

TRANSISTOR AC INPUT OPTOCOUPLEDERS

PACKAGES	CIRCUIT

DESCRIPTION

The IS844-1 is a quad channel device. Each channel consisting of a bi-directional input opto-isolator consists of two Gallium Arsenide infrared emitting diodes connected in inverse parallel coupled to a silicon NPN phototransistor in a 16 pin package.

Isocom Ltd supplies a multitude of plastic optocouplers for all applications varying from standard transistor optos through to Darlington and Schmitt Trigger devices. It's massive family of optos vary in speed allowing maximum opportunity to engineers worldwide.

All devices are performance guaranteed between -20°C and +80°C and have completed rigorous testing. The Company's customers can be assured of our commitment to stringent quality, reliability and inspection standards, as demonstrated by our existing approvals. Other customer specific options can also be offered.

FEATURES

- 5000V Isolation
- AC or Polarity Insensitive Inputs
- Compact Dual-in-line Package
- Current Transfer Ratio (Min 20% at $I_F = \pm 1\text{mA}$, $V_{CE} = 5\text{V}$)
- UL Recognised, file No E64380

Isocom Ltd reserves the right to change the details on this specification without notice. Please consult Isocom Ltd prior to use.

Isocom Ltd cannot accept liability for any errors or omissions.

For sales enquiries, or further information, please contact our sales office at :

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Or go to the Isocom Website @ : [Http://www.isocomoptocouplers.com](http://www.isocomoptocouplers.com)

ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-55°C to +125°C
Operating Temperature	-30°C to +100°C
Lead Soldering Temperature	260°C 1.6mm from case for 10S
Input-to-Output Isolation Voltage	5000VDC

Input Diode

Forward DC Current	±50mA	
Peak forward Current	±1.0A	
Power Dissipation	70mW	

Output Transistor

Collector-Emitter Voltage	35V	BV_{CEO}
Emitter-Collector voltage	6V	BV_{ECO}
Collector-Current	50mA	I_C
CollectorPower Dissipation	150mW	P_C

Package

Total Power Dissipation	200mW	P_{tot}
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ELECTRICAL CHARACTERISTICS

$T_A = 25^\circ\text{C}$ U.O.S. (each channel where appropriate).

Input Diode Electrical Characteristics

Parameter	Symbol	Test Conditions	Device	Min	Typ	Max	Units
Forward Voltage	V_F	$I_F = \pm 20\text{mA}$			1.2	1.4	V
Peak Forward Voltage	V_{FM}	$I_{FM} = \pm 0.5\text{A}$				3.0	V
Terminal Capacitance	C_t	$V = 0, f = 1\text{KHz}$			50	250	pF

Output Detector Electrical Characteristics

Collector-emitter Dark Current	I_{CEO}	$V_{CE} = 20\text{V}, I_F = 0$				10^{-7}	A
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Coupled Electrical Characteristics

Current Transfer ratio	CTR	$I_F = \pm 1\text{mA}, V_{CE} = 5\text{V}$		20		300	%
Collector-Emitter saturation voltage	$V_{CE(sat)}$	$I_F = \pm 20\text{mA}, I_C = 1\text{mA}$			0.1	0.2	V
Isolation Resistance	R_{ISO}	DC= 500V, 40 to 60% RH		5×10^{10}	10^{11}		Ω
Floating Capacitance	C_f	$V = 0, f = 1\text{Mhz}$			0.6	1.0	pF
Cut-off Frequency	f_c	$V_{CE} = 5\text{V}, I_C = 2\text{mA}, R_L = 100\Omega$		15	80		Khz
Responce time (Rise)	t_r	$V_{CC} = 2\text{V}, I_C = 2\text{mA}, R_L = 100\Omega$			4	18	μS
Responce time (Fall)	t_f				3	18	μS
Isolation Voltage	V_{ISO}			5000			V

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