



A.C. INPUT PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS

APPROVALS

- UL recognised, File No. E91231

'X' SPECIFICATION APPROVALS

- VDE 0884 approval pending
- EN60950 approval pending

DESCRIPTION

The IS733H optically coupled isolator consists of two infrared light emitting diodes connected in inverse parallel and NPN silicon photo transistor in a standard 6 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})
- AC or polarity insensitive input
- All electrical parameters 100% tested
- Custom electrical selections available

APPLICATIONS

- Computer terminals
- Industrial systems controllers
- Telephone sets, Telephone exchangers
- 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	_____	±150mA
Peak forward current	_____	±1A
Power Dissipation	_____	230mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV _{CEO}	_____	35V
Collector-base Voltage BV _{CBO}	_____	35V
Emitter-collector Voltage BV _{ECO}	_____	6V
Emitter-base Voltage BV _{EBO}	_____	6V
Power Dissipation	_____	160mW

POWER DISSIPATION

Total Power Dissipation	_____	320mW
(derate linearly 4.27mW/°C above 25°C)		

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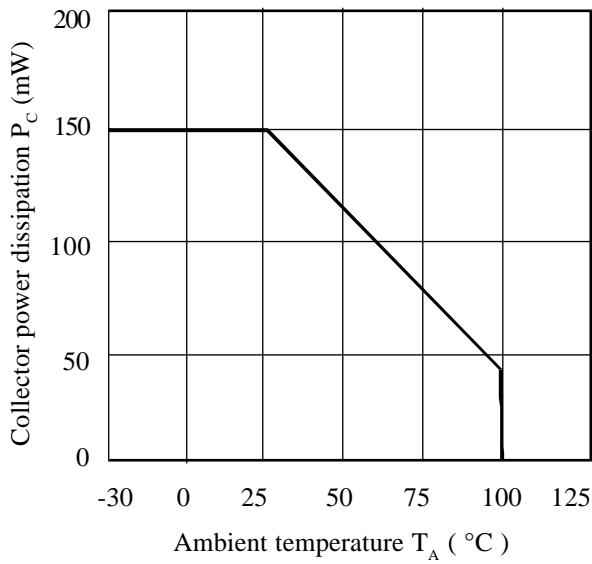
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.4	V	$I_F = \pm 20\text{mA}$
Output	Collector-emitter Breakdown (BV_{CEO}) (note 2)	35			V	$I_C = 1\text{mA}$
	Collector-base Breakdown (BV_{CBO})	35			V	$I_C = 100\mu\text{A}$
	Emitter-base Breakdown (BV_{EBO})	6			V	$I_E = 100\mu\text{A}$
	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)	15		300	%	$\pm 1\text{mA} I_F, 5\text{V } V_{CE}$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.2	V	$\pm 20\text{mA} I_F, 1\text{mA} I_C$
	Input to Output Isolation Voltage V_{ISO}	5300 7500			V_{RMS} V_{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 Output Fall Time tf		4 3	18 18	μs μs	$V_{CE} = 2\text{V},$ $I_C = 2\text{mA}, R_L = 100\Omega$

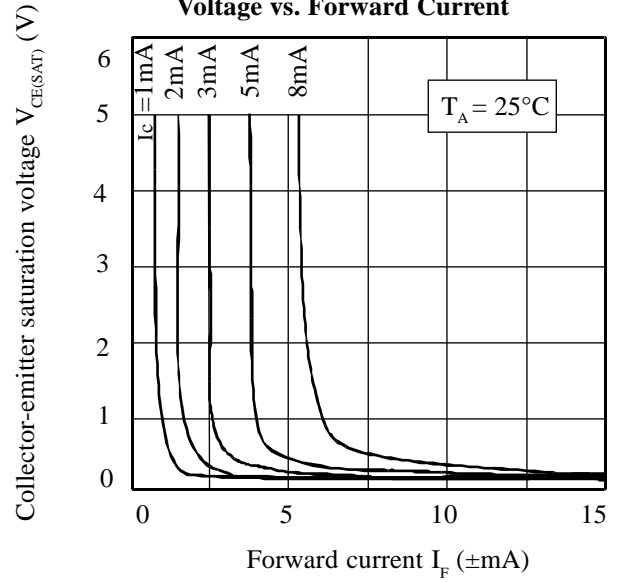
Note 1 Measured with input leads shorted together and output leads shorted together.

