

ISP620-1X, ISP620-2X, ISP620-4X  
 ISP620-1, ISP620-2, ISP620-4



**ISOCOM**  
 COMPONENTS



**HIGH DENSITY A.C. 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
- Certified to EN60950 by :-  
 Nemko - Certificate No. P01102465

**DESCRIPTION**

The ISP620-1, ISP620-2, ISP620-4 series of optically coupled isolators consist of two infrared light emitting diodes connected in inverse parallel and NPN silicon photo transistors in space efficient dual in line plastic packages.

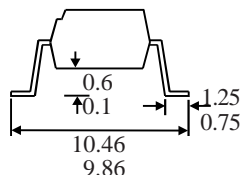
**FEATURES**

- Options :-  
 10mm lead spread - add G after part no.  
 Surface mount - add SM after part no.  
 Tape&reel - add SMT&R after part no.
- 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

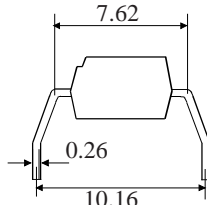
**APPLICATIONS**

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

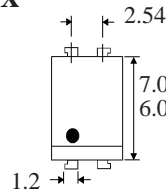
**OPTION SM  
 SURFACE MOUNT**



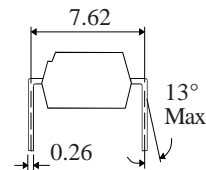
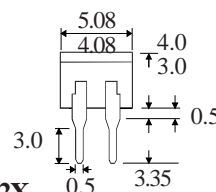
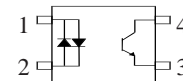
**OPTION G**



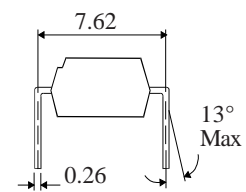
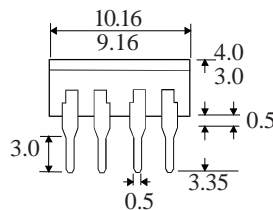
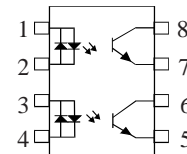
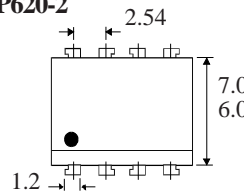
**ISP620-1X  
 ISP620-1**



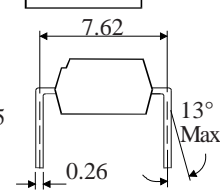
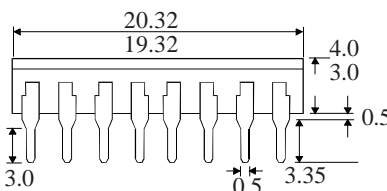
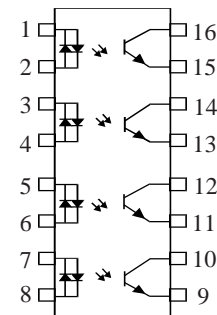
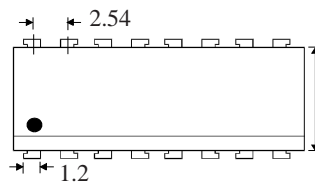
**Dimensions in mm**



**ISP620-2X  
 ISP620-2**



**ISP620-4X  
 ISP620-4**



**ISOCOM COMPONENTS 2004 LTD**

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### 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 $BV_{CEO}$	55V
Emitter-collector Voltage $BV_{ECO}$	6V
Collector Current	50mA
Power Dissipation	150mW

### POWER DISSIPATION

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

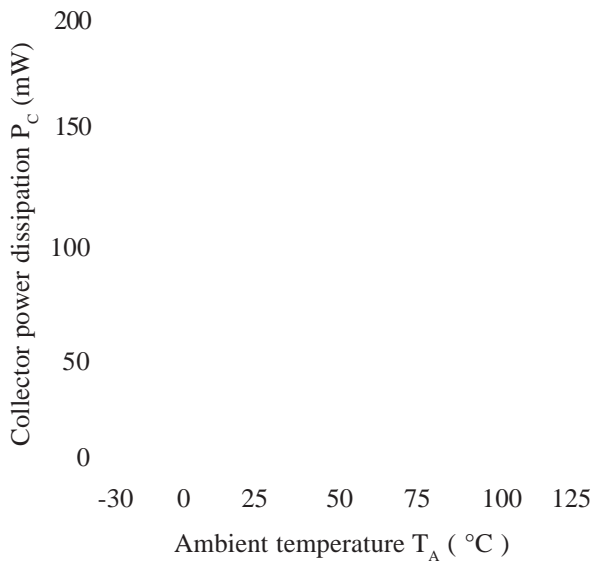
### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ Unless otherwise noted )

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage ( $V_F$ )	1.0	1.15	1.3	V	$I_F = \pm 10\text{mA}$
Output	Collector-emitter Breakdown ( $BV_{CEO}$ ) ( Note 2 )	55			V	$I_C = 0.5\text{mA}$
	Emitter-collector Breakdown ( $BV_{ECO}$ )	6			V	$I_E = 100\mu\text{A}$
	Collector-emitter Dark Current ( $I_{CEO}$ )			100	nA	$V_{CE} = 20\text{V}$
Coupled	Current Transfer Ratio (CTR) (Note 2) ISP620-1, ISP620-2, ISP620-4	50		600	%	$\pm 5\text{mA}I_F, 5\text{V} V_{CE}$
	CTR selection available GB	100		600	%	$\pm 5\text{mA}I_F, 5\text{V} V_{CE}$
		30			%	$\pm 1\text{mA}I_F, 0.4\text{V} V_{CE}$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$ GB			0.4	V	$\pm 8\text{mA}I_F, 2.4\text{mA}I_C$
				0.4	V	$\pm 1\text{mA}I_F, 0.2\text{mA}I_C$
	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, tr			4	$\mu\text{s}$	$V_{CE} = 2\text{V},$ $I_C = 2\text{mA}, R_L = 100\Omega$	
Fall Time, tf			3	$\mu\text{s}$		

