IS3H4

INPUT
(COMPACT RANGE)

ISOCOM COMPONENTS

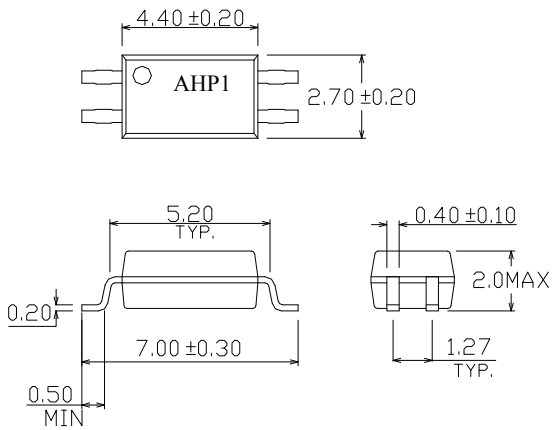
ROHS COMPLIANT

DESCRIPTION

The IS3H4 is an optically coupled isolator consisting of two infrared light emitting diodes in inverse parallel and an NPN silicon photo transistor. It belongs to Isocom's Compact range of opto-couplers

FEATURES

- Low profile package (half pitch)
- Bi-Directional input
- AC Isolation test voltage 3750V_{RMS}
- Low coupling capacitance typically 0.6pF
- CTR selections available
- Wide temperature range
- Lead free



APPLICATIONS

- Power Supply Feedback Voltage/Current
- Industrial system controllers
- Measuring instruments
- Ring detection on telephone lines
- Signal transmission between systems of different potentials and impedance

ORDER INFORMATION

- Available in Tape and Reel with 1000 and 5000 pieces per reel

MARKING INFORMATION

Please note that the device will be marked with the generic part number "AHP1" the date code will also be marked on the device.

ABSOLUTE MAXIMUM RATINGS

Input Diode

Forward Current	±50mA
Reverse Voltage	6V
Power dissipation	70mW

Output Transistor

Collector to Emitter Voltage	80V
Emitter to Collector Voltage	6V
Collector Current	50mA
Power Dissipation	150mW

Total Package

Isolation test Voltage	3750V_{RMS}
Operating Temperature	-55 to 100 C
Storage Temperature	-55 to 125 C

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IS3H4 AC Input (Compact Range)

ELECTRICAL CHARACTERISTICS

Ambient Temperature = 25°C unless otherwise specified

INPUT

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward Voltage	V_F	I_F = 50mA		1.25	1.6	V
Reverse Leakage	I_R	V_R = 6V			10	µA
Junction Capacitance	C_j	V_R = 0V, f = 1 MHz		50		pF

OUTPUT

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector—Emitter breakdown Voltage	BV_{CEO}	I_C = 100µA	80			V
Emitter—Collector breakdown Voltage	BV_{ECO}	I_E = 100µA	6			V
Collector dark Current	I_{CEO}	V_{CE} = 20V, I_F = 0mA			100	nA

COUPLED

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Current transfer ratio	CTR	I_F = ±1mA, V_{CE} = 5V	20		300	%
Collector—Emitter saturation Voltage	V_{CEsat}	I_F = ±20mA, I_C = 1mA			0.2	V
Input to output isolation Voltage	V_{ISO}	See note 1	3750			V_{RMS}
Output rise time	t_r	V_S =2V,Ic = 2mA, Rl = 100Ω		6	18	µS
Output fall time	t_f	V_S = 2V,Ic = 2mA, Rl = 100Ω		6	18	µS
Cut off frequency	f_c	I_F = 10mA, V_{CE} = 5V, R_L = 100Ω		100		kHz
Floating Capacitance	C_{IO}	f = 1 MHz		0.6	1.0	pF

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

IS3H4 AC Input (Compact Range)

