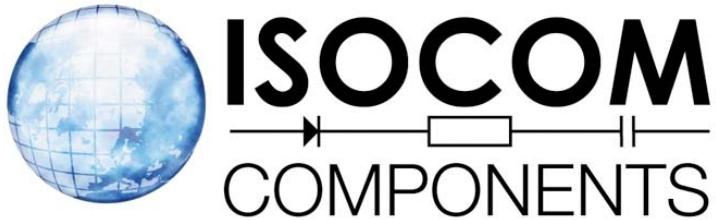


H11AA1, H11AA2, H11AA3, H11AA4  
H11AA1X, H11AA2X, H11AA3X, H11AA4X



## A.C. INPUT PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS



### APPROVALS

- UL recognised, File No. E91231

### 'X' SPECIFICATION APPROVALS

- VDE 0884 in 3 available lead form :-
  - STD
  - G form
  - SMD approved to CECC 00802

### DESCRIPTION

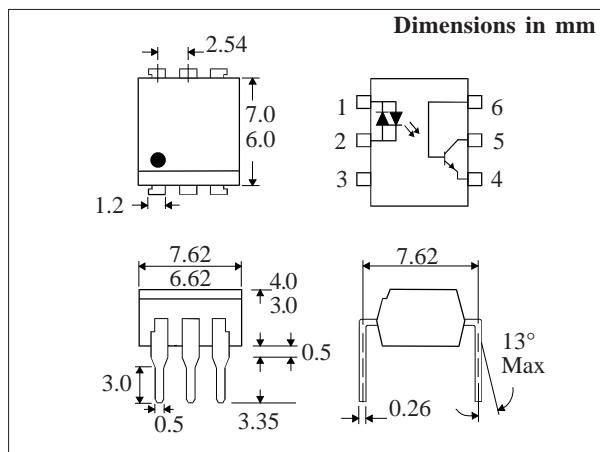
The H11AA series of optically coupled isolators consist of two infrared light emitting diodes connected in inverse parallel and NPN silicon photo transistor in a standard 6 pin dual in line plastic package.

### 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>)
- AC or polarity insensitive input
- All electrical parameters 100% tested
- Custom electrical selections available

### APPLICATIONS

- Computer terminals
- Industrial systems controllers
- Telephone sets, Telephone exchangers
- Signal transmission between systems of different potentials and impedances



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

Storage Temperature	-55°C to +125°C
Operating Temperature	-30°C to +100°C
Lead Soldering Temperature (1/16 inch (1.6mm) from case for 10 secs)	260°C

### INPUT DIODE

Forward Current	±50mA
Power Dissipation	70mW

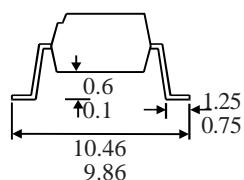
### OUTPUT TRANSISTOR

Collector-emitter Voltage BV <sub>CEO</sub>	35V
Collector-base Voltage BV <sub>CBO</sub>	35V
Emitter-collector Voltage BV <sub>ECD</sub>	6V
Emitter-base Voltage BV <sub>EBO</sub>	6V
Collector Current	50mA
Power Dissipation	150mW

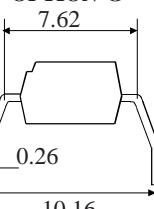
### POWER DISSIPATION

Total Power Dissipation	200mW
(derate linearly 4.67mW/°C above 25°C)	

#### OPTION SM SURFACE MOUNT



#### OPTION G



### ISOCOM COMPONENTS LTD

Unit 25B, Park View Road West,  
Park View Industrial Estate, Brenda Road  
Hartlepool, TS25 1UD England Tel: (01429) 863609  
Fax: (01429) 863581 e-mail sales@isocom.co.uk  
<http://www.isocom.com>

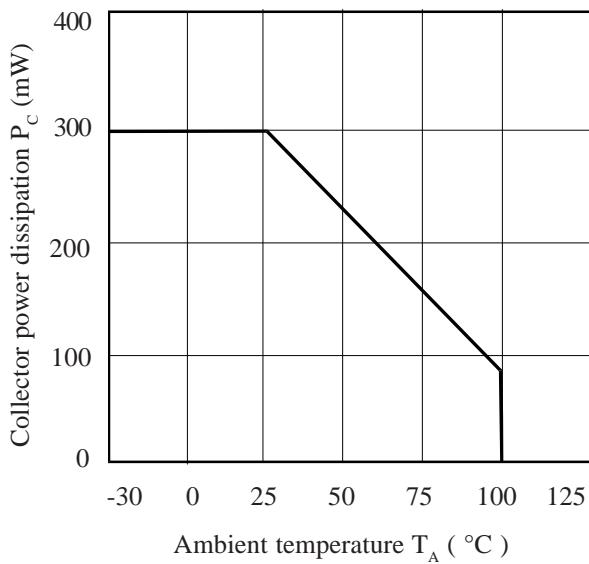
**ELECTRICAL CHARACTERISTICS (  $T_A = 25^\circ\text{C}$  Unless otherwise noted )**

