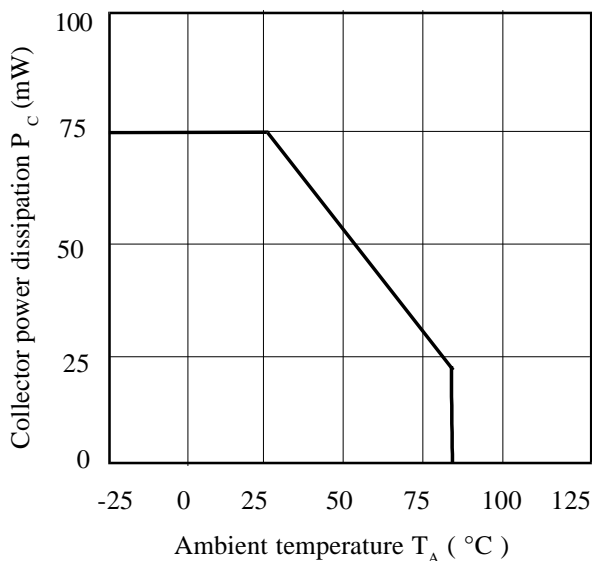
ISOCOM INC
720 E., Park Boulevard, Suite 104,
Plano, TX 75074 USA
Tel: (972) 423-5521
Fax: (972) 422-4549

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

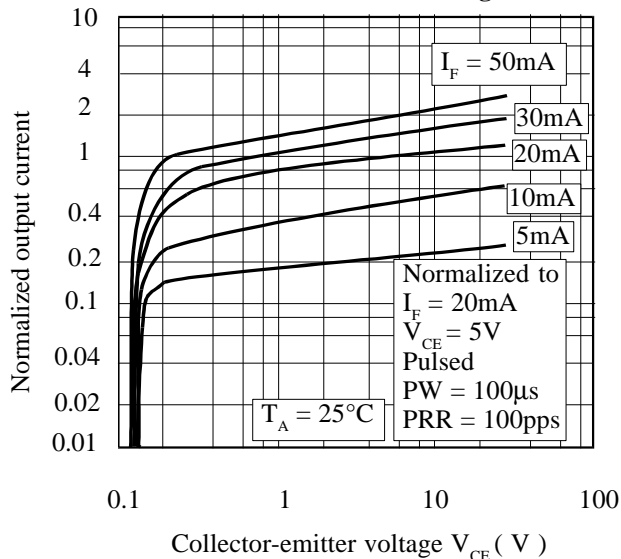
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION							
Input	Forward Voltage (V_F)		1.2	1.7	V	$I_F = 50\text{mA}$ $I_R = 100\mu\text{A}$ $V_R = 5\text{V}$							
	Reverse Voltage (V_R)	5			V								
	Reverse Current (I_R)			100	μA								
Output	Collector-emitter Breakdown (BV_{CEO}) (Note 1)					$I_C = 1\text{mA}$ $I_C = 1\text{mA}$ $I_E = 100\mu\text{A}$ $V_{CE} = 10\text{V}$							
	H21A4, 5, 6, H22A4, 5, 6	55			V								
	H21A1, 2, 3, H22A1, 2, 3	30			V								
	Emitter-collector Breakdown (BV_{ECO}) Collector-emitter Dark Current (I_{CEO})	5		100	V nA								
Coupled	On-State Collector Current $I_{C(ON)}$ (Note 1)					$5\text{mA } I_F, 5\text{V } V_{CE}$ $20\text{mA } I_F, 5\text{V } V_{CE}$ $30\text{mA } I_F, 5\text{V } V_{CE}$ $5\text{mA } I_F, 5\text{V } V_{CE}$ $20\text{mA } I_F, 5\text{V } V_{CE}$ $30\text{mA } I_F, 5\text{V } V_{CE}$ $5\text{mA } I_F, 5\text{V } V_{CE}$ $20\text{mA } I_F, 5\text{V } V_{CE}$ $30\text{mA } I_F, 5\text{V } V_{CE}$ $5\text{mA } I_F, 5\text{V } V_{CE}$ $20\text{mA } I_F, 5\text{V } V_{CE}$ $30\text{mA } I_F, 5\text{V } V_{CE}$							
							H21A1, 4, H22A1, 4	0.15			mA		
								1.0			mA		
								1.9			mA		
							H21A2, 5, H22A2, 5	0.3			mA		
								2.0			mA		
								3.0			mA		
							H21A3, 6, H22A3, 6	0.6			mA		
								4.0			mA		
								5.5			mA		
							Collector-emitter Saturation Voltage $V_{CE(SAT)}$						
							H21A2, 3, 5, 6, H22A2, 3, 5, 6			0.4	V	$20\text{mA } I_F, 1.8\text{mA } I_C$	
							H21A1, 4, H22A1, 4			0.4	V	$30\text{mA } I_F, 1.8\text{mA } I_C$	
Turn-on Time t_{on}		8		μs	$V_{CC} = 5\text{V},$ $I_F = 30\text{mA}, R_L = 2.5\text{k}\Omega$								
Turn-off Time t_{off}		50		μs									