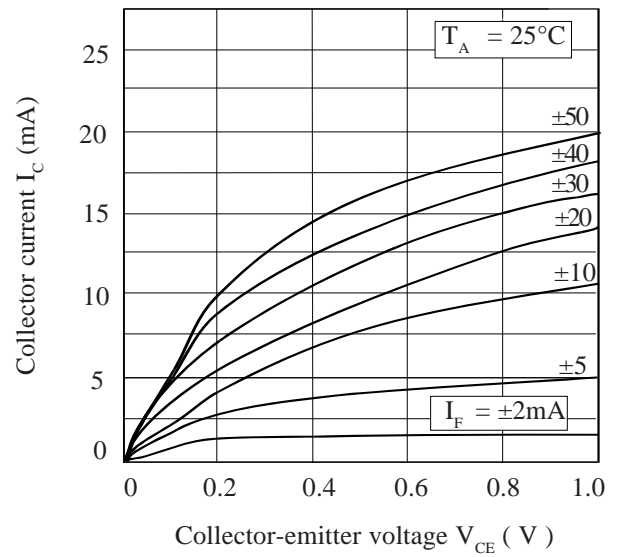
Note 1 Measured with input leads shorted together and output leads shorted together.

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

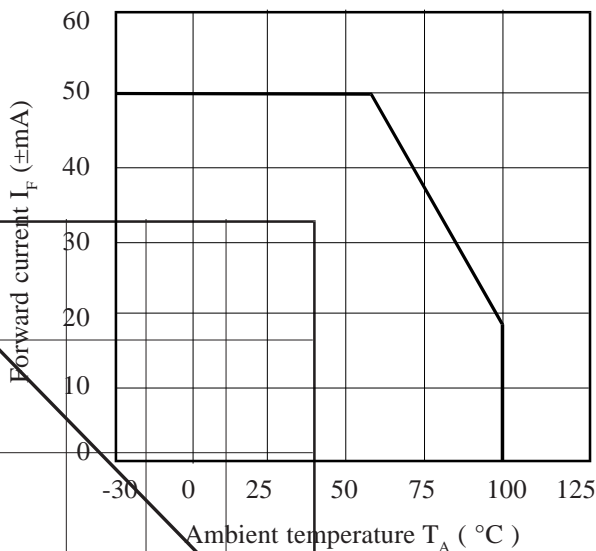
**Collector Power Dissipation vs. Ambient Temperature**



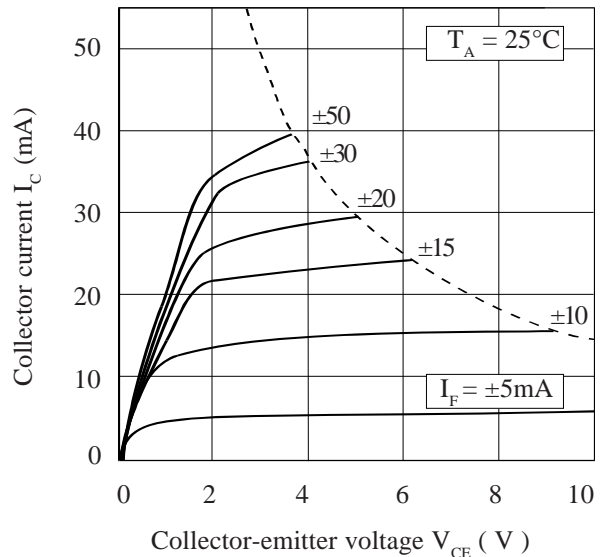
**Collector Current vs. Low Collector-emitter Voltage**



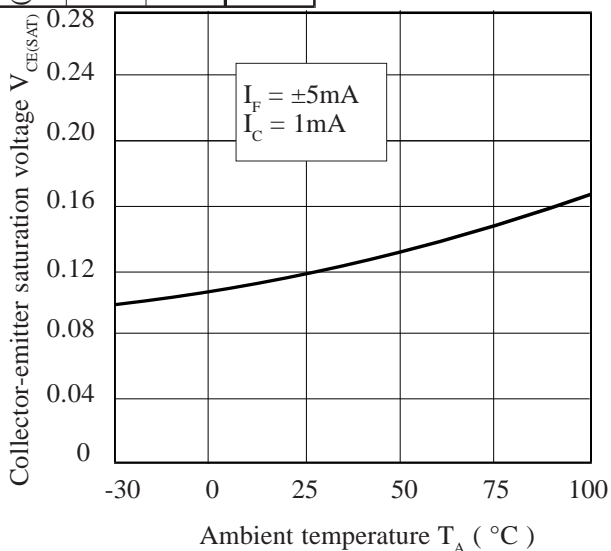
**Forward Current vs. Ambient Temperature**



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



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



**Current Transfer Ratio vs. Forward Current**