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

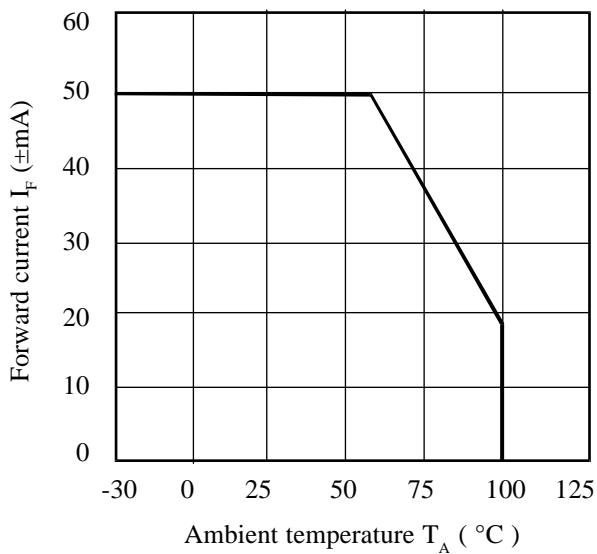
Collector Power Dissipation vs. Ambient Temperature



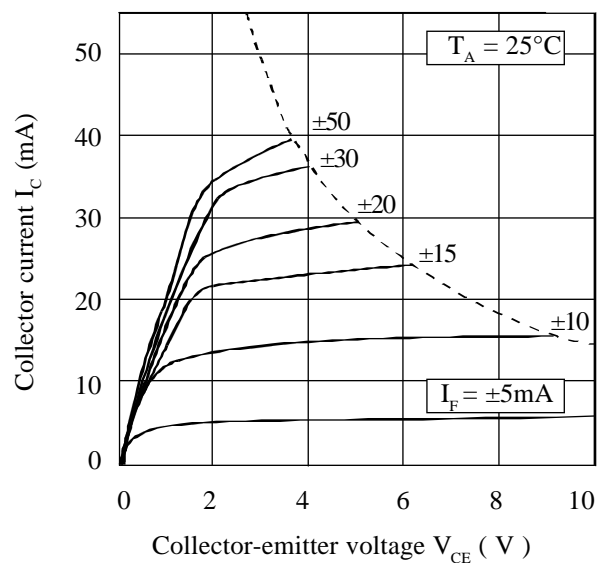
Collector-emitter Saturation Voltage vs. Forward Current



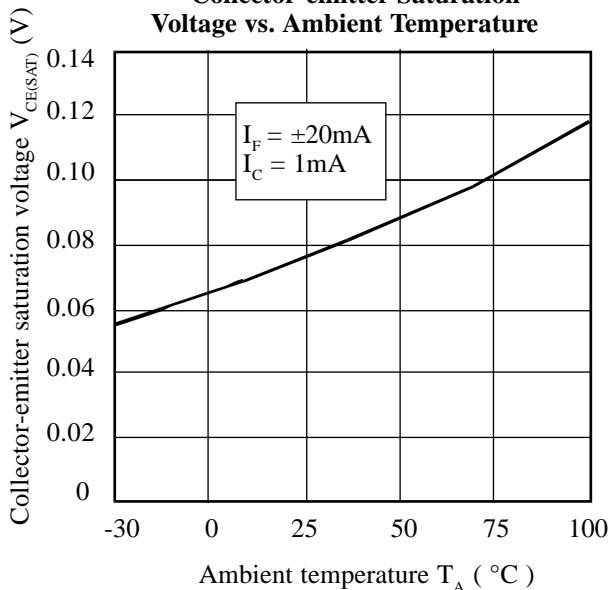
Forward Current vs. Ambient Temperature



Collector Current vs. Collector-emitter Voltage



Collector-emitter Saturation Voltage vs. Ambient Temperature



Current Transfer Ratio vs. Forward Current

