

SFH620A-1, SFH620A-2, SFH620A-3  
SFH620A-1X, SFH620A-2X, SFH620A-3X



# ISOCOM

COMPONENTS



## AC INPUT PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS

### APPROVALS

- UL recognised, File No. E91231  
Package Code " EE "
- 'X' SPECIFICATION APPROVALS
  - VDE 0884 in 3 available lead form :-
    - STD
    - G form
    - SMD approved to CECC 00802

### DESCRIPTION

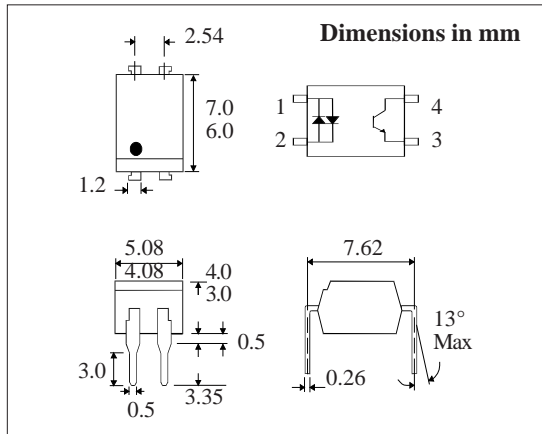
The SFH620A series of optically coupled isolators consist of inverse parallel infrared light emitting diodes and NPN silicon photo transistors in space efficient dual in line plastic packages.

### 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.
- Low input current  $\pm 1 \text{ mA } I_F$
- High Current Transfer Ratios  
(40-320% at  $\pm 10 \text{ mA}$ , 13% min at  $\pm 1 \text{ mA}$ )
- High Isolation Voltage ( $5.3 \text{ kV}_{\text{RMS}}, 7.5 \text{ kV}_{\text{PK}}$ )
- High  $BV_{\text{CEO}}$  (70V min)
- AC or polarity insensitive input
- All electrical parameters 100% tested
- Custom electrical selections available

### APPLICATIONS

- Computer terminals
- Industrial systems controllers
- Measuring instruments
- Telephone sets, Telephone exchanges
- 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 \_\_\_\_\_  $\pm 50 \text{ mA}$   
 Power Dissipation \_\_\_\_\_ 70mW

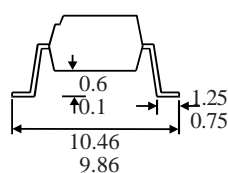
### OUTPUT TRANSISTOR

Collector-emitter Voltage  $BV_{\text{CEO}}$  \_\_\_\_\_ 70V  
 Emitter-collector Voltage  $BV_{\text{ECO}}$  \_\_\_\_\_ 6V  
 Collector Current \_\_\_\_\_ 50mA  
 Power Dissipation \_\_\_\_\_ 150mW

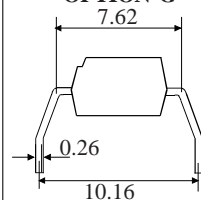
### POWER DISSIPATION

Total Power Dissipation \_\_\_\_\_ 200mW  
 (derate linearly 2.67mW/°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, Cleveland, TS25 1UD  
 Tel: (01429) 863609 Fax: (01429) 863581

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

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage ( $V_F$ )			1.65	V	$I_F = \pm 50\text{mA}$
Output	Collector-emitter Breakdown ( $BV_{CEO}$ ) (Note 2)	70			V	$I_C = 1\text{mA}$
	Emitter-collector Breakdown ( $BV_{ECO}$ )	6			V	$I_E = 100\mu\text{A}$
	Collector-emitter Dark Current ( $I_{CEO}$ ) SFH620A-1,2 SFH620A-3			50 100	nA nA	$V_{CE} = 10\text{V}$
Coupled	Current Transfer Ratio (CTR) (Note 2) SFH620A-1 SFH620A-2 SFH620A-3	40		125	%	$\pm 10\text{mA } I_F, 5\text{V } V_{CE}$
		63		200	%	
		100		320	%	
	SFH620A-1 SFH620A-2 SFH620A-3	13			%	$\pm 1\text{mA } I_F, 5\text{V } V_{CE}$
		22			%	
		34			%	
	Collector-emitter Saturation Voltage $V_{CESAT}$			0.4	V	$\pm 10\text{mA } I_F, 2.5\text{mA } I_C$
	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)	
Response Time (Rise), tr		4		$\mu\text{S}$	$V_{CE} = 2\text{V}, I_C = 2\text{mA}$ $R_L = 100\Omega$	
Response Time (Fall), tf		3		$\mu\text{S}$		

- 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.