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage ( $V_F$ )		1.2	1.5	V	$I_F = \pm 10\text{mA}$
Output	Collector-emitter Breakdown ( $BV_{CEO}$ ) ( note 2 )	35			V	$I_C = 0.1\text{mA}$
	Collector-base Breakdown ( $BV_{CBO}$ )	35			V	$I_C = 100\mu\text{A}$
	Emitter-base Breakdown ( $BV_{EBO}$ )	6			V	$I_E = 100\mu\text{A}$
	Emitter-collector Breakdown ( $BV_{ECO}$ )	6			V	$I_E = 10\mu\text{A}$
	Collector-emitter Dark Current ( $I_{CEO}$ )			100	nA	$V_{CE} = 20\text{V}$
Coupled	Current Transfer Ratio (CTR) (note 2)  H11AA4 H11AA3 H11AA1 H11AA2	100 50 20 10			%	$\pm 10\text{mA} I_F, 10\text{V} V_{CE}$ $\pm 10\text{mA} I_F, 10\text{V} V_{CE}$ $\pm 10\text{mA} I_F, 10\text{V} V_{CE}$ $\pm 10\text{mA} I_F, 10\text{V} V_{CE}$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$		0.4		V	$\pm 10\text{mA} I_F, 0.5\text{mA} I_C$
	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, $t_r$		4		$\mu\text{s}$	$V_{CE} = 2\text{V}, I_C = 2\text{mA}$
	Fall Time, $t_f$		3		$\mu\text{s}$	$R_L = 100\Omega$

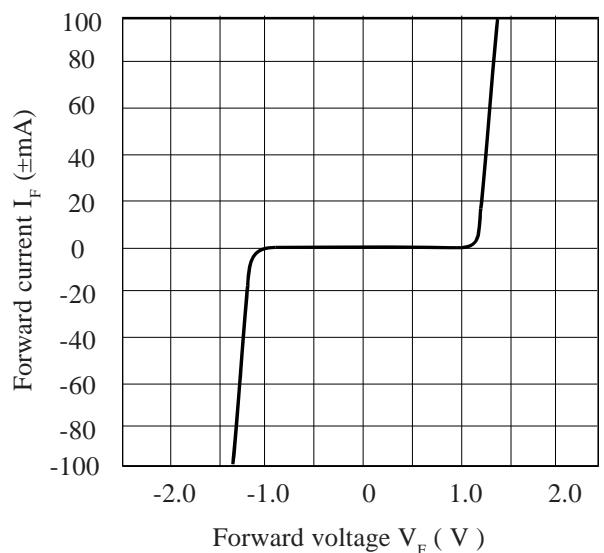
Note 1 Measured with input leads shorted together and output leads shorted together.

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

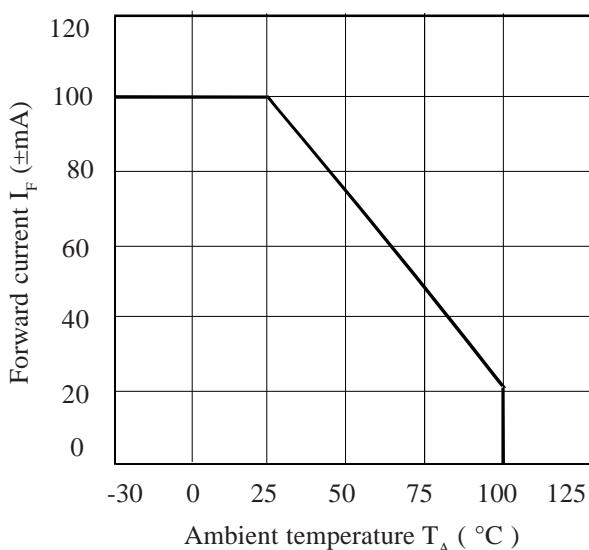
**Collector Power Dissipation vs. Ambient Temperature**



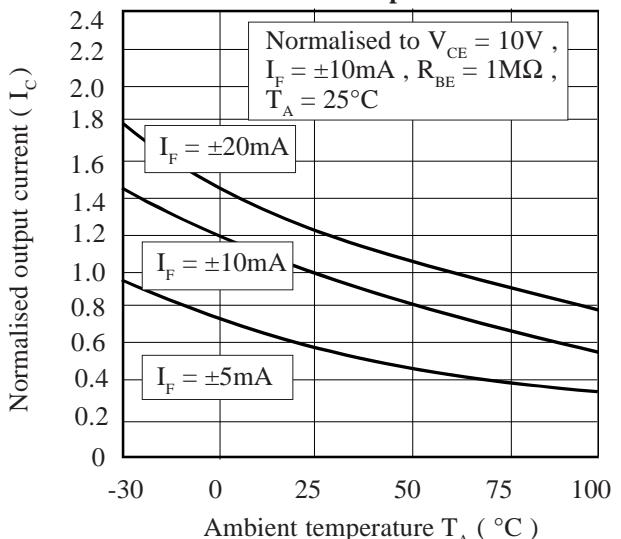
**Forward Current vs. Forward Voltage**



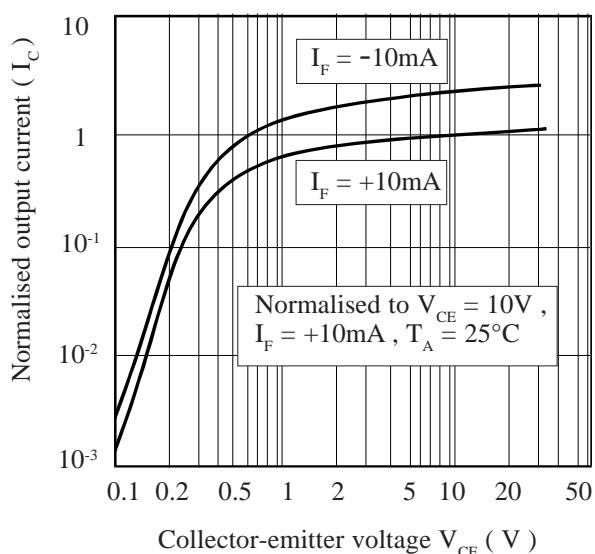
**Forward Current vs. Ambient Temperature**



**Normalised Output Current vs. Ambient Temperature**



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



**Normalised Output Current vs. Forward Current**

