



**NON BASE LEAD
OPTICALLY COUPLED ISOLATOR
PHOTODARLINGTON OUTPUT**



APPROVALS

- UL recognised, File No. E91231

DESCRIPTION

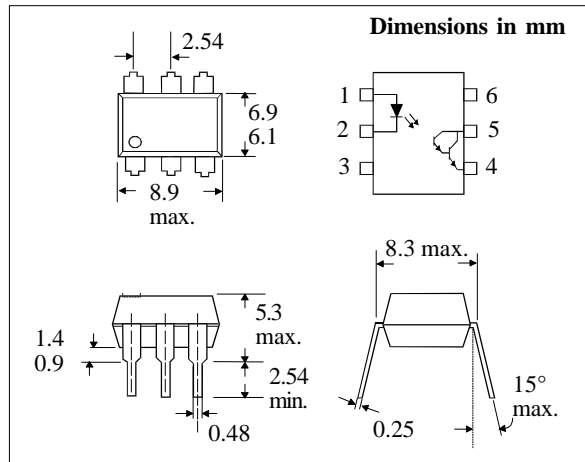
The ISPD6_ series of optically coupled isolators consist of an infrared light emitting diode and NPN silicon photodarlington in a standard 6pin dual in line plastic package with the base pin unconnected.

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



**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

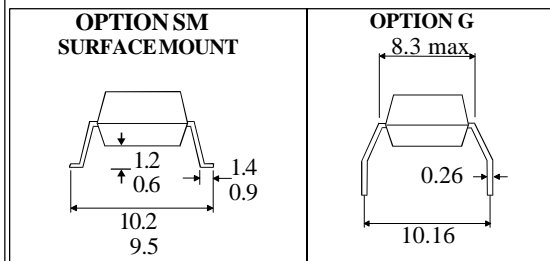
Forward Current	60mA
Reverse Voltage	5V
Power Dissipation	120mW

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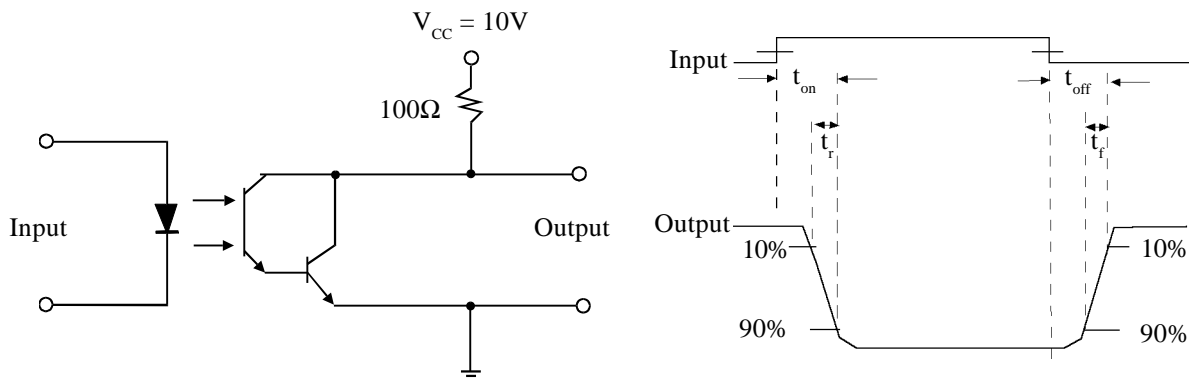
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.5	V	$I_F = 10\text{mA}$ $I_R = 10\mu\text{A}$ $V_R = 3\text{V}$
	Reverse Voltage (V_R)	3			V	
	Reverse Current (I_R)			10	μA	
Output	Collector-emitter Breakdown (BV_{CEO})	30			V	$I_C = 1\text{mA}$ (note 2) $I_E = 100\mu\text{A}$ $V_{CE} = 10\text{V}$
	Emitter-collector Breakdown (BV_{ECO})	5			V	
	Collector-emitter Dark Current (I_{CEO})			100	nA	
Coupled	Current Transfer Ratio (CTR) (Note 2)					$1\text{mA } I_F, 2\text{V } V_{CE}$ $1\text{mA } I_F, 2\text{V } V_{CE}$ $1\text{mA } I_F, 2\text{V } V_{CE}$ $10\text{mA } I_F, 10\text{mA } I_C$ (note 1) (note 1) $V_{IO} = 500\text{V}$ (note 1) $V_{CC} = 10\text{V}, I_C = 2\text{mA},$ $R_L = 100\Omega$, fig.1
	ISPD60, ISPD63	100			%	
	ISPD61, ISPD64	500			%	
	ISPD62, ISPD65	1000			%	
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			1.0	V	
	Input to Output Isolation Voltage V_{ISO}	5300			V_{RMS}	
		7500			V_{PK}	
	Input-output Isolation Resistance R_{ISO}	10^{11}			Ω	
	Output Rise Time t_r		60		μs	
	Output Fall Time t_f		60		μs	
Delay Time t_d		10		μs		
Storage Time t_s		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.

