

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



# ISOCOM

COMPONENTS

## A.C. INPUT PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS



### APPROVALS

- UL recognised, File No. E91231

### 'X' SPECIFICATION APPROVALS

- VDE0884 in 3 available lead form :-  
- STD  
- G form  
- SMD approved to CECC 00802

### DESCRIPTION

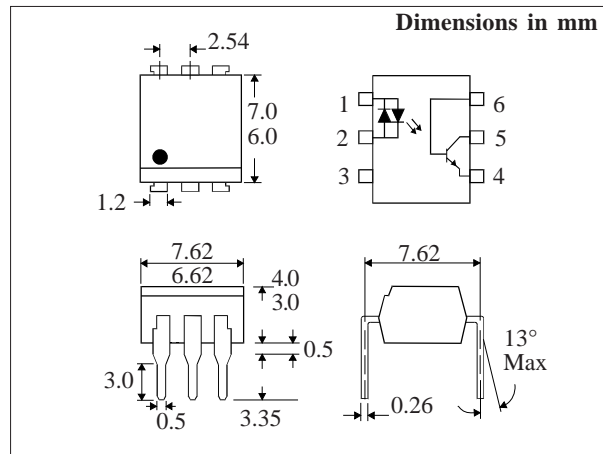
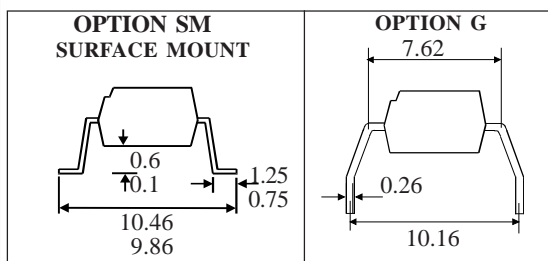
The H11AA series of optically coupled isolators consist of two infrared light emitting diodes connected in inverse parallel and NPN silicon photo transistor in a standard 6 pin dual in line plastic package.

### 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  $BV_{CEO}$  \_\_\_\_\_ 35V  
Collector-base Voltage  $BV_{CBO}$  \_\_\_\_\_ 35V  
Emitter-collector Voltage  $BV_{ECO}$  \_\_\_\_\_ 6V  
Emitter-base Voltage  $BV_{EBO}$  \_\_\_\_\_ 6V  
Collector Current \_\_\_\_\_ 50mA  
Power Dissipation \_\_\_\_\_ 150mW

### POWER DISSIPATION

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

### ISOCOM COMPONENTS LTD

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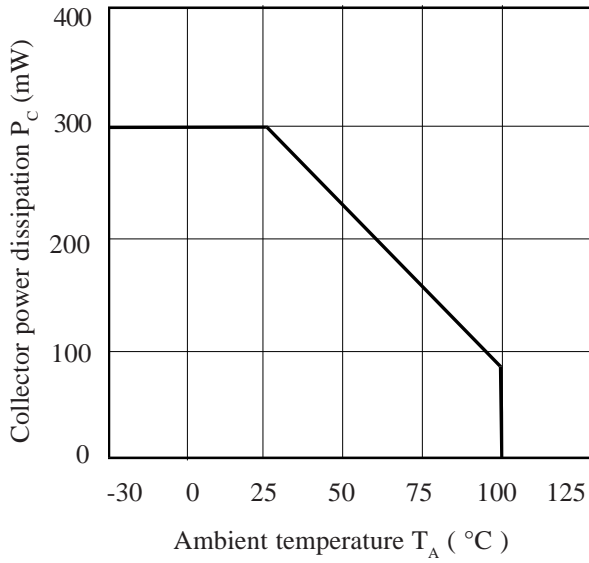
**ELECTRICAL CHARACTERISTICS (  $T_A = 25^\circ\text{C}$  Unless otherwise noted )**

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	100			%	$\pm 10\text{mA} I_F, 10\text{V } V_{CE}$
	H11AA3	50			%	$\pm 10\text{mA} I_F, 10\text{V } V_{CE}$
	H11AA1	20			%	$\pm 10\text{mA} I_F, 10\text{V } V_{CE}$
	H11AA2	10			%	$\pm 10\text{mA} I_F, 10\text{V } V_{CE}$
	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, tr		4		$\mu\text{S}$	$V_{CE} = 2\text{V}, I_C = 2\text{mA}$	
Fall Time, tf		3		$\mu\text{S}$	$R_L = 100\Omega$	

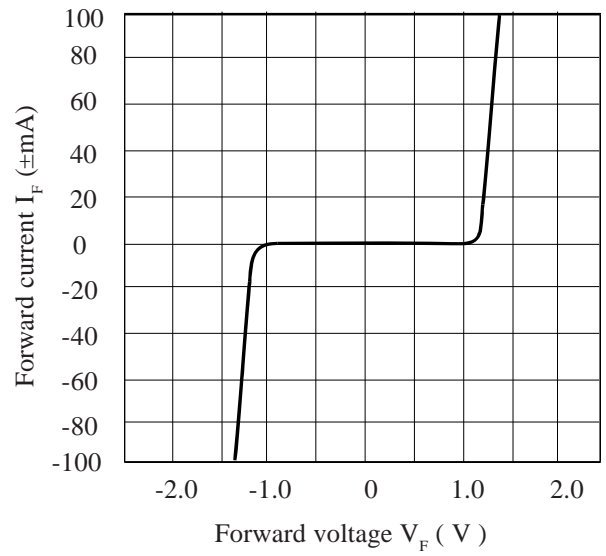
Note 1 Measured with input leads shorted together and output leads shorted together.

