

A.C. INPUT PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS

APPROVALS

- UL recognised, File No. E91231

'X' SPECIFICATION APPROVALS

- VDE 0884 in 2 available lead forms : -
- STD
- G form
- EN60950 approval pending

DESCRIPTION

The IS604 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.

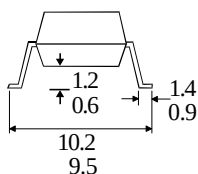
FEATURES

- 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

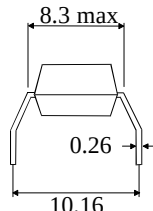
APPLICATIONS

- Computer terminals
- Industrial systems controllers
- Telephone sets, Telephone exchangers
- Signal transmission between systems of different potentials and impedances

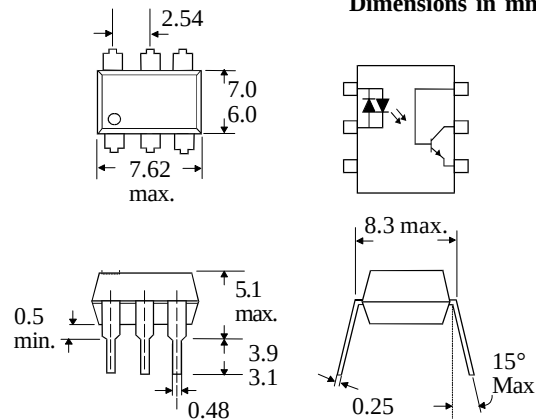
OPTION SM SURFACE MOUNT



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 _____ ±100mA
Peak Forward Current _____ ±1A
Power Dissipation _____ 200mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO} _____ 30V
Collector-base Voltage BV_{CBO} _____ 70V
Emitter-collector Voltage BV_{ECO} _____ 7V
Emitter-base Voltage BV_{EBO} _____ 7V
Power Dissipation _____ 300mW

POWER DISSIPATION

Total Power Dissipation _____ 350mW
(derate linearly 4.67mW/°C above 25°C)

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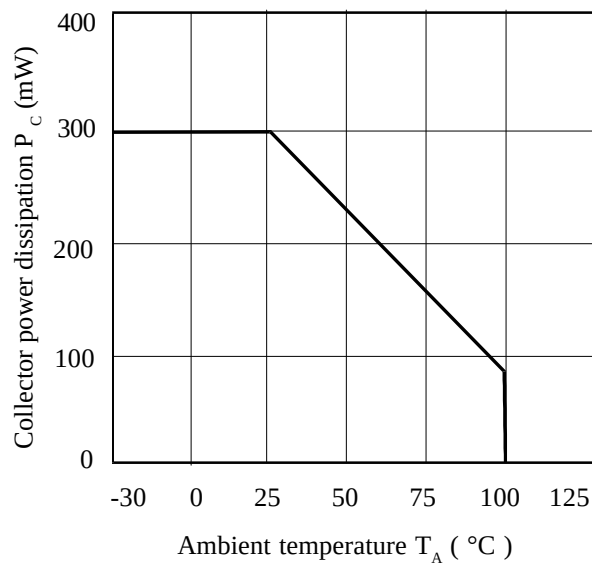
ELECTRICAL CHARACTERISTICS ($T_A = 25^{\circ}\text{C}$ Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.5	V	$I_F = \pm 10\text{mA}$
Output	Collector-emitter Breakdown (BV_{CEO}) (note 2)	30			V	$I_C = 1\text{mA}$
	Collector-base Breakdown (BV_{CBO})	70			V	$I_C = 100\mu\text{A}$
	Emitter-base Breakdown (BV_{EBO})	7			V	$I_E = 100\mu\text{A}$
	Emitter-collector Breakdown (BV_{ECO})	7			V	$I_E = 100\mu\text{A}$
	Collector-emitter Dark Current (I_{CEO})			50	nA	$V_{CE} = 10\text{V}$
Coupled	Current Transfer Ratio (CTR) (note 2)	50			%	$\pm 10\text{mA} I_F$, $10\text{V } V_{CE}$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.4	V	$\pm 10\text{mA} I_F$, $0.5\text{mA} I_C$
	Current Transfer Ratio Symmetry	0.33		3.0		$\pm 10\text{mA} I_F$, $10\text{V } V_{CE}$
	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)
	Turn-on Time t_{on}		3		μs	$V_{CC} = 10\text{V}$, $I_C = 2\text{mA}$, $R_L = 100\Omega$
	Turn-off Time t_{off}		3		μs	
	Output Rise Time t_r		2		μs	
	Output Fall Time t_f		2		μs	

