



HIGH VOLTAGE DARLINGTON OUTPUT OPTICALLY COUPLED ISOLATOR

DESCRIPTION

The IS7000 is an optically coupled isolator consisting of infrared light emitting diode and a high voltage NPN silicon photo darlington which has an integral base-emitter resistor to optimise switching speed and elevated temperature characteristics in a space efficient, end-stackable 4 pin dual in line plastic package.

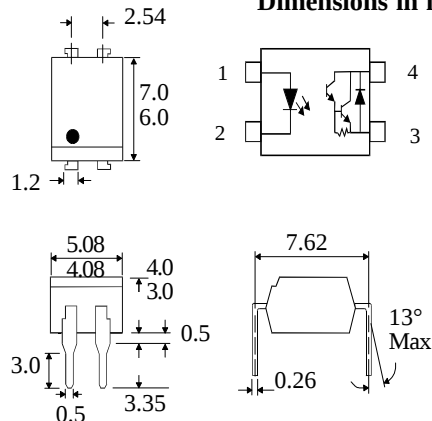
FEATURES

- 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 ($5.3kV_{RMS}$, $7.5kV_{PK}$)
- High Current Transfer Ratio (1000% min)
- High BV_{CEO} (300V min.)

APPLICATIONS

- Modems
- Copiers, facsimiles
- Numerical control machines
- Signal transmission between systems of different potentials and impedances

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 _____ 50mA
Reverse Voltage _____ 6V
Power Dissipation _____ 70mW

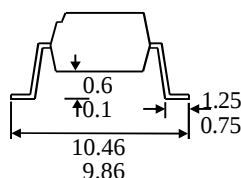
OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO} _____ 300V
Emitter-collector Voltage BV_{ECO} _____ 0.1V
Collector Current I_C _____ 150mA
Power Dissipation _____ 150mW

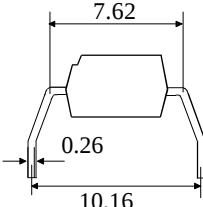
POWER DISSIPATION

Total Power Dissipation _____ 200mW

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

ISOCOM INC

1024 S. Greenville Ave, Suite 240,
Allen, TX 75002 USA
Tel: (214) 495-0755 Fax: (214) 495-0901
e-mail info@isocom.com
<http://www.isocom.com>

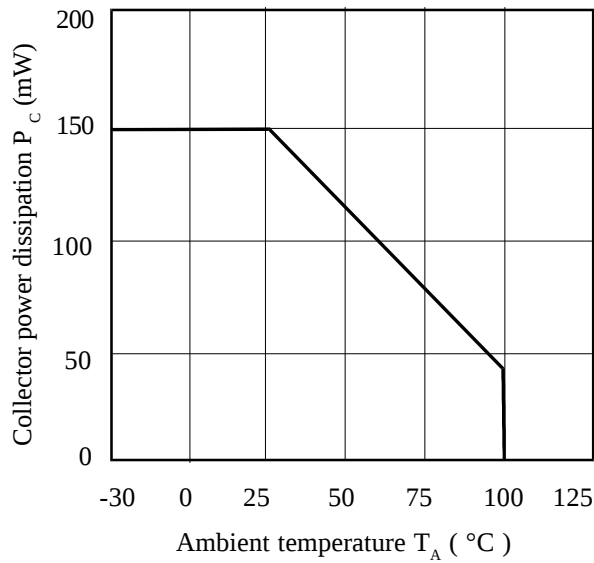
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION	
Input	Forward Voltage (V _F)	4	1.2	1.4	V	I _F = 10mA	
	Reverse Voltage (V _R)			V	I _R = 10μA		
	Reverse Current (I _R)			10	μA	V _R = 4V	
Output	Collector-emitter Breakdown (BV _{CEO})	300			V	I _C = 0.1mA (note 2)	
	Emitter-collector Breakdown (BV _{ECO})	0.1			V	I _E = 0.1mA	
	Collector-emitter Dark Current (I _{CEO})			200	nA	V _{CE} = 200V	
Coupled	Current Transfer Ratio (CTR)	1000	4000		%	1mA I _F , 2V V _{CE}	
	Collector-emitter Saturation VoltageV _{CE(SAT)}			1.2	V	20mA I _F , 100mA I _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				40	μs	V _{CC} = 10V, I _C = 10mA, R _L = 100Ω
	Output Fall Time tf				15	μs	
	Turn-on Time ton				50	μs	
Turn-off Time toff		15			μs		

