



HIGH DENSITY MOUNTING PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS



APPROVALS

- UL recognised, File No. E91231 under Package System 'EE'

'X' SPECIFICATION APPROVALS

- VDE 0884 in 3 available lead form : -
- STD
- G form
- SMD approved to CECC 00802

DESCRIPTION

The ISP817 series of optically coupled isolators consist of infrared light emitting diodes and NPN silicon photo transistors in space efficient dual in line plastic packages.

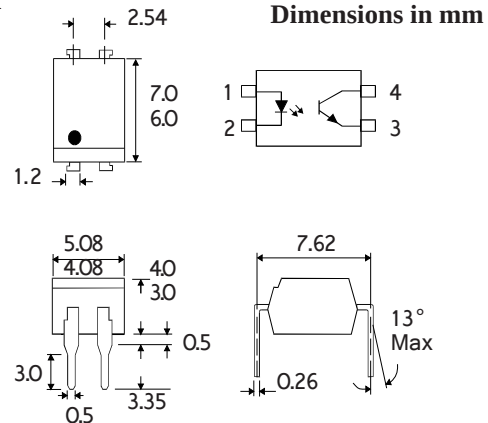
FEATURES

- 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 ($5.3\text{kV}_{\text{RMS}}$, 7.5kV_{PK})
- High BV_{CEO} (80Vmin)
- All electrical parameters 100% tested
- Custom electrical selections available

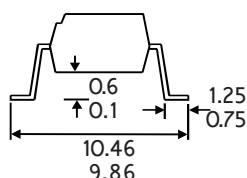
APPLICATIONS

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

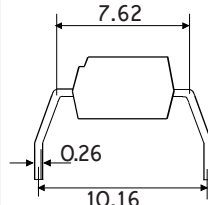
ISP817X ISP817



OPTION SM SURFACE MOUNT



OPTION G



ISOCOMCOMPONENTSLTD

Unit 25B, Park View Road West,
Park View Industrial Estate, Brenda Road
Hartlepool, Cleveland, TS25 1UD
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 _____ 6V
Power Dissipation _____ 70mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO} _____ 80V
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)

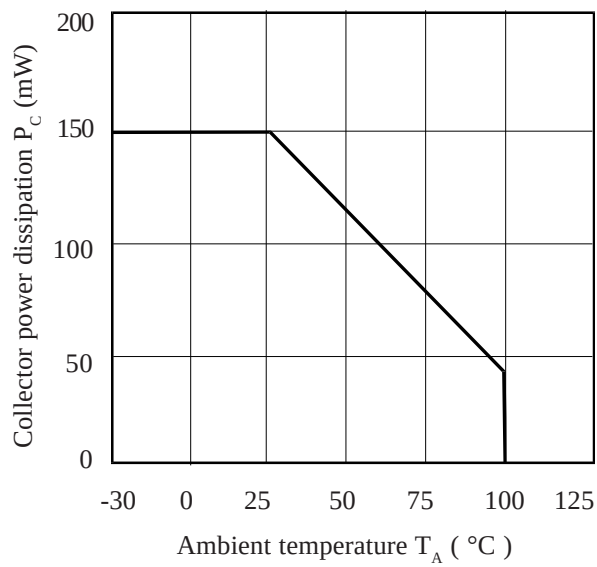
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.4	V	$I_F = 20\text{mA}$
	Reverse Current (I_R)			10	μA	$V_R = 4\text{V}$
Output	Collector-emitter Breakdown (BV_{CEO})	80			V	$I_C = 1\text{mA}$
	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)					
		50		600	%	$5\text{mA } I_F, 5\text{V } V_{CE}$
	GB	100		600	%	$5\text{mA } I_F, 5\text{V } V_{CE}$
	BL	200		600	%	$5\text{mA } I_F, 5\text{V } V_{CE}$
	A	80		160	%	$5\text{mA } I_F, 5\text{V } V_{CE}$
	B	130		260	%	$5\text{mA } I_F, 5\text{V } V_{CE}$
	C	200		400	%	$5\text{mA } I_F, 5\text{V } V_{CE}$
	D	300		600	%	$5\text{mA } I_F, 5\text{V } V_{CE}$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.2	V	$20\text{mA } I_F, 1\text{mA } I_C$
	Input to Output Isolation Voltage V_{ISO}		5300	7500	V_{RMS} PK	See note 1 See note 1
	Input-output Isolation Resistance R_{ISO}		5×10^{10}		Ω	$V_{IO} = 500\text{V}$ (note 1)
	Output Rise Time tr		4	18	μs	$V_{CE} = 2\text{V}$,
	Output Fall Time tf		3	18	μs	$I_C = 2\text{mA}, R_L = 100\Omega$

