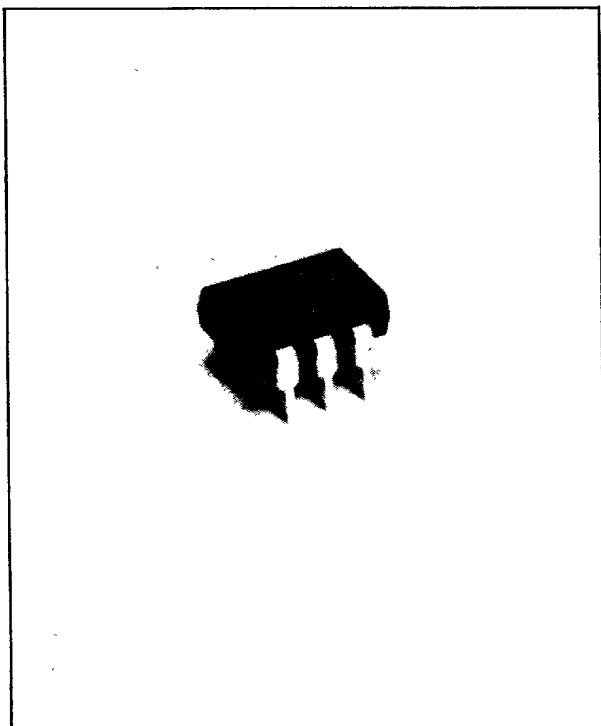




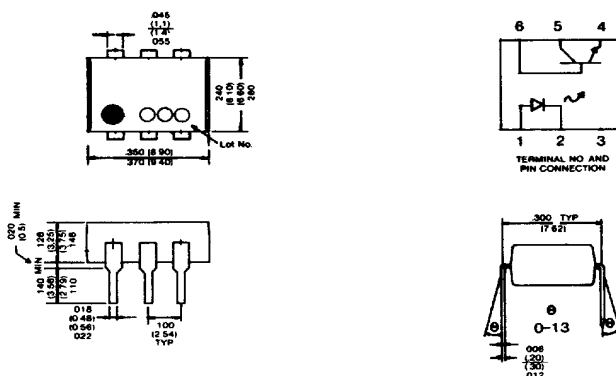
H1A 1

OPTICALLY COUPLED ISOLATORS

ISOCOM, INC.
274 E. HAMILTON AVE.
SUITE F
CAMPBELL, CA. 95008



PACKAGE DIMENSIONS IN INCHES (MM)



ABSOLUTE MAXIMUM RATINGS (25°C unless otherwise noted)

Storage Temperature -55°C to +150°C
Operating Temperature -55°C to +100°C
Lead Soldering Temperature
(1/16 inch (1.6 mm) from case for 10 seconds) 260°C
Input-to-Output Isolation Voltage ± 2500 V

FEATURES

- 2500 V Isolation
- High DC current transfer ratio (50% min)
- Low cost dual-in-line package

DESCRIPTION

The H1A 1 is a optically coupled isolator consisting of a Gallium Arsenide infrared emitting diode and a NPN silicon photo-transistor mounted in a standard 6-pin dual-in-line package.

All electrical parameters are 100% tested. Specifications are guaranteed to a cumulative 0.65% AQL.

Input Diode

Forward D.C. Current 60 mA
Reverse D.C. Voltage 3 V
Peak forward current (1 μ s p.w. 300 pps) 3 A
Power Dissipation
(derate linearly 1.33 mW/°C above 25°C) 100 mW