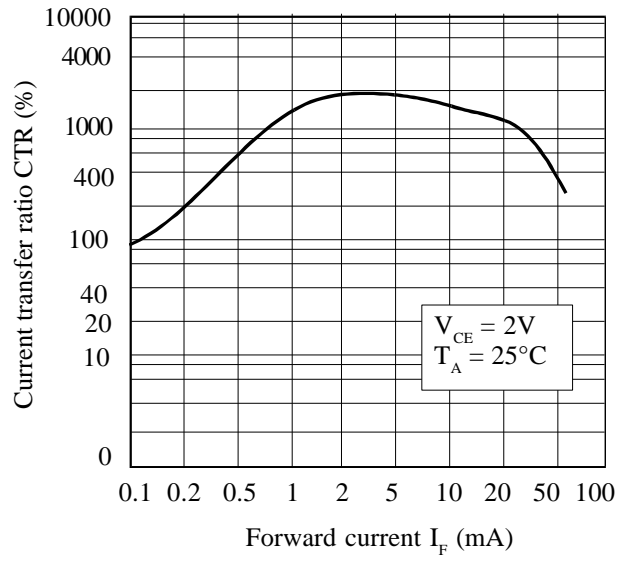
FIGURE 1



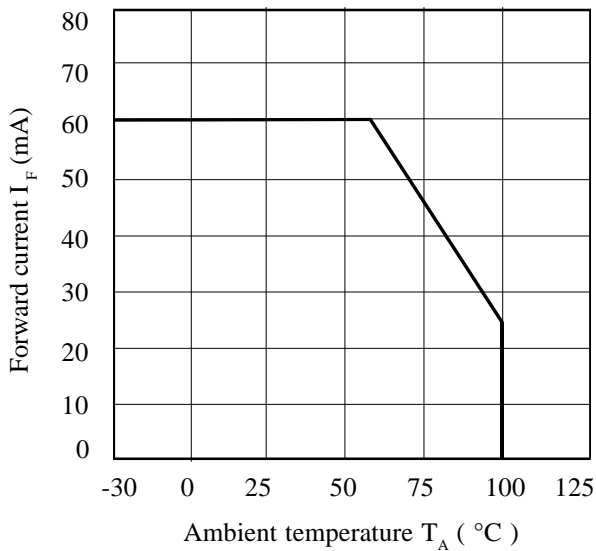
Collector Power Dissipation vs. Ambient Temperature



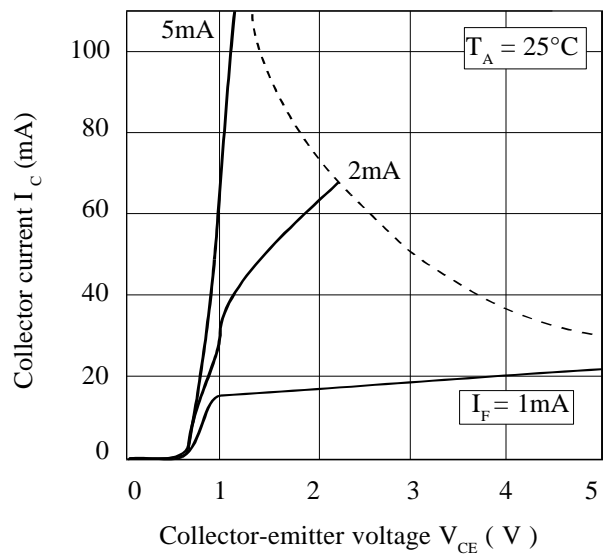
Current Transfer Ratio vs. Forward Current



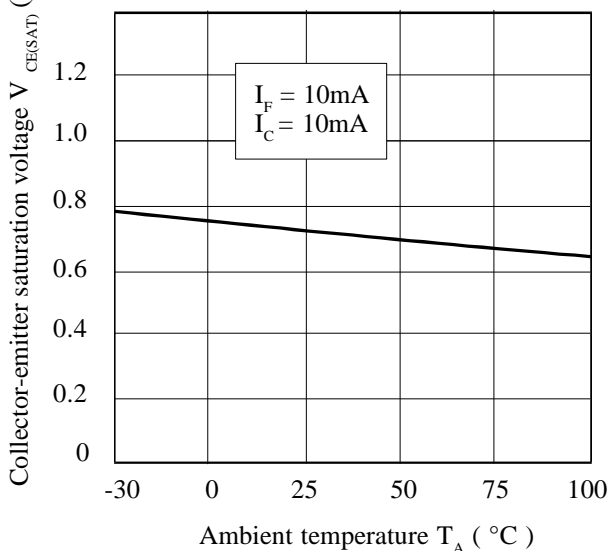
Forward Current vs. Ambient Temperature



Collector Current vs. Collector-emitter Voltage



Collector-emitter Saturation Voltage vs. Ambient Temperature



Normalized Current Transfer Ratio vs. Ambient Temperature

