ISP814X,ISP824X,ISP844X3,2,1
ISP814,ISP824,ISP844-3,-2,-1

LOW INPUT CURRENT A.C. INPUT 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. 963905201
  Demko - Reference No. 305969

DESCRIPTION

The ISP814-3,-2,-1, ISP824-3,-2,-1, ISP844-3,-2,-1 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.

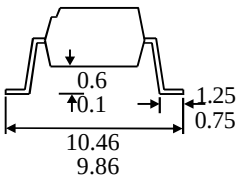
FEATURES

- Options :-
  10mm lead spread - add G after part no.
  Surface mount - add SM after part no.
  Tape&reel - add SMT&R after part no.
- Low input current ± 0.25mA I_F
- High Isolation Voltage ($5.3kV_{RMS}$, $7.5kV_{PK}$)
- All electrical parameters 100% tested
- Custom electrical selections available

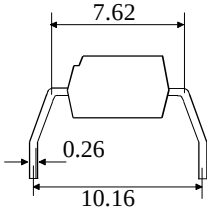
APPLICATIONS

- Industrial systems controllers
- Signal transmission between systems of different potentials and impedances

OPTION SM
SURFACE MOUNT

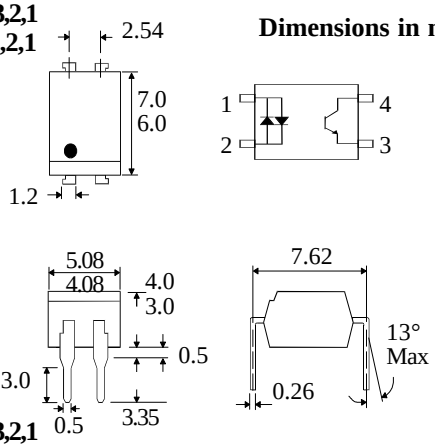


OPTION G

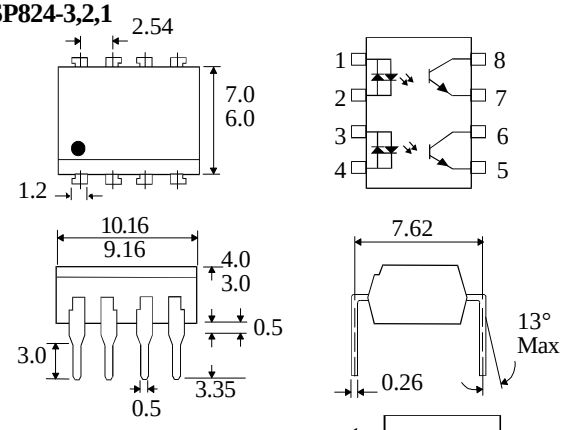


ISP814X3,2,1
ISP814-3,2,1

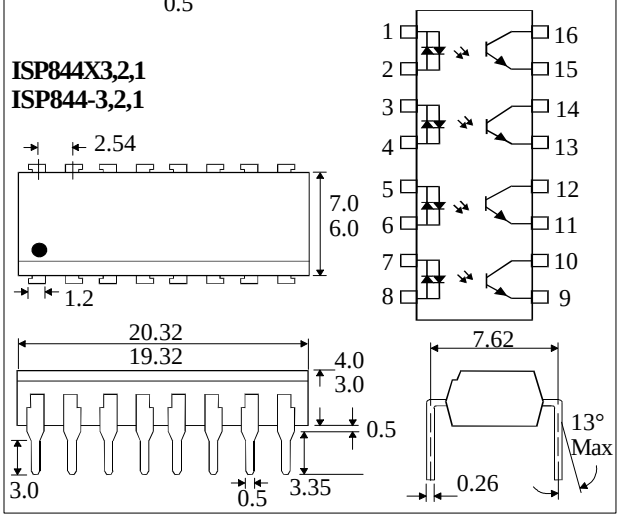
Dimensions in mm



ISP824X3,2,1
ISP824-3,2,1



ISP844X3,2,1
ISP844-3,2,1



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Allen, TX 75002 USA
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e-mail info@isocom.com
http://www.isocom.com

