

# CNW11AV1 TRANSISTOR OPTOCOUPLEDERS



PACKAGES	CIRCUIT

## DESCRIPTION

The CNW11AV1X/2X/3X is an optically coupled isolator. It consists of a Gallium Arsenide infrared emitting diode and a NPN silicon phototransistor mounted in a standard 6-pin plastic dual-in-line 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

- 4000V Isolation
- 8mm (min) Creeping Distance between Emitter & Detector Leads
- Designed for VDE and British Standards Applications

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.

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## ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-55°C to +150°C
Operating Temperature	-55°C to +100°C
Lead Soldering Temperature	260°C 1.6mm from case for 10S
Input-to-Output Isolation Voltage	↑4000VDC

### Input Diode

Forward DC Current	60mA	
Reverse DC Voltage	6V	
Peak forward Current	3A	1μS p.w. 300 pps
Power Dissipation	100mW	Derate linearly above 25°C at 1.33mW/°C.

### Output Transistor

Collector-Emitter Voltage	70V	BV <sub>CEO</sub>
Emitter-collector voltage	7V	BV <sub>ECO</sub>
Collector-base voltage	70V	BV <sub>CBO</sub>
Power Dissipation	300mW	Derate linearly above 25°C at 2.0mW/°C

## ELECTRICAL CHARACTERISTICS

T<sub>A</sub> = 25°C U.O.S. (each channel where appropriate).

### Input Diode Electrical Characteristics

Parameter	Symbol	Test Conditions	Device	Min	Typ	Max	Units
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 10mA		0.8		1.5	V
		I <sub>F</sub> = 10mA, T <sub>A</sub> = -55°C		0.9		1.7	V
		I <sub>F</sub> = 10mA, T <sub>A</sub> = +100°C				1.4	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> = 6.0V				10	μA

### Output Detector Electrical Characteristics

Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	I <sub>C</sub> = 1mA		70			V
Emitter-base Voltage	BV <sub>EBO</sub>	I <sub>E</sub> = 100μA		7			V
Collector-base Voltage	BV <sub>CBO</sub>	I <sub>C</sub> = 100μA		70			V
Collector-emitter Dark Current	I <sub>CEO</sub>	V <sub>CE</sub> = 10V, I <sub>F</sub> = 0				50	nA
Collector-emitter Capacitance	C <sub>CE</sub>	V <sub>CE</sub> = 10V, f = 1Mhz			2.0		pF

### Coupled Electrical Characteristics

DC Current Transfer Ratio	I <sub>C</sub> /I <sub>F</sub>	I <sub>F</sub> = 10mA, V <sub>CE</sub> = 10V	AV1X AV2X AV3X	100 50 20		300	%
Input-to-Output Isolation Resistance	R <sub>ISO</sub>	V <sub>IO</sub> = 500V		10 <sup>11</sup>			Ω
Collector-Emitter Saturation Voltage	V <sub>CE(Sat)</sub>	I <sub>F</sub> = 20mA, I <sub>C</sub> = 2mA				0.4	V
Capacitance Input to Output	C <sub>IO</sub>	f = 1Mhz				0.5	pF
Turn-on Time	T <sub>ON</sub>	V <sub>CC</sub> = 10V, I <sub>C</sub> = 2mA, R <sub>L</sub> = 100Ω				15	μS
Turn-off Time	T <sub>OFF</sub>					15	μS
Input-to-Output Isolation Voltage				4000			V

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