

ISP521-1X, ISP521-2X, ISP521-4X
 ISP521-1, ISP521-2, ISP521-4



ISOCOM
 COMPONENTS



**HIGH DENSITY MOUNTING
 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 ISP521-1, ISP521-2, ISP521-4 series of optically coupled isolators consist of infrared light emitting diodes and NPN silicon photo transistors in space efficient dual in line plastic packages.

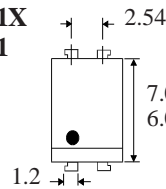
FEATURES

- Options :-
 10mm lead spread - add G after part no.
 Surface mount - add SM after part no.
 Tape&reel - add SMT&R after part no.
- High Current Transfer Ratio (50% min)
- High Isolation Voltage (5.3kV_{RMS}, 7.5kV_{PK})
- High BV_{CEO} (55Vmin)
- All electrical parameters 100% tested
- Custom electrical selections available

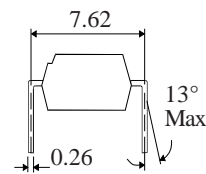
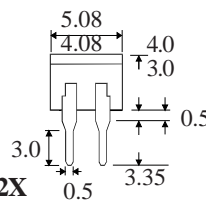
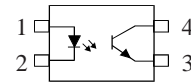
APPLICATIONS

- Computer terminals
- Industrial systems controllers
- Measuring instruments
- Signal transmission between systems of different potentials and impedances

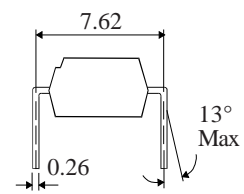
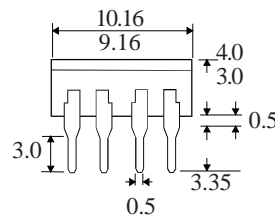
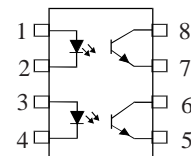
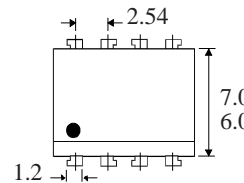
**ISP521-1X
 ISP521-1**



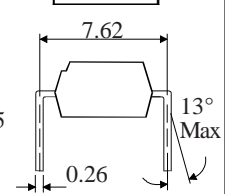
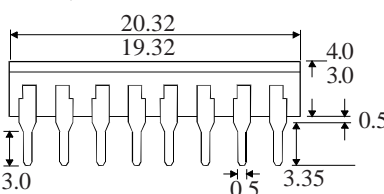
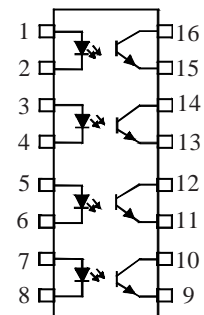
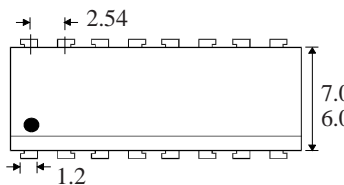
Dimensions in mm



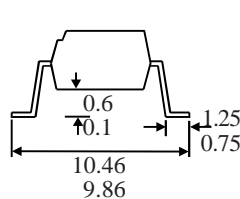
**ISP521-2X
 ISP521-2**



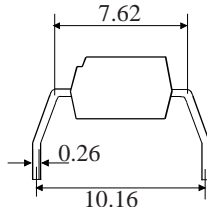
**ISP521-4X
 ISP521-4**



**OPTION SM
 SURFACE MOUNT**



OPTION G



ISOCOM COMPONENTS LTD

Unit 25B, Park View Road West,
 Park View Industrial Estate, Brenda Road
 Hartlepool, Cleveland, TS25 1YD
 Tel: (01429) 863609 Fax :(01429) 863581

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
 Reverse Voltage _____ 5V
 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)

