

LOW INPUT CURRENT PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS

APPROVALS

- UL recognised, File No. E91231

'X' SPECIFICATION APPROVALS

- VDE 0884 in 3 available lead form : -
-STD
- G form
- SMD approved to CECC 00802
- 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 ISP624-1, ISP624-2, ISP624-4 series of optically coupled isolators consist of infrared light emitting diodes and NPN silicon photo transistors in space efficient dual in line plastic packages.

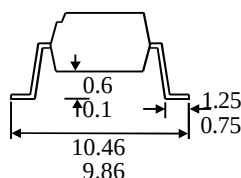
FEATURES

- 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
- Low Input Current 0.5mA I_F

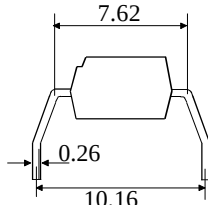
APPLICATIONS

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

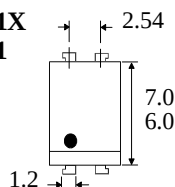
OPTION SM SURFACE MOUNT



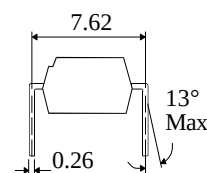
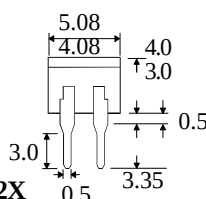
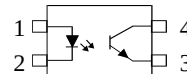
OPTION G SURFACE MOUNT



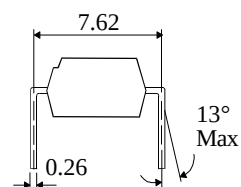
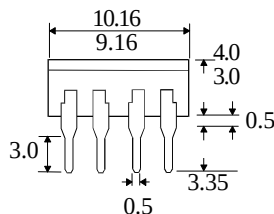
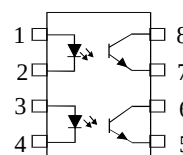
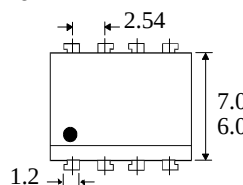
ISP624-1X ISP624-1



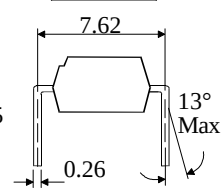
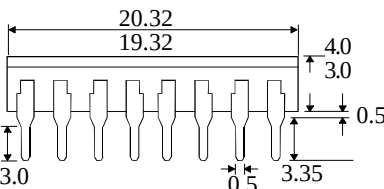
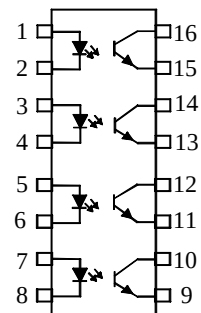
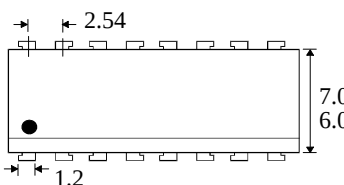
Dimensions in mm



ISP624-2X ISP624-2



ISP624-4X ISP624-4



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	_____	-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
Reverse Voltage	_____	5V
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)		

