

**H11AV1X, H11AV2X, H11AV3X  
H11AV1, H11AV2, H11AV3**



## OPTICALLY COUPLED ISOLATOR PHOTOTRANSISTOR OUTPUT

### APPROVALS

- UL recognised, File No. E91231
- 'X' SPECIFICATION APPROVALS**
  - VDE 0884 in 3 available lead form : -
    - STD
    - G form
    - SMD approved to CECC 00802
- Certified to EN60950 by the following Test Bodies :-
  - Nemko - Certificate No. P01102464
  - Fimko - Certificate No. FI18166
  - Semko - Reference No. 0202037/01-22
  - Demko - Certificate No. 311158-01
- BSI approved - Certificate No. 8001

### DESCRIPTION

The H11AV series of optically coupled isolators consist of infrared light emitting diode and NPN silicon photo transistor in a standard 6 pin dual in line plastic package.

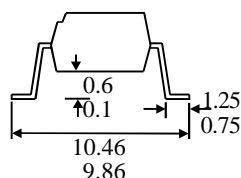
### FEATURES

- Options :-
  - 10mm lead spread - add G after part no.
  - Surface mount - add SM after part no.
  - Tape&reel - add SMT&R after part no.
- High Isolation Voltage (5.3kV<sub>RMS</sub>, 7.5kV<sub>PK</sub>)
- High BV<sub>CEO</sub> (70V min)
- All electrical parameters 100% tested
- Custom electrical selections available

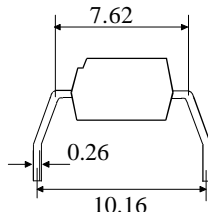
### APPLICATIONS

- DC motor controllers
- Industrial systems controllers
- Measuring instruments
- Signal transmission between systems of different potentials and impedances

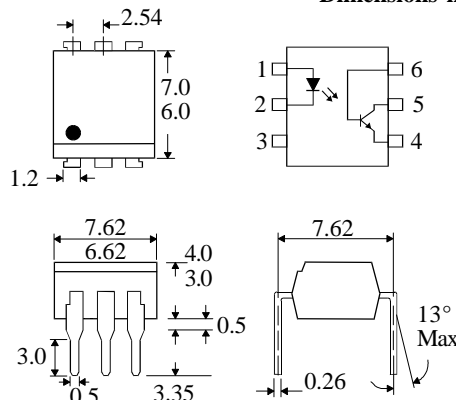
#### OPTION SM SURFACE MOUNT



#### OPTION G



#### Dimensions in mm



### ABSOLUTE MAXIMUM RATINGS (25°C unless otherwise specified)

Storage Temperature \_\_\_\_\_ -55°C to + 150°C  
 Operating Temperature \_\_\_\_\_ -55°C to + 100°C  
 Lead Soldering Temperature  
 (1/16 inch (1.6mm) from case for 10 secs) 260°C

### INPUT DIODE

Forward Current \_\_\_\_\_ 60mA  
 Reverse Voltage \_\_\_\_\_ 6V  
 Power Dissipation \_\_\_\_\_ 105mW

### OUTPUT TRANSISTOR

Collector-emitter Voltage BV<sub>CEO</sub> \_\_\_\_\_ 70V  
 Collector-base Voltage BV<sub>CBO</sub> \_\_\_\_\_ 70V  
 Emitter-collector Voltage BV<sub>ECO</sub> \_\_\_\_\_ 6V  
 Power Dissipation \_\_\_\_\_ 160mW

### POWER DISSIPATION

Total Power Dissipation \_\_\_\_\_ 200mW  
 (derate linearly 2.67mW/°C above 25°C)

**ISOCOM COMPONENTS LTD**  
 Unit 25B, Park View Road West,  
 Park View Industrial Estate, Brenda Road  
 Hartlepool, Cleveland, TS25 1YD  
 Tel: (01429) 863609 Fax : (01429) 863581