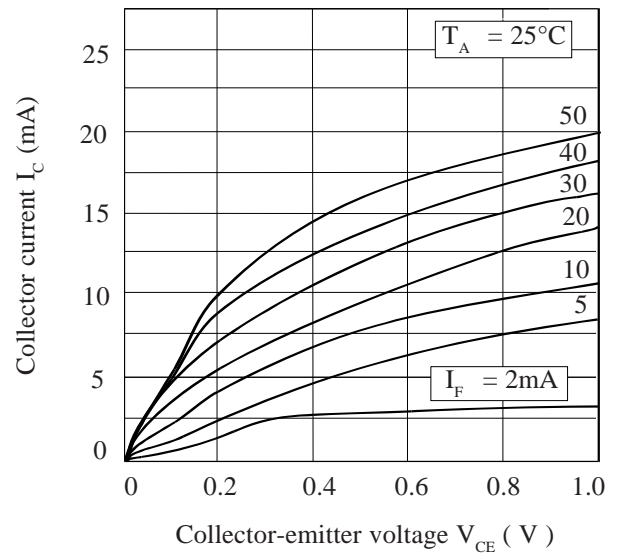
| PARAMETER | | MIN | TYP | MAX | UNITS | TEST CONDITION |
|---------------|---|--------------------|------|---------------|-------------------------------------|--|
| Input | Forward Voltage (V_F) | 1.0 | 1.15 | 1.3 | V | $I_F = 10\text{mA}$ |
| | Reverse Current (I_R) | | | 10 | μA | $V_R = 4\text{V}$ |
| 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) ISP521-1, ISP521-2, ISP521-4 | 50 | | 600 | % | $5\text{mA } I_F, 5\text{V } V_{CE}$ |
| | CTR selection available BL | 200 | | 600 | % | |
| | GB | 100 | | 600 | % | |
| | GB | 30 | | | % | $1\text{mA } I_F, 0.4\text{V } V_{CE}$ |
| | Collector-emitter Saturation Voltage $V_{CE(SAT)}$ -GB | | | 0.4 | V | $8\text{mA } I_F, 2.4\text{mA } I_C$ |
| | | | | 0.4 | V | $1\text{mA } I_F, 0.2\text{mA } I_C$ |
| | 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 | | 4 | | μs | $V_{CE} = 2\text{V},$ | |
| Fall Time, tf | | 3 | | μs | $I_C = 2\text{mA}, R_L = 100\Omega$ | |

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.

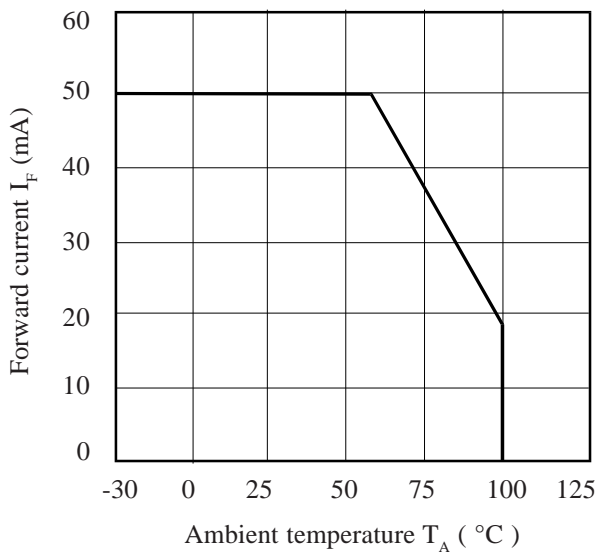
Collector Power Dissipation vs. Ambient Temperature



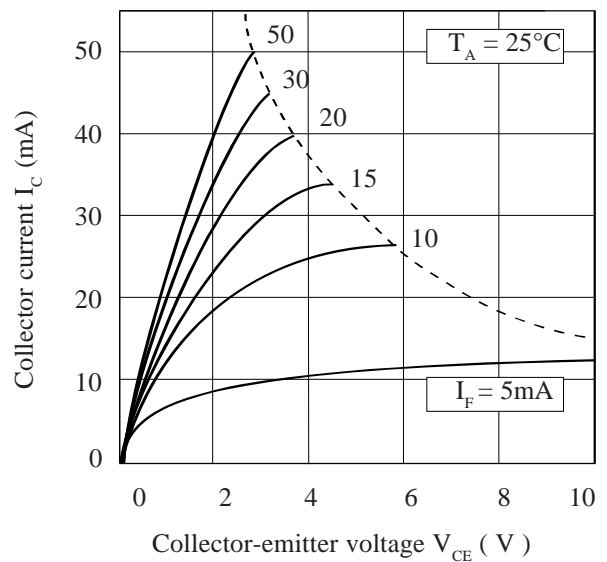
Collector Current vs. Low Collector-emitter Voltage



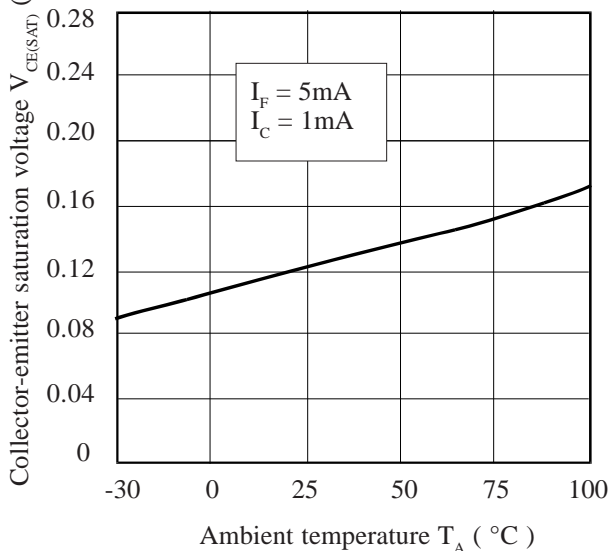
Forward Current vs. Ambient Temperature



Collector Current vs. Collector-emitter Voltage



Collector-emitter Saturation Voltage vs. Ambient Temperature



Current Transfer Ratio vs. Forward Current

