



NON BASE LEAD OPTICALLY COUPLED ISOLATOR PHOTODARLINGTON OUTPUT



APPROVALS

- UL recognised, File No. E91231

DESCRIPTION

The ISPD6_ series of optically coupled isolators consist of an infrared light emitting diode and NPN silicon photodarlington in a standard 6pin dual in line plastic package with the base pin unconnected.

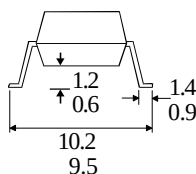
FEATURES

- 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 (500% min)
- High Isolation Voltage (5.3kV_{RMS}, 7.5kV_{PK})
- Basepin unconnected for improved noise immunity in high EMI environment
- High sensitivity to low input drive current
- Custom electrical selections available

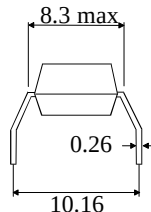
APPLICATIONS

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

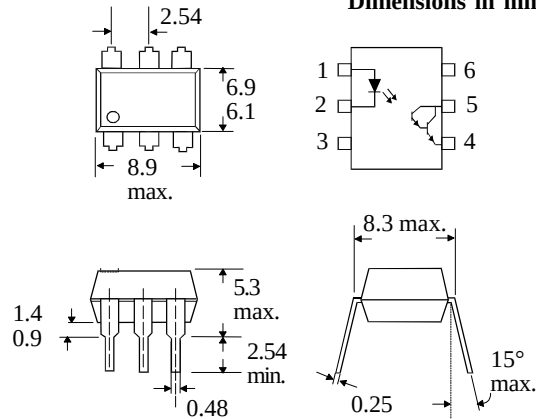
OPTION SM SURFACE MOUNT



OPTION G



Dimensions in mm



ABSOLUTE MAXIMUM RATINGS (25°C unless otherwise specified)

Storage Temperature _____ -55°C to + 150°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 _____ 60mA
Reverse Voltage _____ 5V
Power Dissipation _____ 120mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO} _____ 30V
Emitter-collector Voltage BV_{ECO} _____ 5V
Power Dissipation _____ 150mW

POWER DISSIPATION

Total Power Dissipation _____ 250mW
(derate linearly 3.3mW/°C above 25°C)

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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	1.5	V	$I_F = 10\text{mA}$
	Reverse Voltage (V_R)	3			V	$I_R = 10\mu\text{A}$
	Reverse Current (I_R)			10	μA	$V_R = 3\text{V}$
Output	Collector-emitter Breakdown (BV_{CEO})	30			V	$I_C = 1\text{mA}$ (note 2)
	Emitter-collector Breakdown (BV_{ECO})	5			V	$I_E = 100\mu\text{A}$
	Collector-emitter Dark Current (I_{CEO})			100	nA	$V_{CE} = 10\text{V}$
Coupled	Current Transfer Ratio (CTR) (Note 2)					
	ISPD60, ISPD63		100		%	$1\text{mA } I_F, 2\text{V } V_{CE}$
	ISPD61, ISPD64		500		%	$1\text{mA } I_F, 2\text{V } V_{CE}$
	ISPD62, ISPD65		1000		%	$1\text{mA } I_F, 2\text{V } V_{CE}$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			1.0	V	$10\text{mA } I_F, 10\text{mA } I_C$
	Input to Output Isolation Voltage V_{ISO}		5300		V_{RMS}	(note 1)
			7500		V_{PK}	(note 1)
	Input-output Isolation Resistance R_{ISO}		10^{11}		Ω	$V_{IO} = 500\text{V}$ (note 1)
	Output Rise Time	tr	60		μs	$V_{CC} = 10\text{V}, I_C = 2\text{mA},$
	Output Fall Time	tf	60		μs	$R_L = 100\Omega$, fig.1
	Delay Time	td	10		μs	
	Storage Time	ts	3		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.

FIGURE 1

