

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



**HIGH DENSITY A.C. INPUT
 PHOTOTRANSISTOR OPTICALLY
 COUPLED ISOLATORS**

APPROVALS

- UL recognised, File No. E91231

'X' SPECIFICATION APPROVALS

- VDE 0884 approval pending
- Certified to EN60950 by the following Test Bodies :-
 Nemko - Certificate No. P96102022
 Fimko - Registration No. 192313-01..25
 Semko - Reference No. 9639052 01
 Demko - Reference No. 305969

DESCRIPTION

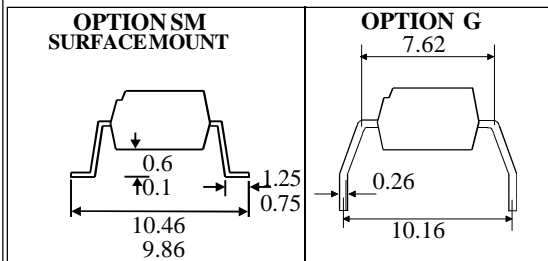
The ISP620-1, ISP620-2, ISP620-4 series of optically coupled isolators consist of two infrared light emitting diodes connected in inverse parallel and NPN silicon photo transistors in space efficient dual in line plastic packages.

FEATURES

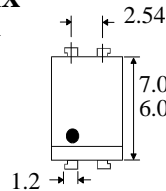
- Options :-
 10mm lead spread - add G after part no.
 Surface mount - add SM after part no.
 Tape&reel - add SMT&R after part no.
- High Isolation Voltage (5.3kV_{RMS}, 7.5kV_{PK})
- AC or polarity insensitive input
- All electrical parameters 100% tested
- Custom electrical selections available

APPLICATIONS

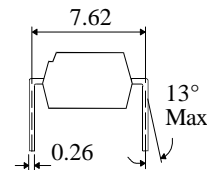
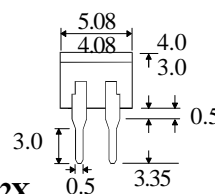
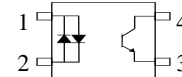
- Computer terminals
- Industrial systems controllers
- Telephone sets, Telephone exchangers
- Signal transmission between systems of different potentials and impedances



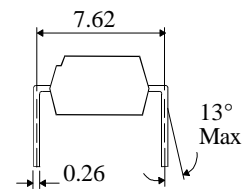
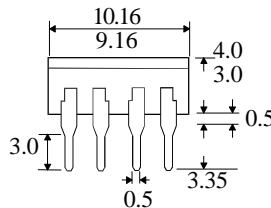
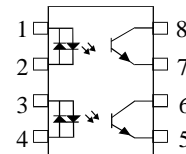
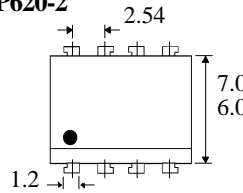
**ISP620-1X
 ISP620-1**



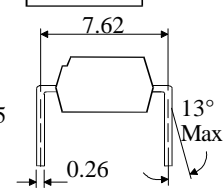
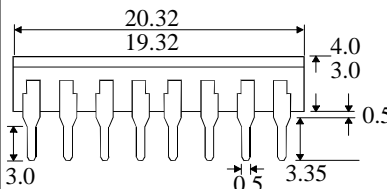
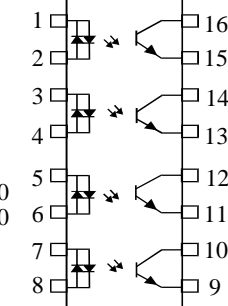
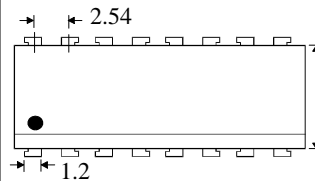
Dimensions in mm