Note 1 Special Selections are available on request. Please consult the factory.

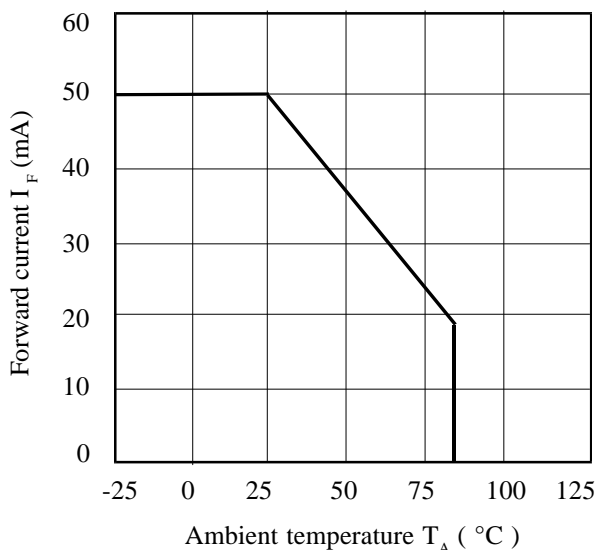
Collector Power Dissipation vs. Ambient Temperature



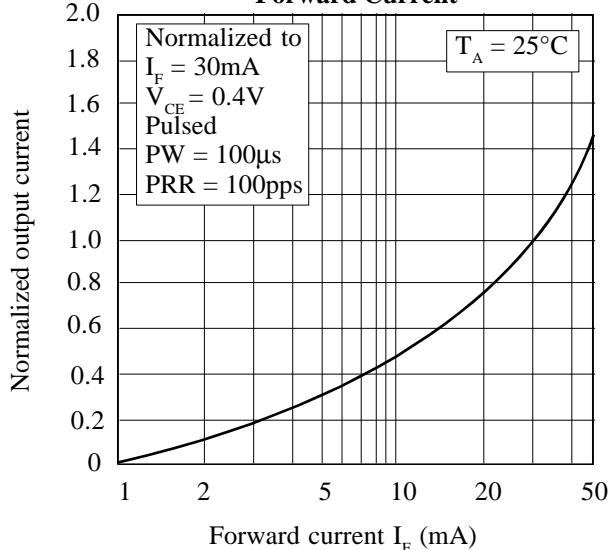
Normalized Output Current vs. Collector-emitter Voltage



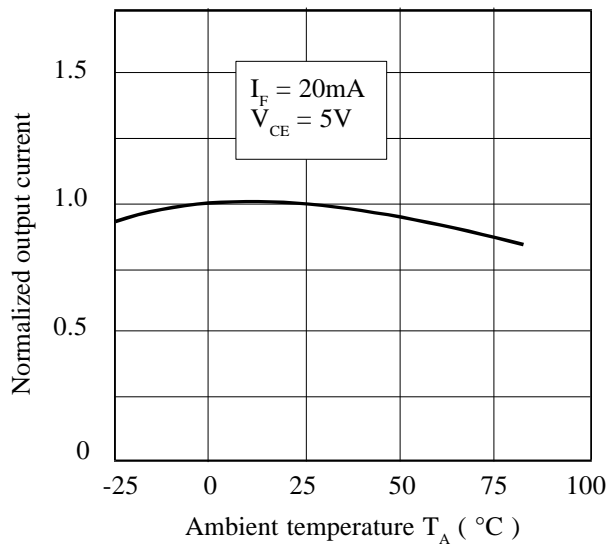
Forward Current vs. Ambient Temperature



Normalized Output Current vs. Forward Current



Normalized Output Current vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature