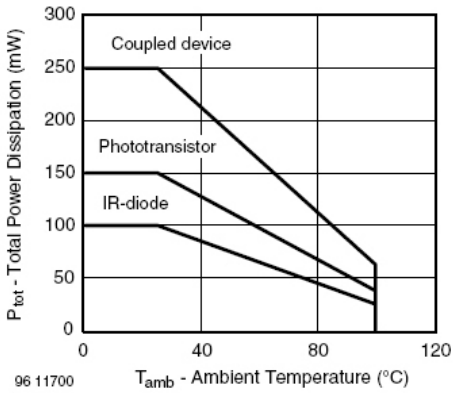

Figure 4.Total Power Dissipation vs. Ambient Temperature

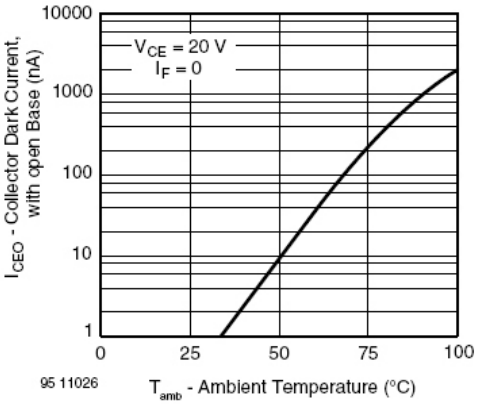

Figure 7. Collector Dark Current vs. Ambient Temperature

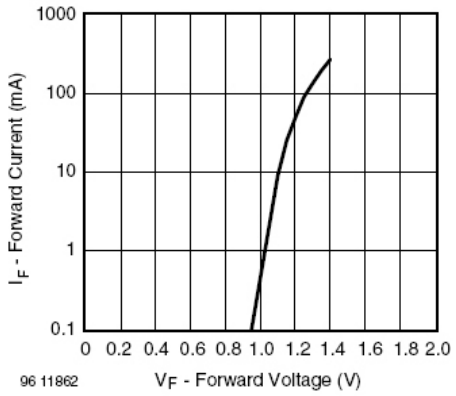

Figure 5. Forward Current vs. Forward Voltage

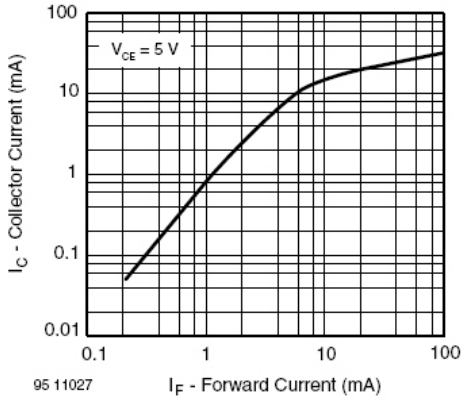

Figure 8. Collector Current vs. Forward Current

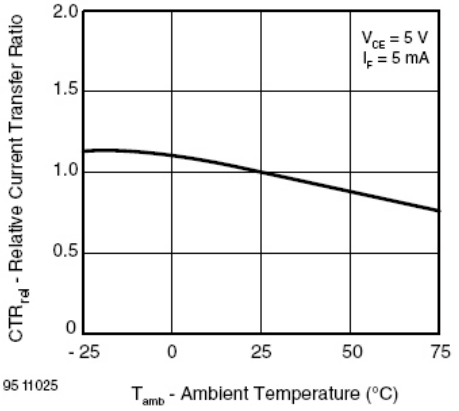

Figure 6. Relative Current Transfer Ratio vs. Ambient Temperature

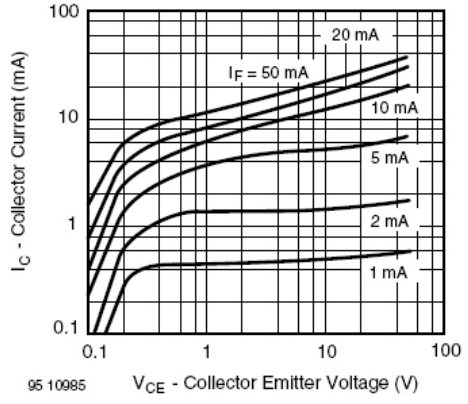

Figure 9. Collector Current vs. Collector Emitter Voltage

IS3H4 AC Input (Compact Range)

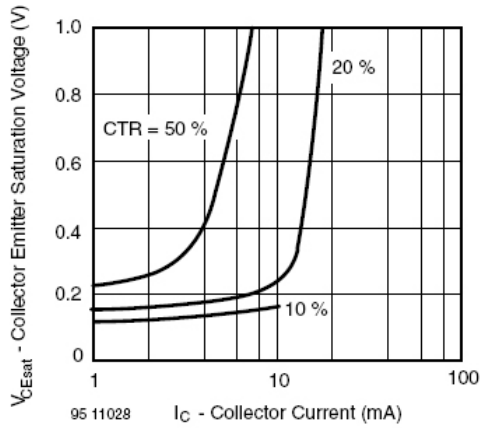

Figure 10. Collector Emitter Saturation Voltage vs. Collector Current

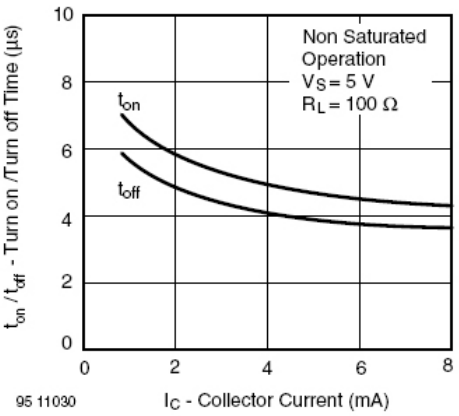

Figure 13. Turn on/off Time vs. Collector Current

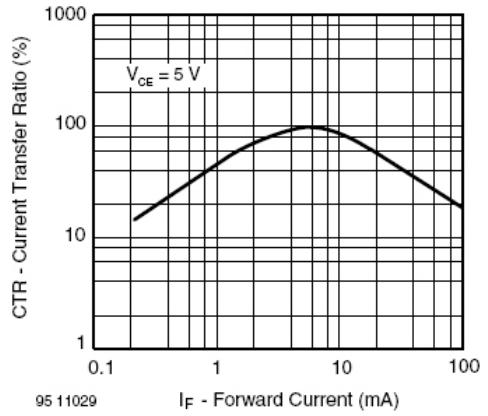

Figure 11. Current Transfer Ratio vs. Forward Current

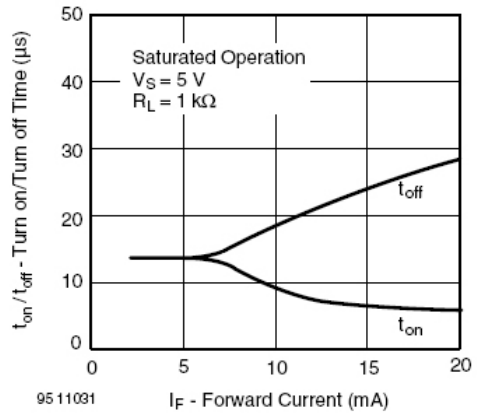

Figure 12. Turn on/off Time vs. Forward Current