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

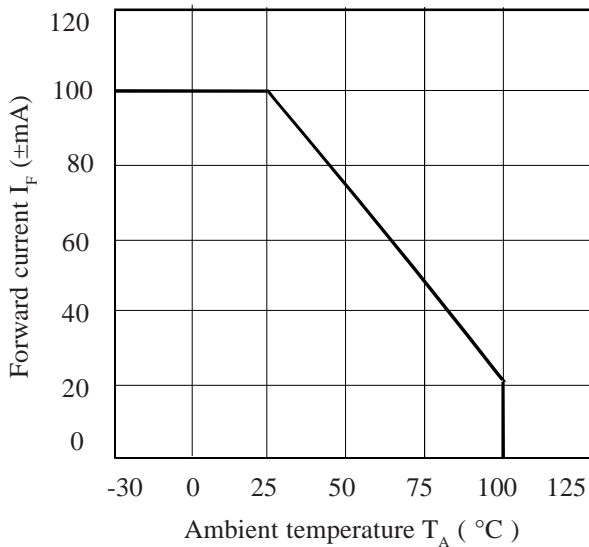
**Collector Power Dissipation vs. Ambient Temperature**



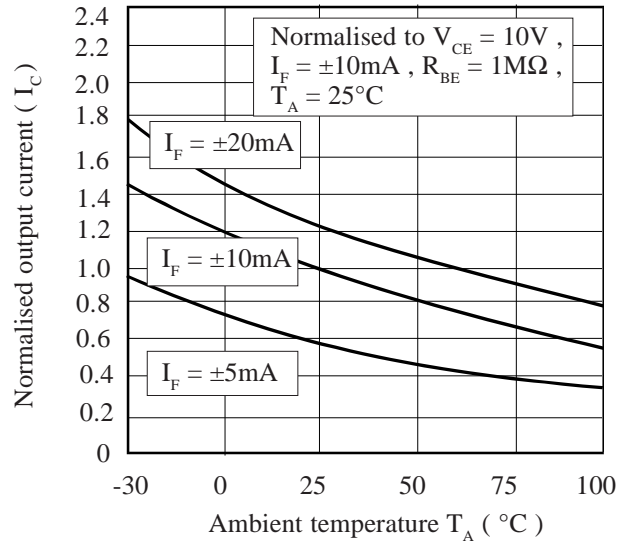
**Forward Current vs. Forward Voltage**



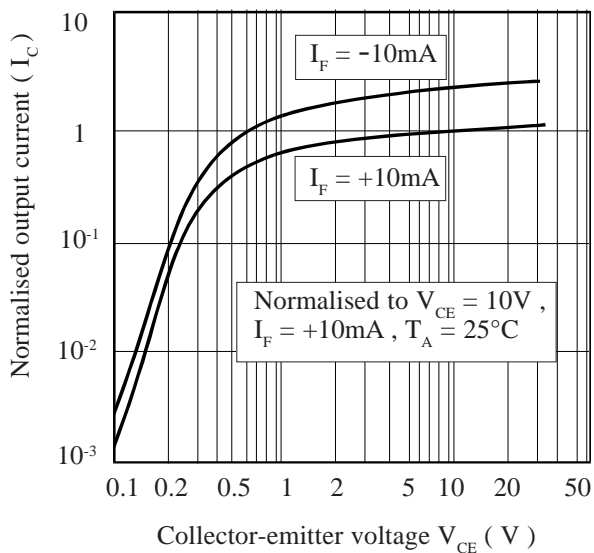
**Forward Current vs. Ambient Temperature**



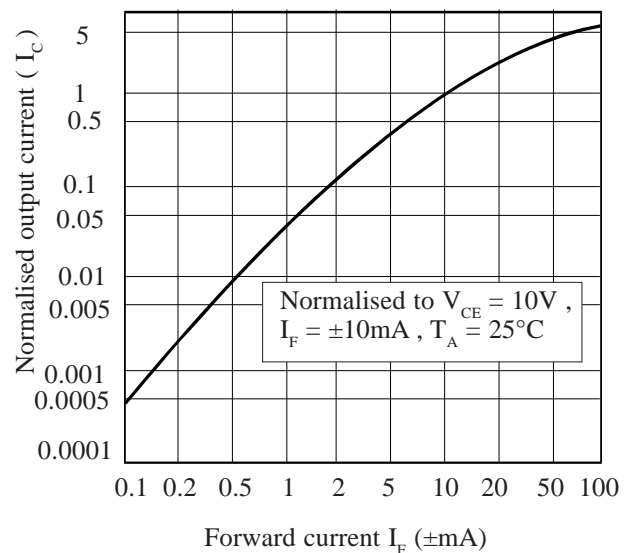
**Normalised Output Current vs. Ambient Temperature**



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



**Normalised Output Current vs. Forward Current**



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