Output Transistor

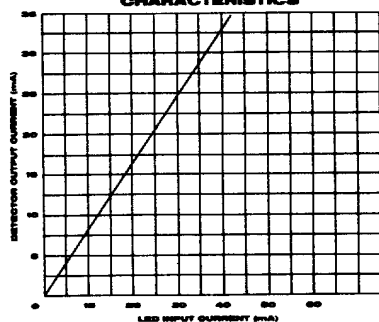
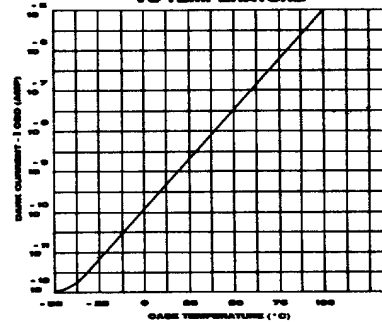
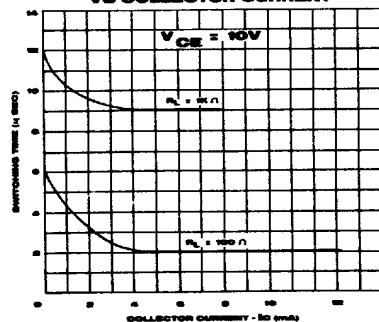
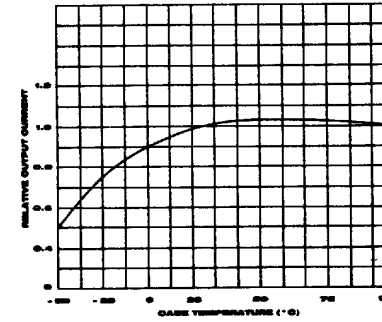
Collector-emitter voltage BV_{CEO} 30 V
Emitter-collector voltage BV_{ECO} 7 V
Collector-base voltage BV_{CBO} 70 V
Power Dissipation
(derate linearly 2.00 mW/°C above 25°C) 150 mW

Package

Total Power Dissipation
(derate linearly 3.3 mW/°C above 25°C) 250 mW

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

Parameter		Min.	Typ	Max.	Units	Test Condition
Input	Forward Voltage (V_F)			1.5	Volt	$I_F = 10 \text{ mA}$
	Reverse Current (I_R)			10	μA	$V_R = 3.0 \text{ V}$
	Reverse Breakdown Voltage (V_R)	3.0			Volt	$I_R = 10 \mu\text{A}$
Output	Collector-emitter Voltage (BV_{CEO})	30			Volt	$I_C = 1 \text{ mA}$
	Emitter-collector Voltage (BV_{ECO})	7			Volt	$I_E = 100 \mu\text{A}$
	Collector-base Voltage (BV_{CBO})	70			Volt	$I_C = 100 \mu\text{A}$
	Collector-emitter Dark Current (I_{CEO})			50	nA	$V_{CE} = 10 \text{ V}, I_B = 0$
	Collector-base Dark Current (I_{CBO})			20	nA	$V_{CB} = 10 \text{ V}, I_E = 0$
	Collector-emitter Capacitance (C_{CE}) H_{FE}	100	10 150		pf	$V_{CE} = 0$ $V_{CE} = 5.0 \text{ V}, I_C = 100 \mu\text{A}$
Coupled	DC Current Transfer Ratio I_C/I_F	50			%	$I_F = 10 \text{ mA}, V_{CE} = 10 \text{ V}$ $I_B = 0$
	Input-to-Output Isolation Resistance (R_{IO})	10^{11}			% ohm	$V_{IO} = 500 \text{ V}$, (note 1)
	Collector-emitter Saturation Voltage $V_{CE}(\text{SAT})$			0.4	Volt	$I_F = 10 \text{ mA}, I_C = 0.5 \text{ mA}$
	Capacitance Input to Output (C_{IO})		0.6		pf	$F = 1 \text{ mhz}$ (note 1)
	Output Rise Time (T_R)		2.0		μs	$V_{CC} = 10 \text{ V}, I_C = 2 \text{ mA}$
	Output Fall Time (T_F)		2.0		μs	$R_L = 100 \Omega$
Coupled	Input-to-Output Isolation Voltage	2500			Volt	(note 1)

FIG 1:
TRANSFER
CHARACTERISTICSFIG 2:
DARK CURRENT
VS TEMPERATUREFIG 3:
SWITCHING TIME
VS COLLECTOR CURRENTFIG 4:
RELATIVE OUTPUT
VS TEMPERATURE

Note 1. Measured with input leads shorted together and output leads shorted together