ISP814X, ISP824X, ISP844X
ISP814, ISP824, ISP844

HIGH DENSITY A.C. INPUT PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS

APPROVALS

- UL recognised, File No. E91231

'X' SPECIFICATION APPROVALS

- VDE 0884 approval pending
- ISP814X - 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
  ISP824X, ISP844X - EN60950 pending

DESCRIPTION

The ISP814, ISP824, ISP844 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.

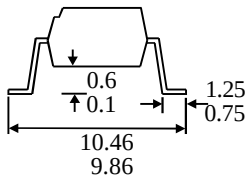
FEATURES

- 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

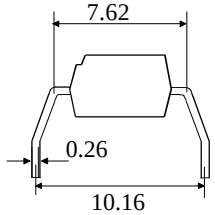
APPLICATIONS

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

OPTION SM
SURFACE MOUNT

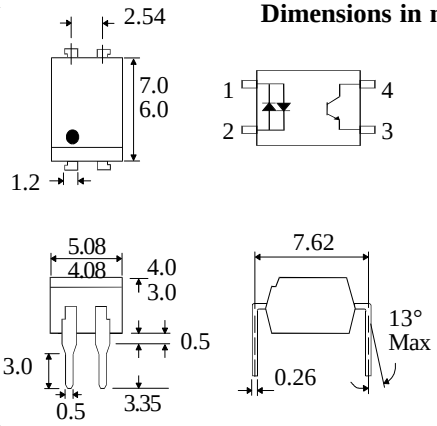


OPTION G

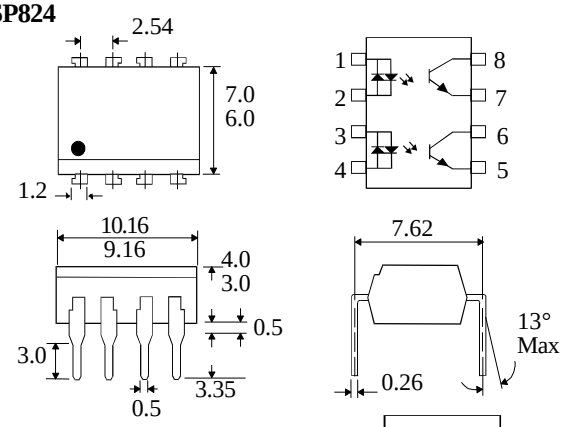


ISP814X
ISP814

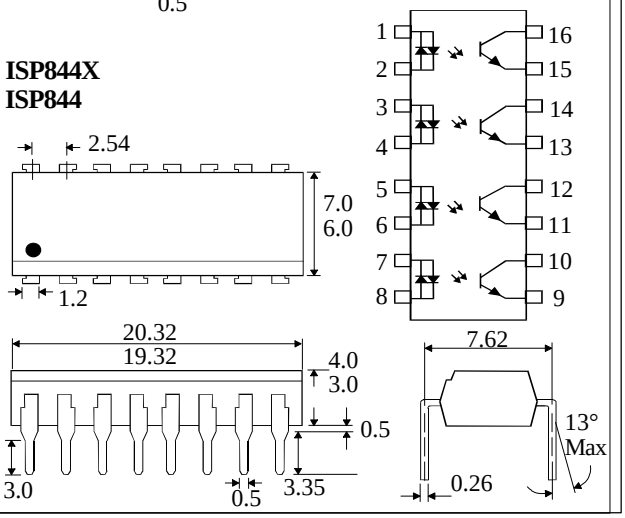
Dimensions in mm



ISP824X
ISP824



ISP844X
ISP844



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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}	35V
Emitter-collector Voltage BV_{ECO}	6V
Power Dissipation	150mW

POWER DISSIPATION

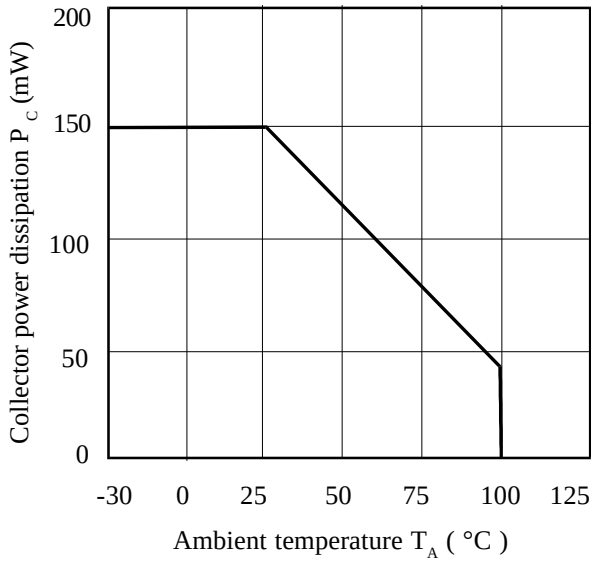
Total Power Dissipation	200mW
(derate linearly 2.67mW/°C above 25°C)	