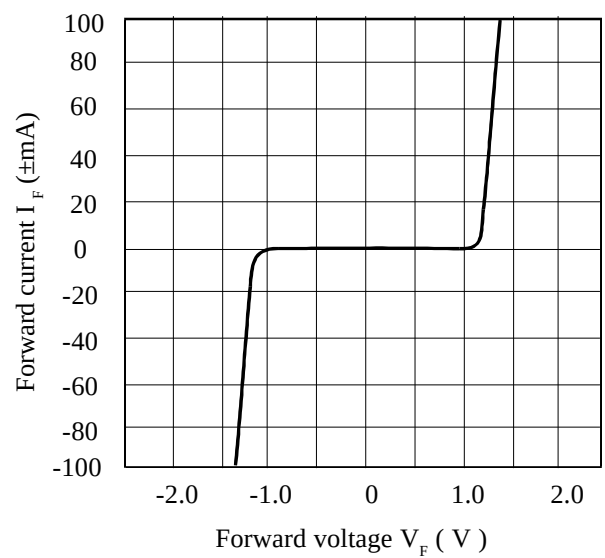
Note 1 Measured with input leads shorted together and output leads shorted together.

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

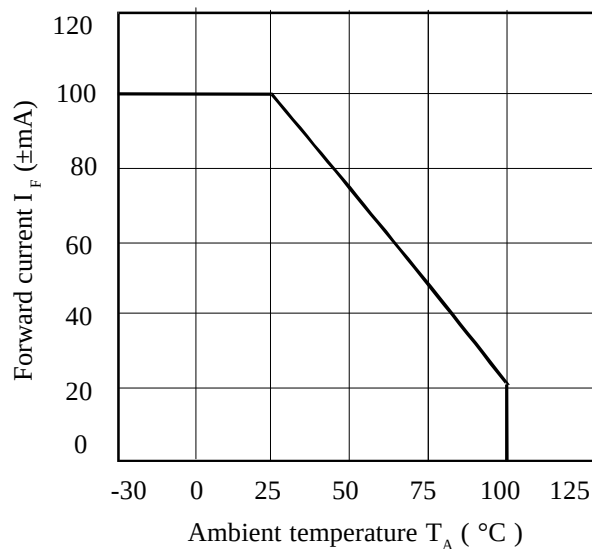
Collector Power Dissipation vs. Ambient Temperature



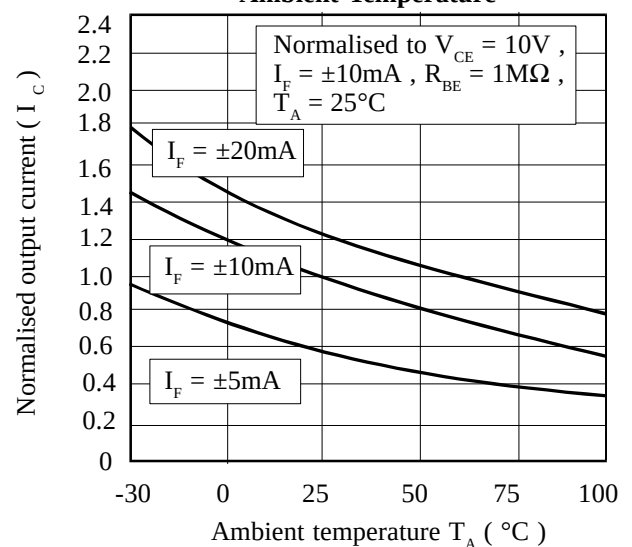
Forward Current vs. Forward Voltage



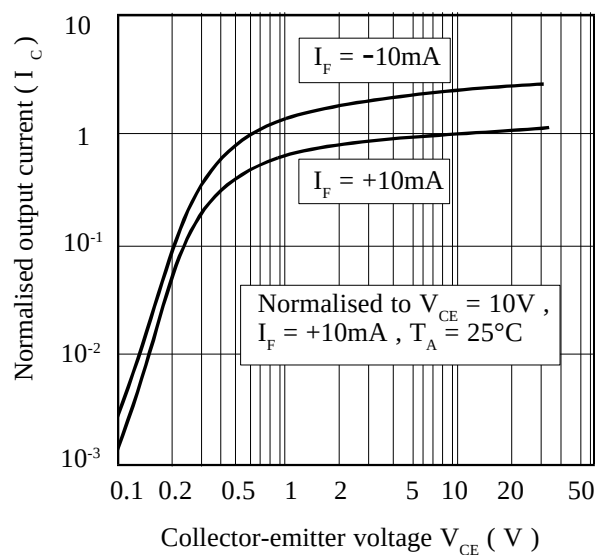
Forward Current vs. Ambient Temperature



Normalised Output Current vs. Ambient Temperature



Normalised Output Current vs. Collector-emitter Voltage



Normalised Output Current vs. Forward Current