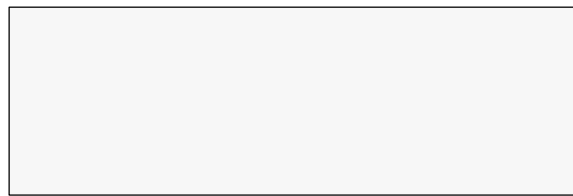
**ISP620-2X
 ISP620-2**



**ISP620-4X
 ISP620-4**



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 Park View Industrial Estate, Brenda Road
 Hartlepool, Cleveland, TS25 1YD
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ABSOLUTE MAXIMUM RATINGS

(25°C unless otherwise specified)

| | |
|---|------------------|
| Storage Temperature | -55°C to + 125°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 | ± 50mA |
| Power Dissipation | 70mW |

OUTPUT TRANSISTOR

| | |
|--------------------------------------|-------|
| Collector-emitter Voltage BV_{CEO} | 55V |
| Emitter-collector Voltage BV_{ECO} | 6V |
| Power Dissipation | 150mW |

POWER DISSIPATION

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

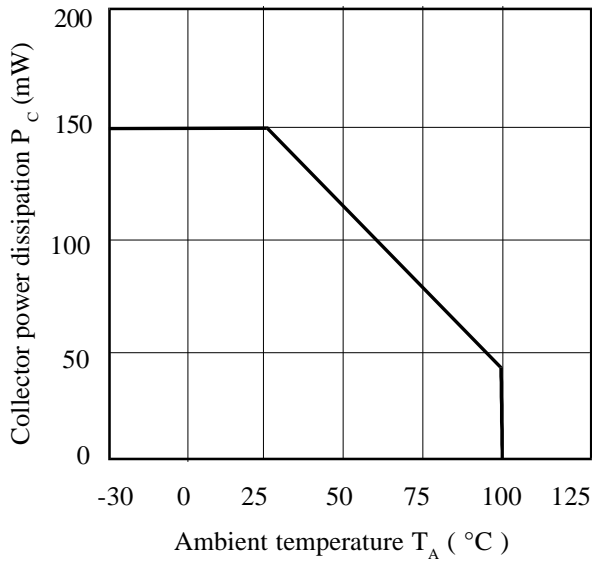
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

| 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 30 | | 600 | % % | $\pm 5\text{mA}I_F, 5\text{V } V_{CE}$ $\pm 1\text{mA}I_F, 0.4\text{V } V_{CE}$ |
| | Collector-emitter Saturation Voltage $V_{CE(SAT)}$ GB | | | 0.4 0.4 | V V | $\pm 8\text{mA}I_F, 2.4\text{mA}I_C$ $\pm 1\text{mA}I_F, 0.2\text{mA}I_C$ |
| | 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} | 5×10^{10} | | | Ω | $V_{IO} = 500\text{V}$ (note 1) |
| | Rise Time tr | | 2 | | μs | $V_{CC} = 10\text{V}$, |
| | Fall Time tf | | 3 | | μs | $I_C = 2\text{mA}, R_L = 100\Omega$ |
| | Turn-on Time ton | | 3 | | μs | |
| | Turn-off Time toff | | 3 | | μs | |

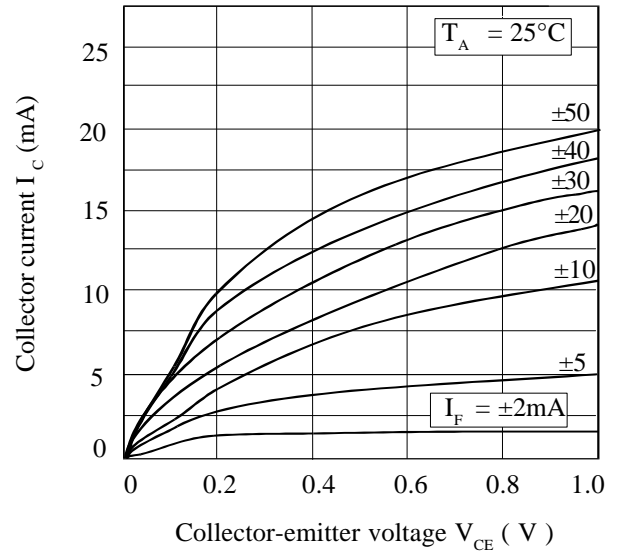
Note 1 Measured with input leads shorted together and output leads shorted together.