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}	70V
Emitter-collector Voltage BV_{ECO}	6V
Power Dissipation	150mW

POWER DISSIPATION

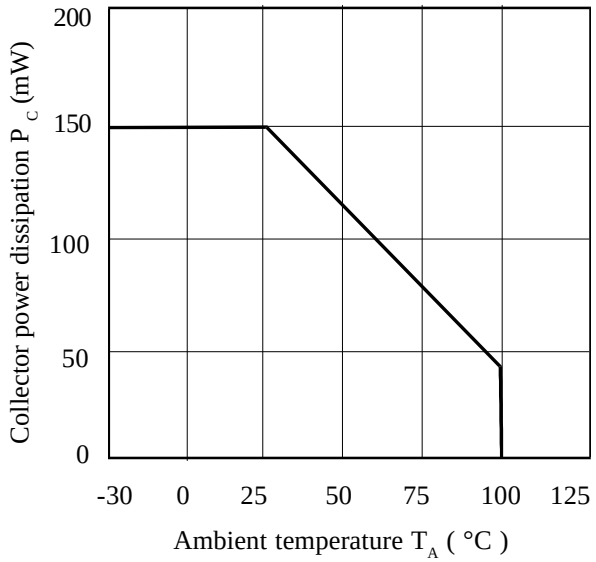
Total Power Dissipation	200mW
(derate linearly 2.67mW/°C above 25°C)	

ELECTRICAL CHARACTERISTICS (T_A = 25°C Unless otherwise noted)

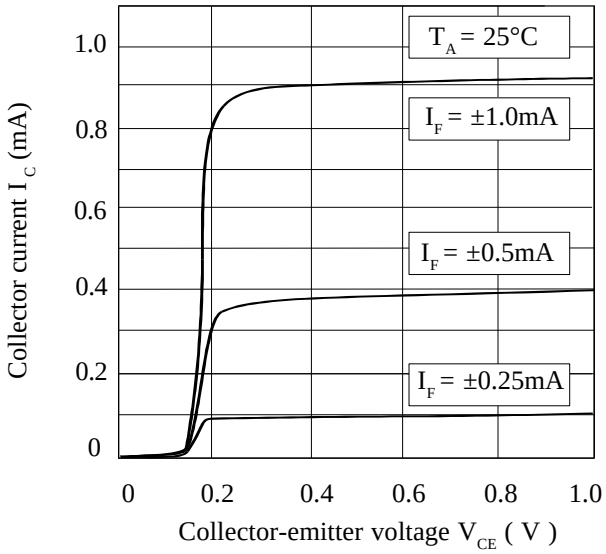
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.4	V	I_F = ± 20mA
Output	Collector-emitter Breakdown (BV_{CEO}) (Note 2)	70			V	I_C = 1mA
	Emitter-collector Breakdown (BV_{ECO})	6			V	I_E = 100µA
	Collector-emitter Dark Current (I_{CEO})			100	nA	V_{CE} = 20V
Coupled	Current Transfer Ratio (CTR) (Note 2)					
	ISP814-3, ISP824-3, ISP844-3	20			%	± 0.25mAI_F ,0.4V V_{CE}
		40			%	± 0.5mA I_F, 0.4V V_{CE}
		80			%	± 1.0mA I_F, 0.4V $V_{CE.}$
	ISP814-2, ISP824-2, ISP844-2	40			%	± 0.5mA I_F, 0.4V V_{CE}
		80			%	± 1.0mA I_F, 0.4V V_{CE}
	ISP814-1, ISP824-1, ISP844-1	80			%	± 1.0mA I_F, 0.4V V_{CE}
	Collector-Emitter Saturation Voltage-3			0.4	V	± 0.25mAI_F,0.05mAI_C
	-2			0.4	V	± 0.5mA I_F, 0.2mA I_C
	-1			0.4	V	± 1.0mA I_F, 0.8mA 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}	$5x10^{10}$			Ω	V_{IO} = 500V (note 1)
	Output Rise Time tr		4	18	µs	V_{CE} = 2V ,
	Output Fall Time tf		3	18	µs	I_C=0.05mA,R_L=100Ω

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.