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

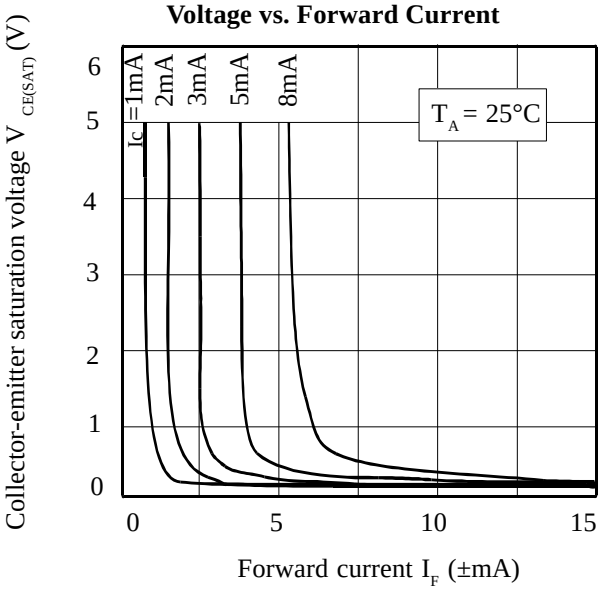
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.4	V	I_F = ± 20mA
Output	Collector-emitter Breakdown (BV_{CEO}) (Note 2)	35			V	I_C = 1mA
	Emitter-collector Breakdown (BV_{ECO})	6			V	I_E = 100µA
	Collector-emitter Dark Current (I_{CEO})			100	nA	V_{CE} = 20V
Coupled	Current Transfer Ratio (CTR) (Note 2)					
	ISP814, ISP824, ISP844	20		300	%	± 1mAI_F, 5V V_{CE}
	ISP814A, ISP824A, ISP844A	50		150	%	
	Collector-emitter Saturation Voltage $V_{CE\ (SAT)}$			0.2	V	± 20mAI_F, 1mAI_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= 10mA, 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.

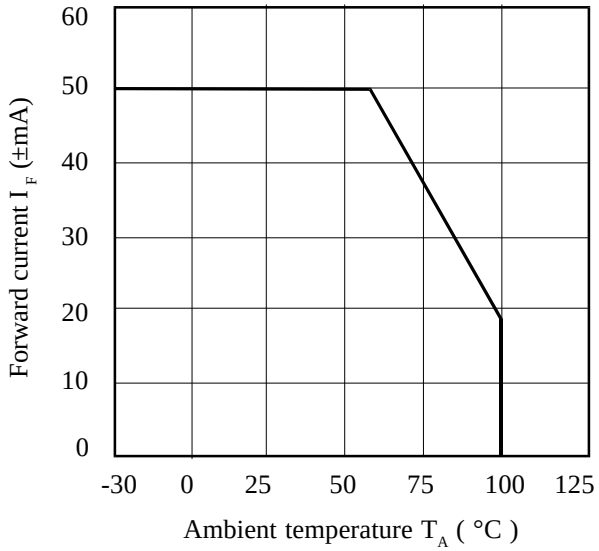
Collector Power Dissipation vs. Ambient Temperature



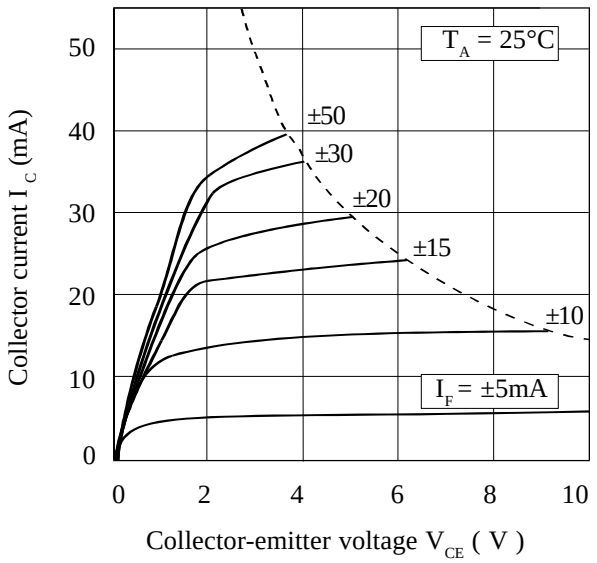
Collector-emitter Saturation Voltage vs. Forward Current



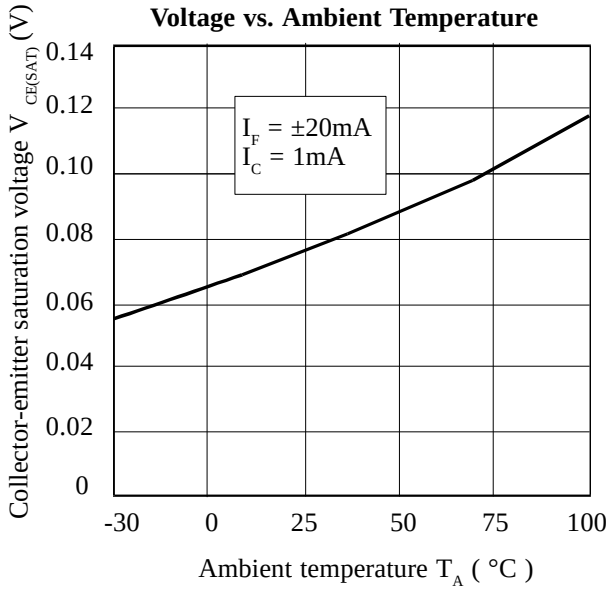
Forward Current vs. Ambient Temperature



Collector Current vs. Collector-emitter Voltage



Collector-emitter Saturation Voltage vs. Ambient Temperature



Current Transfer Ratio vs. Forward Current