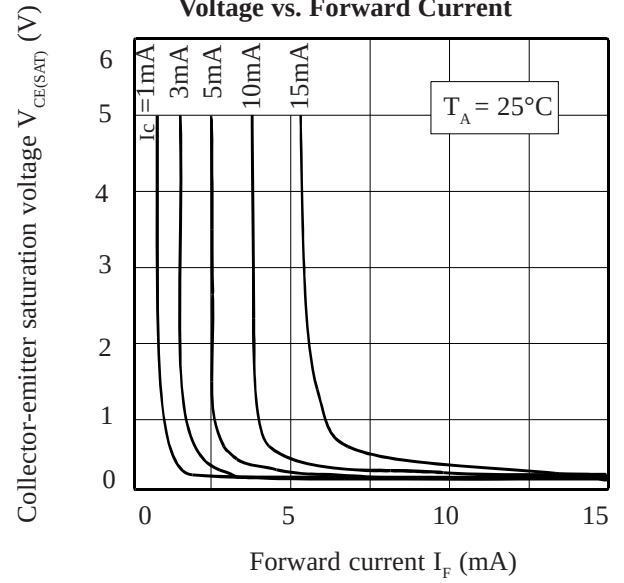
Note 1 Measured with input leads shorted together and output leads shorted together.

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

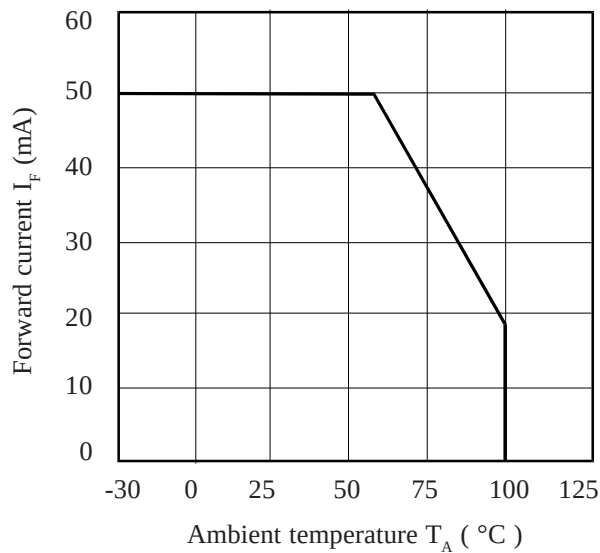
Collector Power Dissipation vs. Ambient Temperature



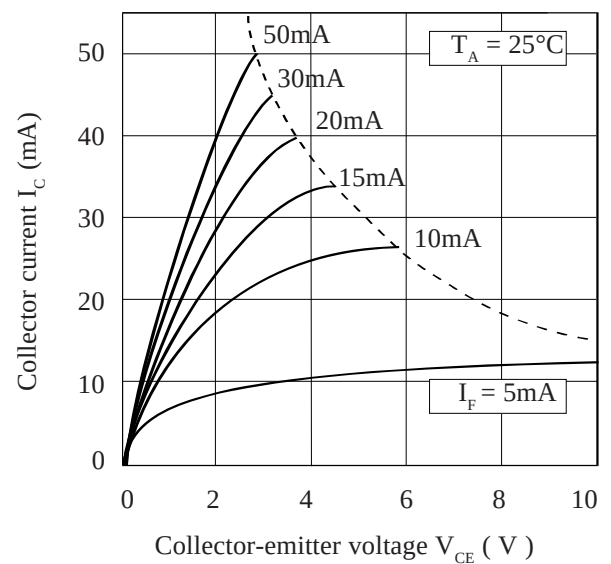
Collector-emitter Saturation Voltage vs. Forward Current



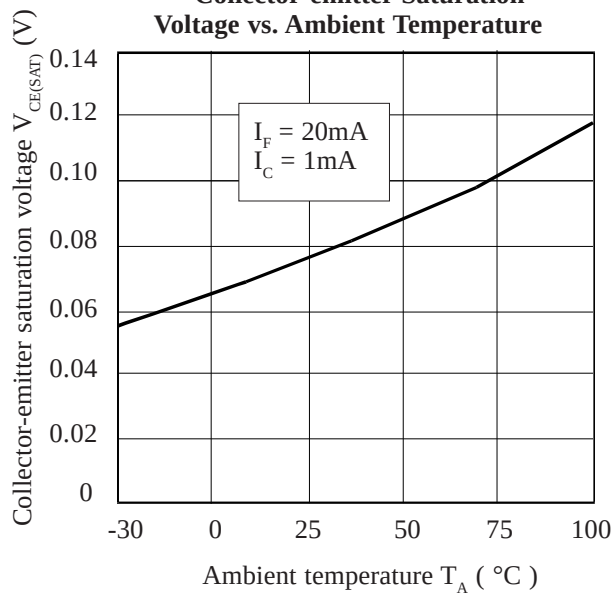
Forward Current vs. Ambient Temperature



Collector Current vs. Collector-emitter Voltage



Collector-emitter Saturation Voltage vs. Ambient Temperature



Current Transfer Ratio vs. Forward Current