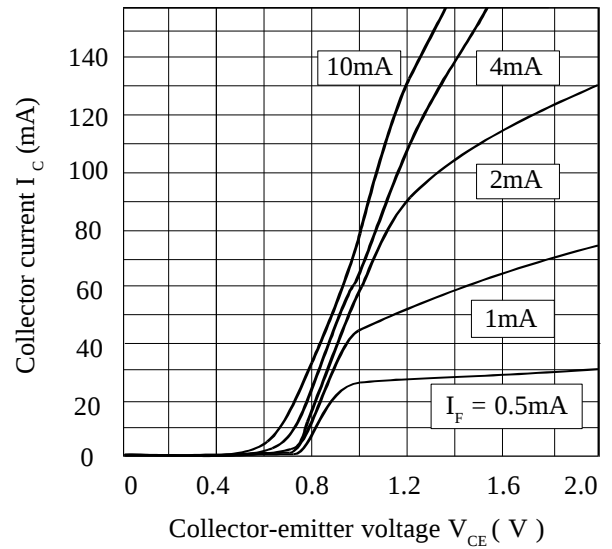
Note 1 Measured with input leads shorted together and output leads shorted together.

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

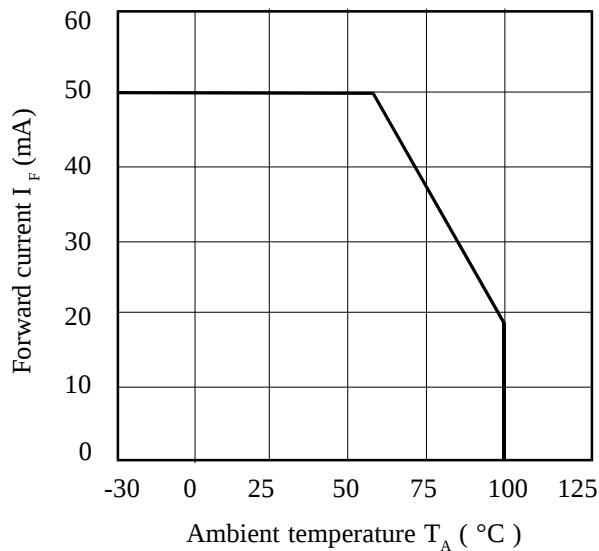
Collector Power Dissipation vs. Ambient Temperature



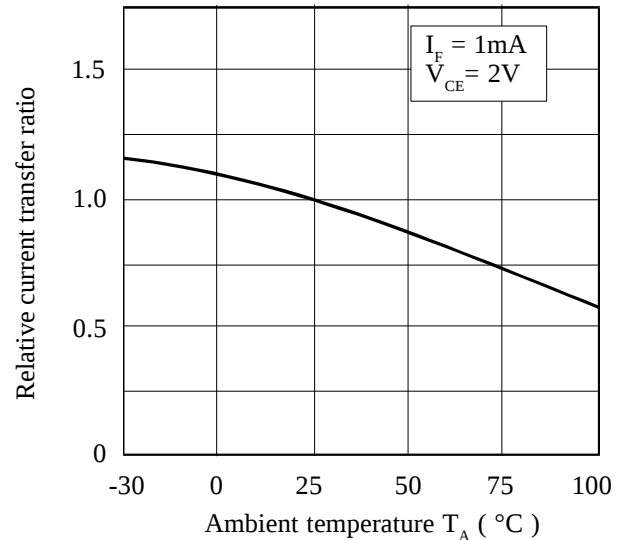
Collector Current vs. Collector-emitter Voltage



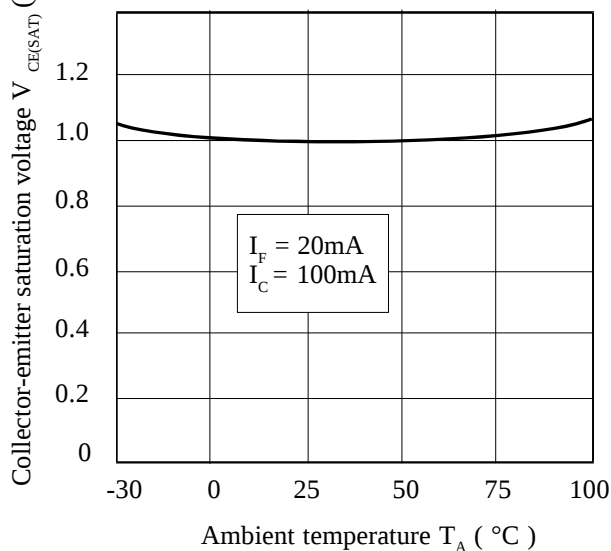
Forward Current vs. Ambient Temperature



Relative Current Transfer Ratio vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature



Collector Dark Current vs. Ambient Temperature