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

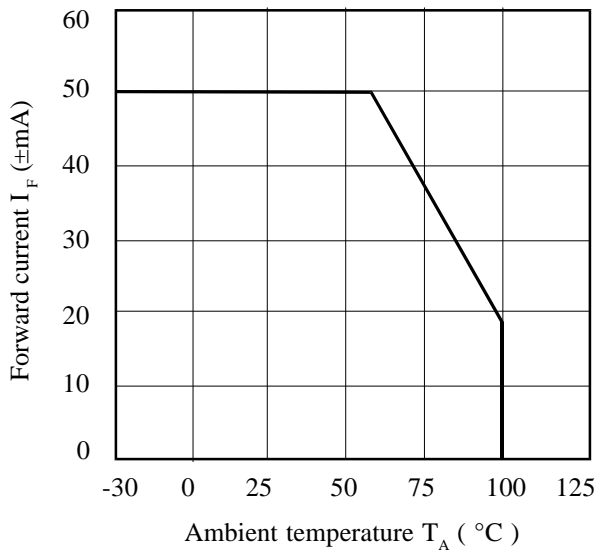
Collector Power Dissipation vs. Ambient Temperature



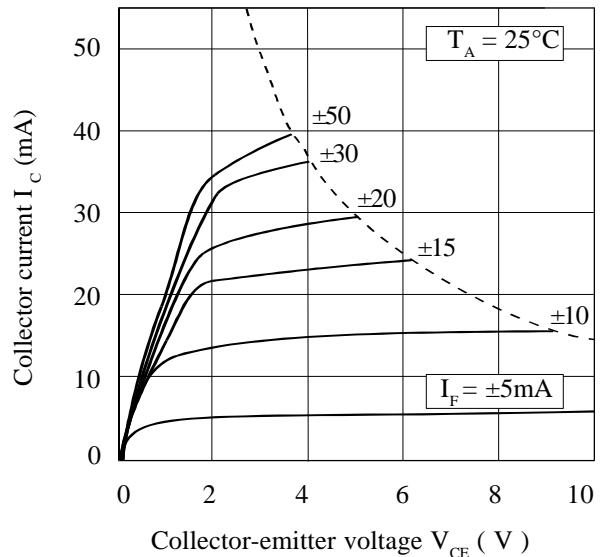
Collector Current vs. Low Collector-emitter Voltage



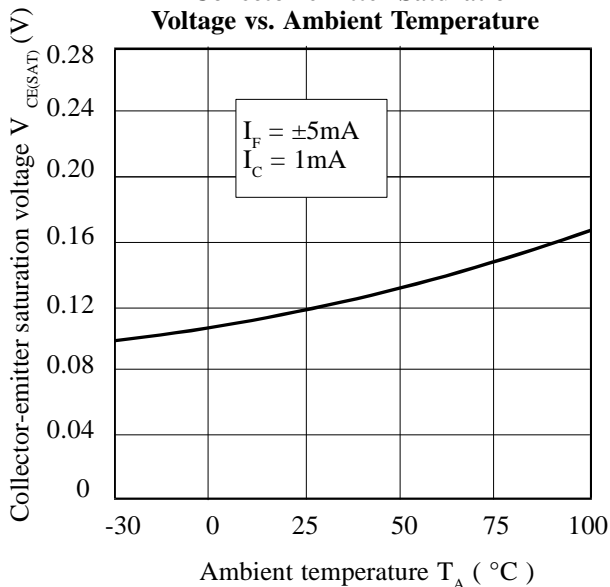
Forward Current vs. Ambient Temperature



Collector Current vs. Collector-emitter Voltage



Collector-emitter Saturation Voltage vs. Ambient Temperature



Current Transfer Ratio vs. Forward Current