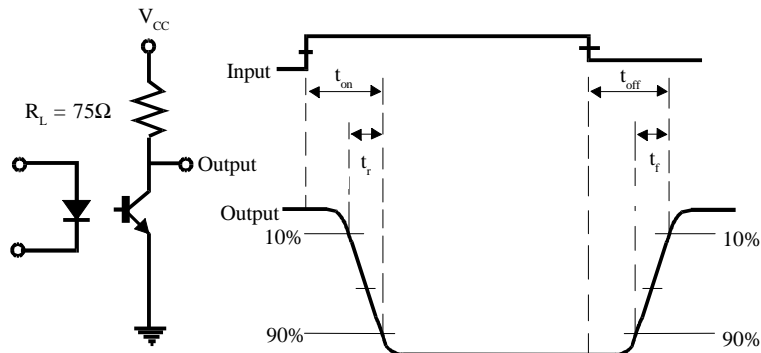
**ISOCOM INC**  
 1024 S. Greenville Ave, Suite 240,  
 Allen, TX 75002 USA  
 Tel: (214) 495-0755 Fax: (214) 495-0901  
 e-mail info@isocom.com  
 http://www.isocom.com

**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	1.5	V	$I_F = 10\text{mA}$
	Reverse Current ( $I_R$ )			10	$\mu\text{A}$	$V_R = 6\text{V}$
Output	Collector-emitter Breakdown ( $BV_{CEO}$ ) ( note 2 )	70			V	$I_C = 1\text{mA}$
	Collector-base Breakdown ( $BV_{CBO}$ )	70			V	$I_C = 100\mu\text{A}$
	Emitter-collector Breakdown ( $BV_{ECO}$ )	6			V	$I_E = 100\mu\text{A}$
	Collector-emitter Dark Current ( $I_{CEO}$ )			50	nA	$V_{CE} = 10\text{V}$
Coupled	Current Transfer Ratio (CTR) H11AV1	100		300	%	$10\text{mA } I_F, 10\text{V } V_{CE}$
	H11AV2	50			%	$10\text{mA } I_F, 10\text{V } V_{CE}$
	H11AV3	20			%	$10\text{mA } I_F, 10\text{V } V_{CE}$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.4	V	$20\text{mA } I_F, 2\text{mA } I_C$
	Input to Output Isolation Voltage $V_{ISO}$	5300 7500			$V_{RMS}$ $V_{PK}$	See note 1 See note 1
	Input-output Isolation Resistance $R_{ISO}$	$5 \times 10^{10}$			$\Omega$	$V_{IO} = 500\text{V}$ (note 1)
	Rise Time, $t_r$ Fall Time, $t_f$		2 2		$\mu\text{s}$ $\mu\text{s}$	$V_{CC} = 5\text{V}$ , fig 1 $I_F = 10\text{mA}, R_L = 75\Omega$

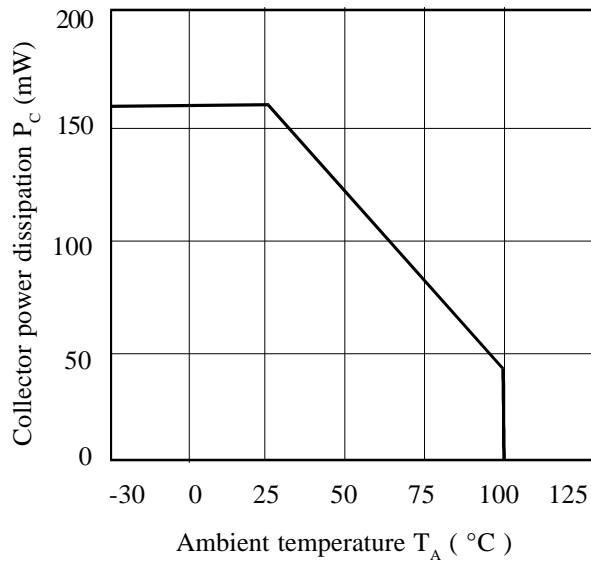
Note 1 Measured with input leads shorted together and output leads shorted together.

Note 2 Special Selections are available on request. Please consult the factory.

