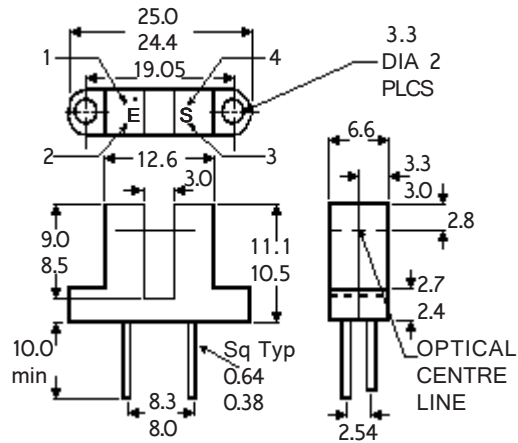


H21A1, H21A2, H21A3,
H22A1, H22A2, H22A3,

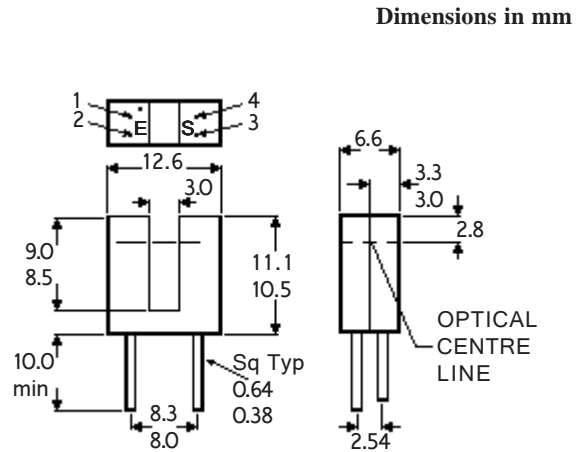
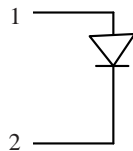


ISOCOM
COMPONENTS

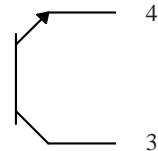
1mm APERTURE OPTO-ELECTRONIC SINGLE CHANNEL SLOTTED INTERRUPTER SWITCHES WITH TRANSISTOR SENSORS



H21A Type
Device will be
Marked " H21A "



H22A Type
Device will be
Marked " H22A "



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} _____ 30V
Emitter-collector Voltage BV_{ECO} _____ 5V
Collector Current I_C _____ 20mA
Power Dissipation _____ 75mW

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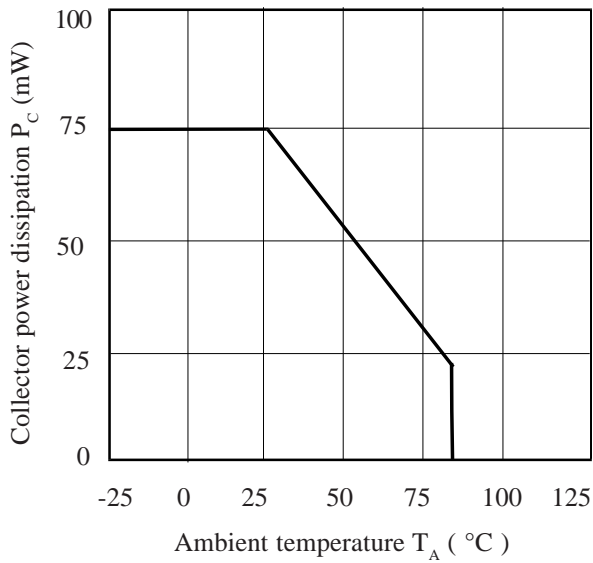
Unit 25B, Park View Road West,
Park View Industrial Estate, Brenda Road
Hartlepool, TS25 1YD England Tel: (01429)863609
Fax : (01429) 863581 e-mail sales@isocom.co.uk
<http://www.isocom.com>

