



NON BASE LEAD OPTICALLY COUPLED ISOLATOR PHOTODARLINGTON OUTPUT



APPROVALS

- UL recognised, File No. E91231

DESCRIPTION

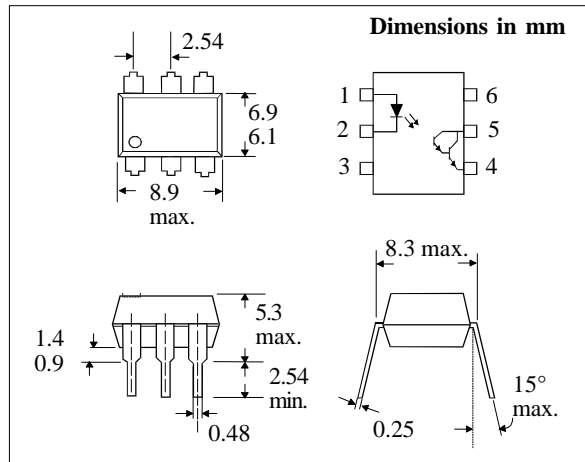
The ISPD6_ series of optically coupled isolators consist of an infrared light emitting diode and NPN silicon photodarlington in a standard 6pin dual in line plastic package with the base pin unconnected.

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

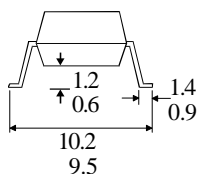
OUTPUT TRANSISTOR

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

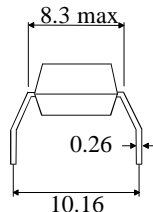
POWER DISSIPATION

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

OPTION SM SURFACE MOUNT



OPTION G



ISOCOM COMPONENTS LTD

Unit 25B, Park View Road West,
 Park View Industrial Estate, Brenda Road
 Hartlepool, Cleveland, TS25 1YD
 Tel: (01429) 863609 Fax :(01429) 863581

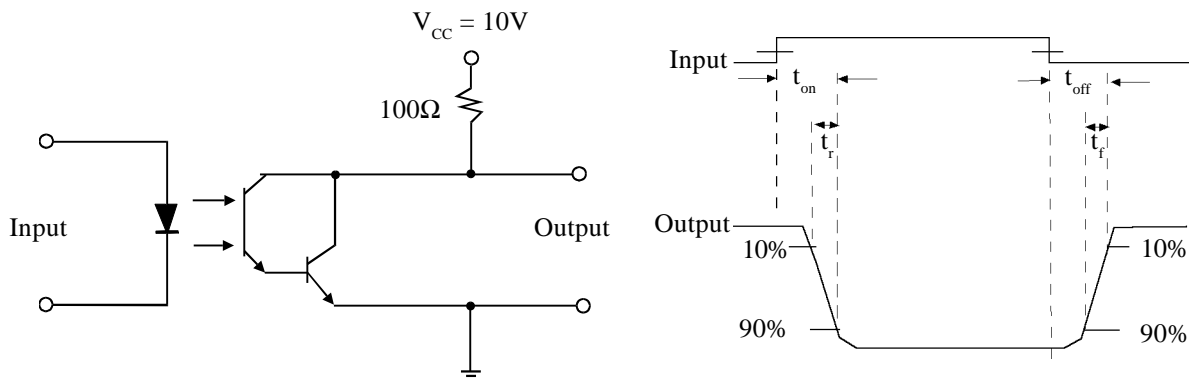
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

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)					$1\text{mA } I_F, 2\text{V } V_{CE}$ $1\text{mA } I_F, 2\text{V } V_{CE}$ $1\text{mA } I_F, 2\text{V } V_{CE}$	
	ISPD60, ISPD63	100			%		
	ISPD61, ISPD64	500			%		
	ISPD62, ISPD65	1000			%		
	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.