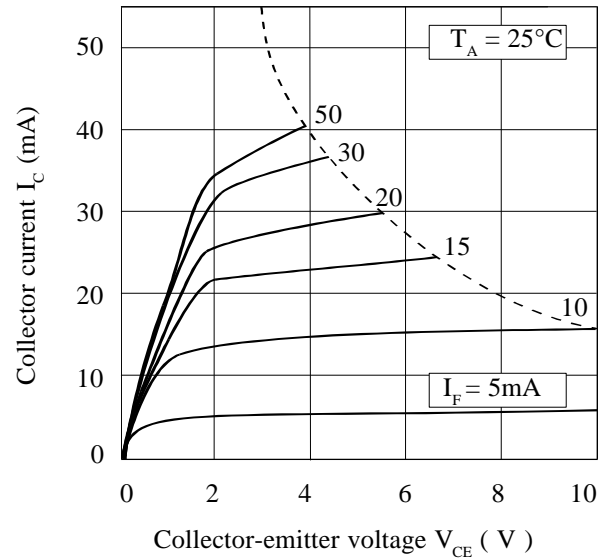


**FIG 1**

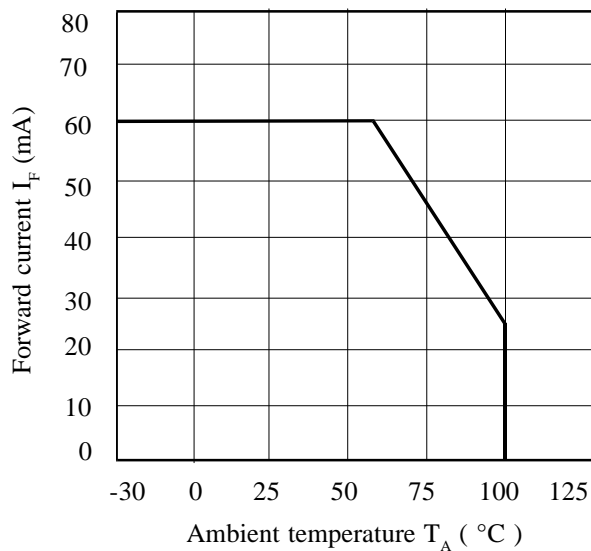
**Collector Power Dissipation vs. Ambient Temperature**



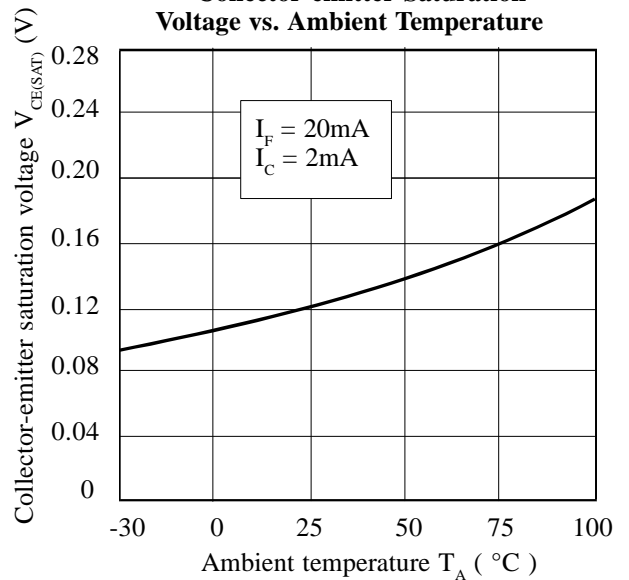
**Collector Current vs. Collector-emitter Voltage**



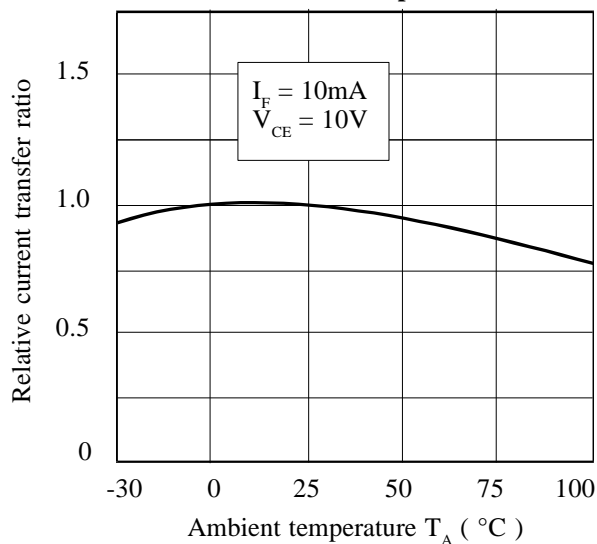
**Forward Current vs. Ambient Temperature**



**Collector-emitter Saturation Voltage vs. Ambient Temperature**



**Relative Current Transfer Ratio vs. Ambient Temperature**



**Relative Current Transfer Ratio vs. Forward Current**