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

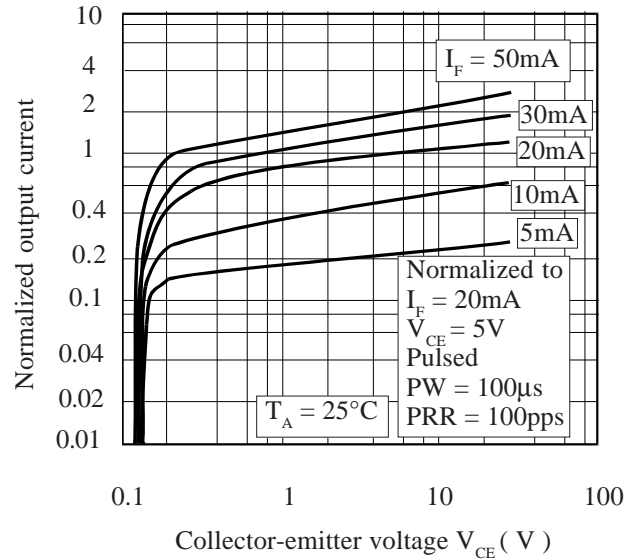
| PARAMETER | | MIN | TYP | MAX | UNITS | TEST CONDITION | |
|---------------|--|--------------------|------|-----|---------------|--|--|
| Input | Forward Voltage (V_F) | | 1.2 | 1.7 | V | $I_F = 50\text{mA}$ $I_R = 100\mu\text{A}$ $V_R = 5\text{V}$ | |
| | Reverse Voltage (V_R) | 5 | | | V | | |
| | Reverse Current (I_R) | | | 100 | μA | | |
| Output | Collector-emitter Breakdown (BV_{CEO}) | 30 | | | V | $I_C = 1\text{mA}$ | |
| | Emitter-collector Breakdown (BV_{ECO}) Collector-emitter Dark Current (I_{CEO}) | 5 | | 100 | V nA | $I_E = 100\mu\text{A}$ $V_{CE} = 10\text{V}$ | |
| Coupled | On-State Collector Current $I_C(\text{ON})$ (Note 1) | H21A1, H22A1 | 0.15 | | | mA | $5\text{mA } I_F, 5\text{V } V_{CE}$ $20\text{mA } I_F, 5\text{V } V_{CE}$ $30\text{mA } I_F, 5\text{V } V_{CE}$ $5\text{mA } I_F, 5\text{V } V_{CE}$ $20\text{mA } I_F, 5\text{V } V_{CE}$ $30\text{mA } I_F, 5\text{V } V_{CE}$ $5\text{mA } I_F, 5\text{V } V_{CE}$ $20\text{mA } I_F, 5\text{V } V_{CE}$ $30\text{mA } I_F, 5\text{V } V_{CE}$ |
| | | | 1.0 | | | mA | |
| | | | 1.9 | | | mA | |
| | H21A2, H22A2 | 0.3 | | | mA | | |
| | | 2.0 | | | mA | | |
| | | 3.0 | | | mA | | |
| | H21A3, H22A3 | 0.6 | | | mA | | |
| | | 4.0 | | | mA | | |
| | | 5.5 | | | mA | | |
| | Collector-emitter Saturation Voltage $V_{CE(\text{SAT})}$ | H21A2, 3, H22A2, 3 | | | 0.4 | V | |
| | H21A1, H22A1 | | | 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.

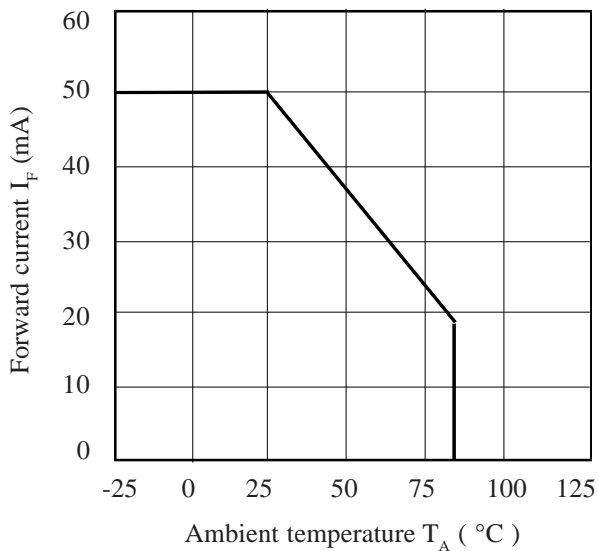
Collector Power Dissipation vs. Ambient Temperature



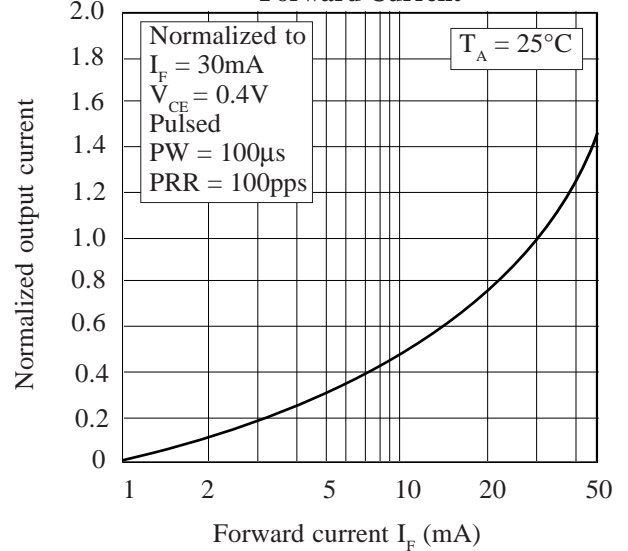
Normalized Output Current vs. Collector-emitter Voltage



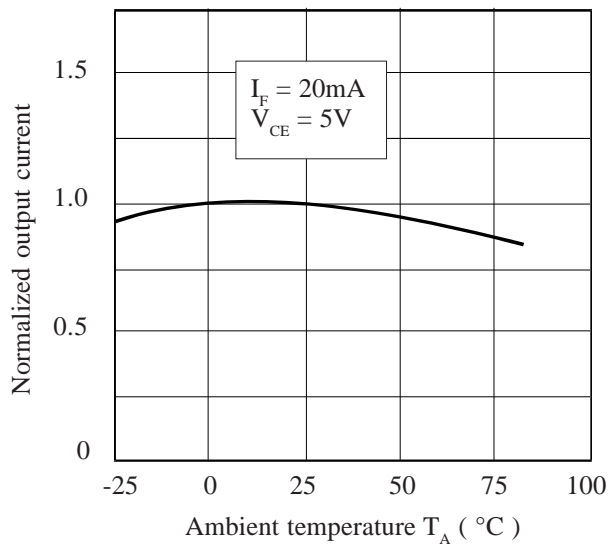
Forward Current vs. Ambient Temperature



Normalized Output Current vs. Forward Current



Normalized Output Current vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature