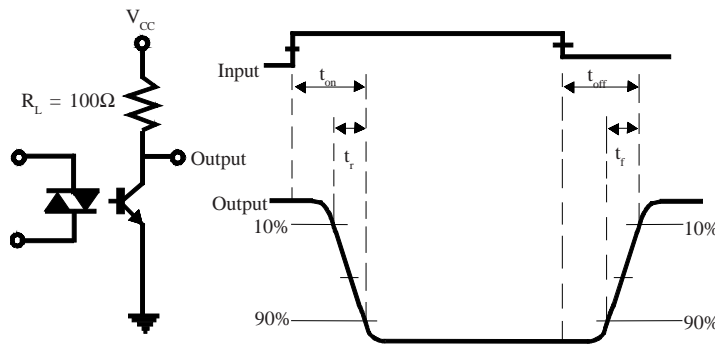
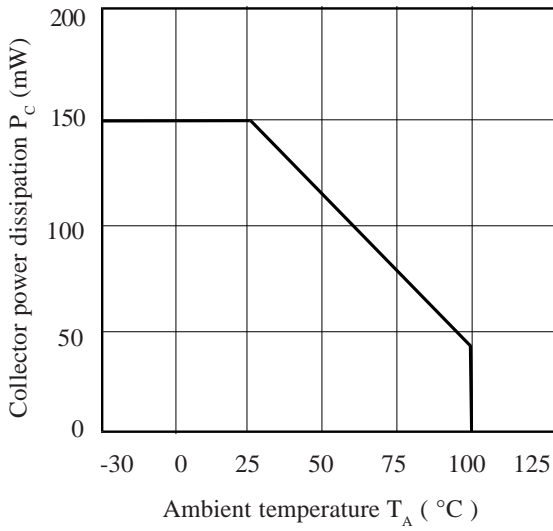
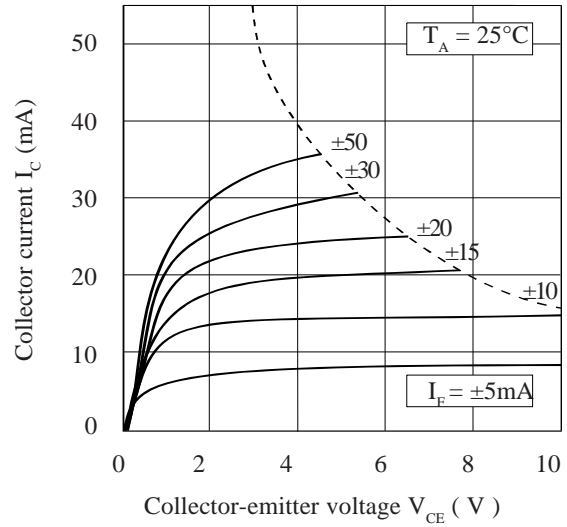


FIG 1

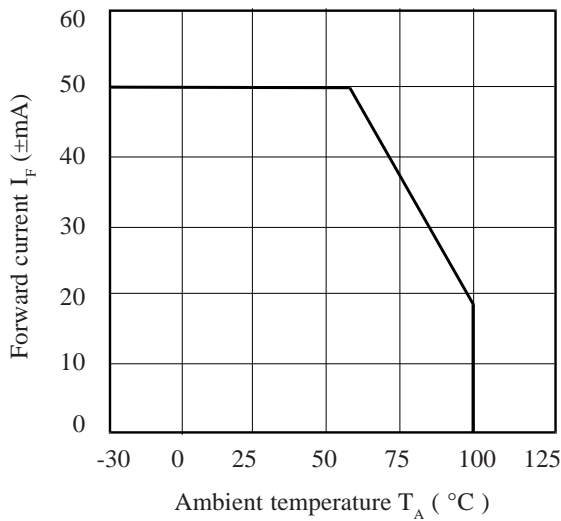
**Collector Power Dissipation vs. Ambient Temperature**



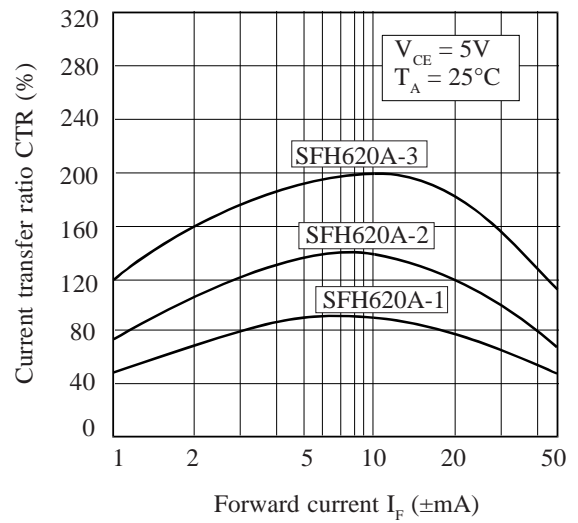
**Collector Current vs. Collector-emitter Voltage (normalized to SFH620A-2 & SFH620A-3)**



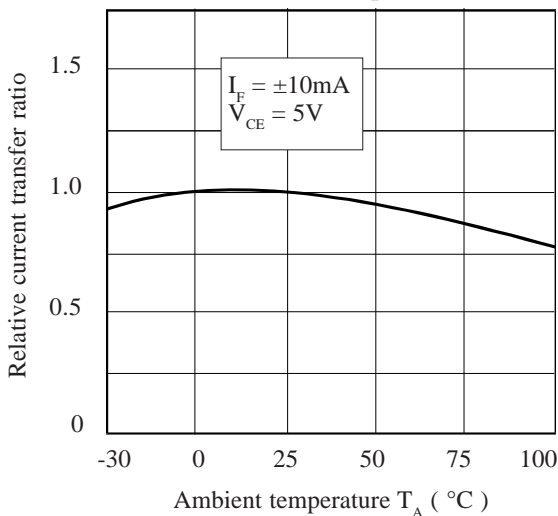
**Forward Current vs. Ambient Temperature**



**Current Transfer Ratio vs. Forward Current**



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



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