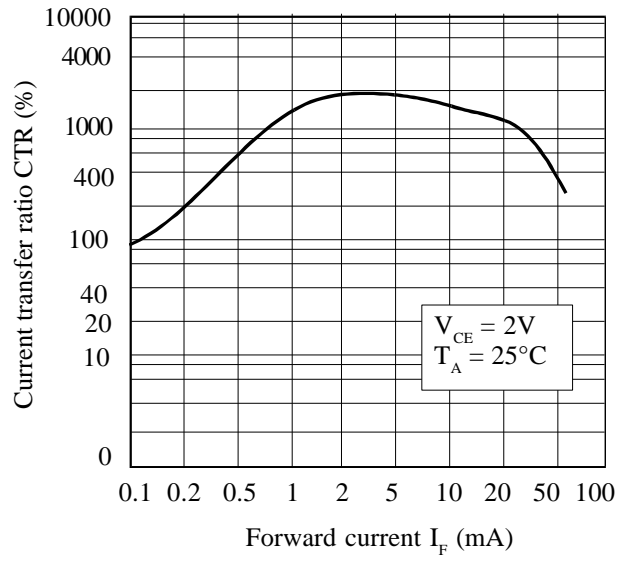
FIGURE 1



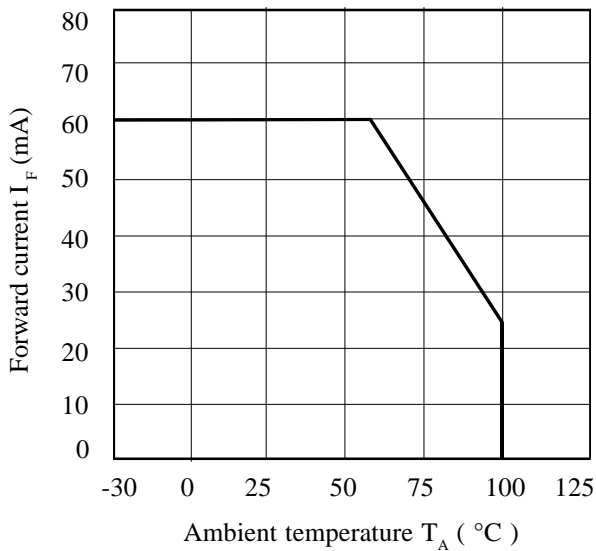
Collector Power Dissipation vs. Ambient Temperature



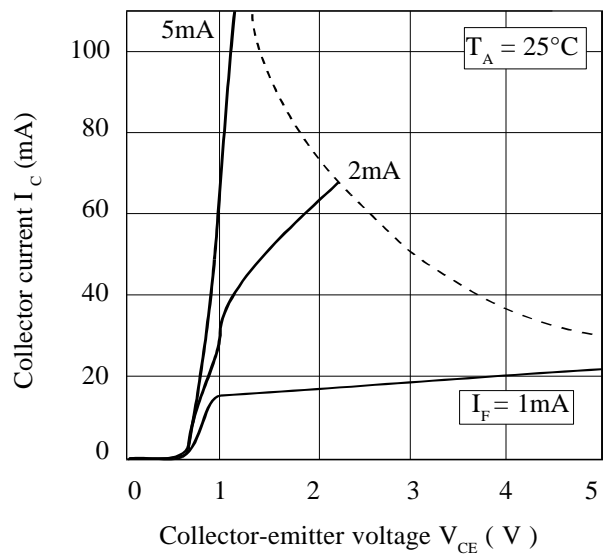
Current Transfer Ratio vs. Forward Current



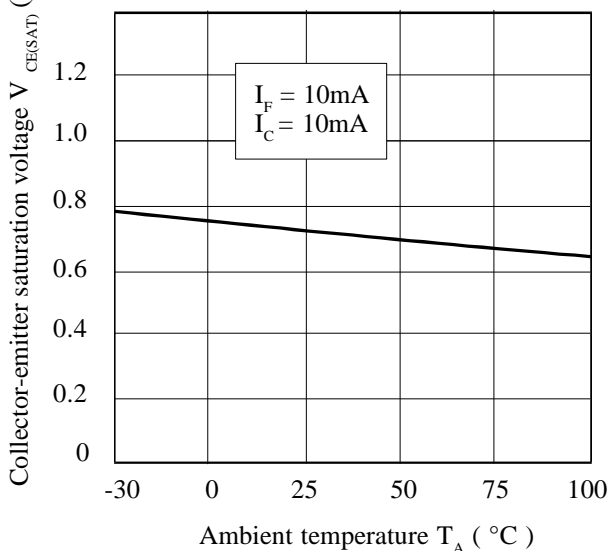
Forward Current vs. Ambient Temperature



Collector Current vs. Collector-emitter Voltage



Collector-emitter Saturation Voltage vs. Ambient Temperature



Normalized Current Transfer Ratio vs. Ambient Temperature