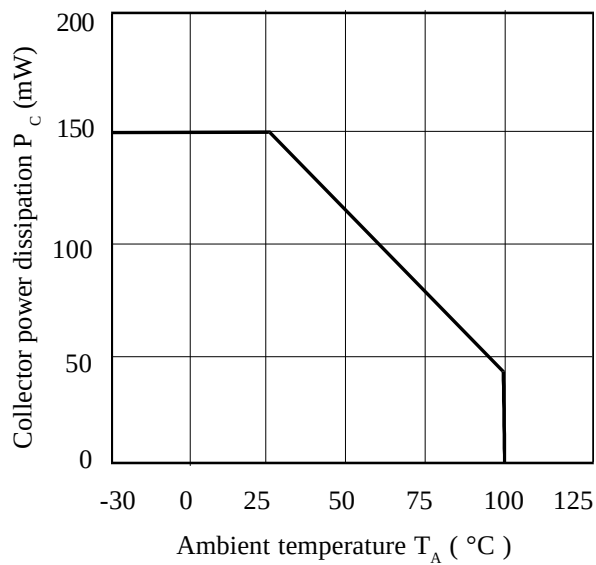
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)	1.0	1.15	1.3	V	$I_F = 10\text{mA}$
	Reverse Voltage (V_R)	5			V	$I_R = 10\mu\text{A}$
	Reverse Current (I_R)			10	μA	$V_R = 5\text{V}$
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	$V_{CE} = 24\text{V}$
Coupled	Current Transfer Ratio (CTR) (Note 2) ISP624-1,ISP624-2,ISP624-4			1200	%	$1\text{mA } I_F, 0.5\text{V } V_{CE}$
		100			%	$0.5\text{mA } I_F, 1.5\text{V } V_{CE}$
		50				
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$		0.2	0.4	V	$1\text{mA } I_F, 0.5\text{mA } I_C$
					V	$1\text{mA } I_F, 1\text{mA } I_C$
	Input to Output Isolation Voltage V_{ISO}		5300		V_{RMS}	See note 1
			7500		V_{PK}	See note 1
	Input-output Isolation Resistance R_{ISO}		5×10^{10}		Ω	$V_{IO} = 500\text{V}$ (note 1)
	Rise Time		8		μs	$V_{CC} = 10\text{V}$,
	Fall Time		8		μs	$I_C = 2\text{mA}, R_L = 100\Omega$
	Turn-on Time		10		μs	
	Turn-off Time		8		μs	

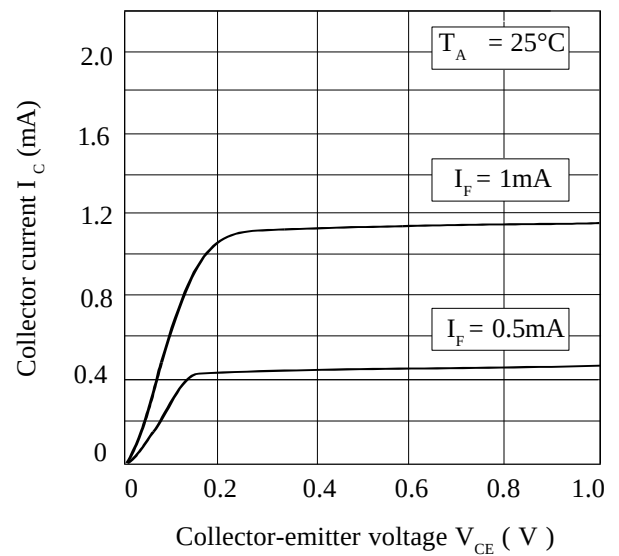
Note 1 Measured with input leads shorted together and output leads shorted together.

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

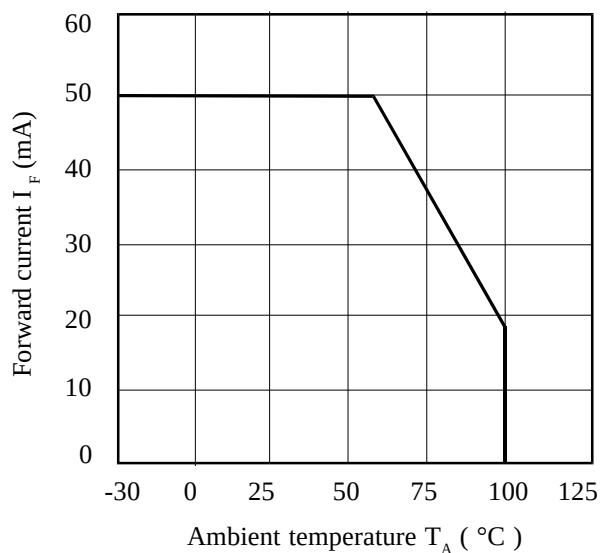
Collector Power Dissipation vs. Ambient Temperature



Collector Current vs. Low Collector-emitter Voltage



Forward Current vs. Ambient Temperature



Relative Current Transfer Ratio vs. Ambient Temperature