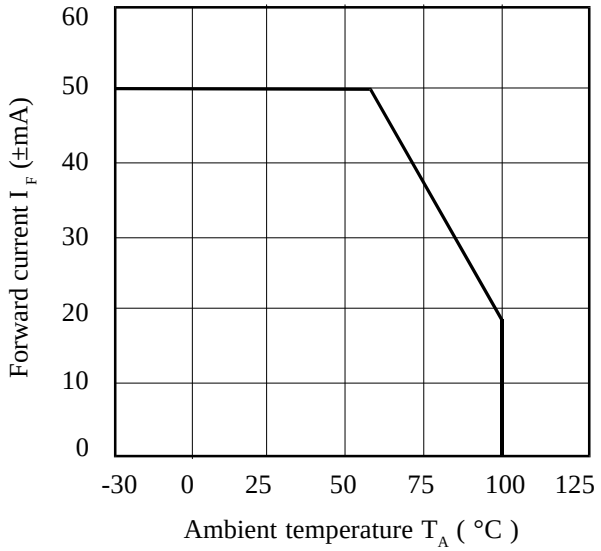
Collector Power Dissipation vs. Ambient Temperature



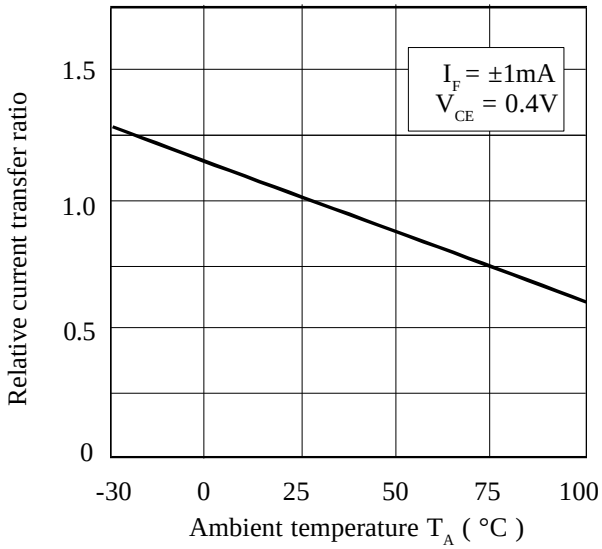
Collector Current vs. Low Collector-emitter Voltage



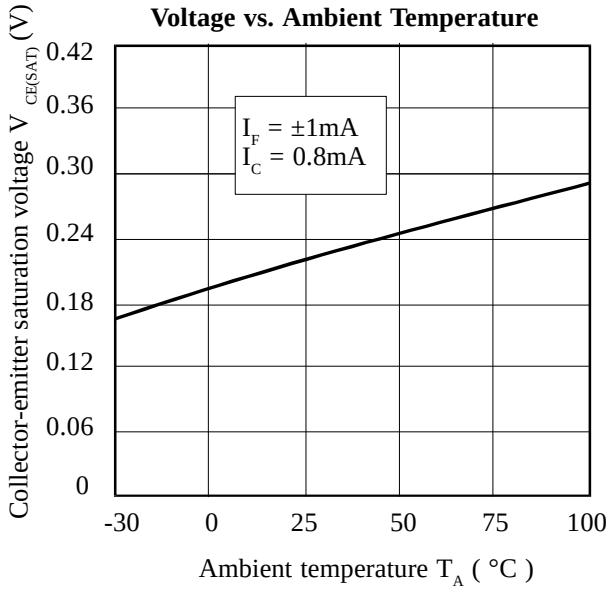
Forward Current vs. Ambient Temperature



Relative Current Transfer Ratio vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature



Current Transfer Ratio vs. Forward Current