IS201, IS202, IS203, IS204,
ISD201, ISD202, ISD203, ISD204,
ISQ201, ISQ202, ISQ203, ISQ204

HIGH DENSITY PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS

APPROVALS

- UL recognised, File No. E91231

'X' SPECIFICATION APPROVALS

- VDE 0884 in 3 available lead form : -
  - STD
  - G form
  - SMD approved to CECC 00802
- IS20* Certified to EN60950 by the following Test Bodies :-
  Nemko - Certificate No. P01102464
  Fimko - Certificate No. FI18166
  Semko - Reference No. 0202037/01-22
  Demko - Certificate No. 311158-01
- BSI approved - Certificate No. 8001

DESCRIPTION

The IS20*, ISD20*, ISQ20* series of optically coupled isolators consist of infrared light emitting diodes and NPN silicon photo transistors in space efficient dual in line plastic packages.

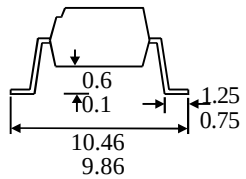
FEATURES

- 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 BV_{CEO} (70V min)
- All electrical parameter 100% tested
- Custom electrical selections available

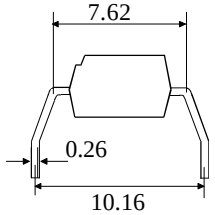
APPLICATIONS

- Computer terminals
- Industrial systems controllers
- Signal transmission between systems of different potentials and impedances

OPTION SM
SURFACE MOUNT

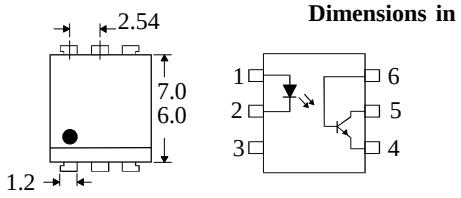


OPTION G

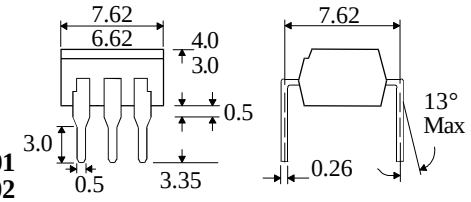


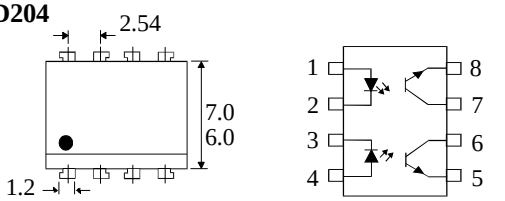
Dimensions in mm

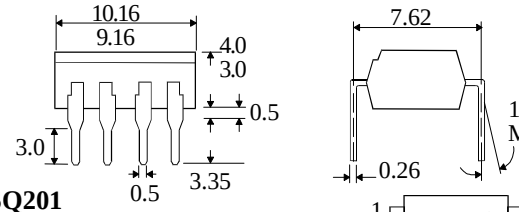
IS201
IS202
IS203
IS204



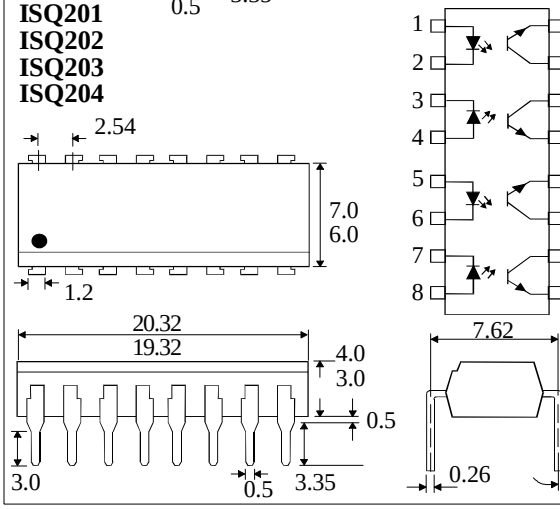
ISD201
ISD202
ISD203
ISD204







ISQ201
ISQ202
ISQ203
ISQ204



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http://www.isocom.com

ABSOLUTE MAXIMUM RATINGS
(25°C unless otherwise specified)

Storage Temperature	-40°C to +125°C
Operating Temperature	-25°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}	70V
Emitter-collector Voltage BV_{ECO}	6V
Power Dissipation	150mW

POWER DISSIPATION

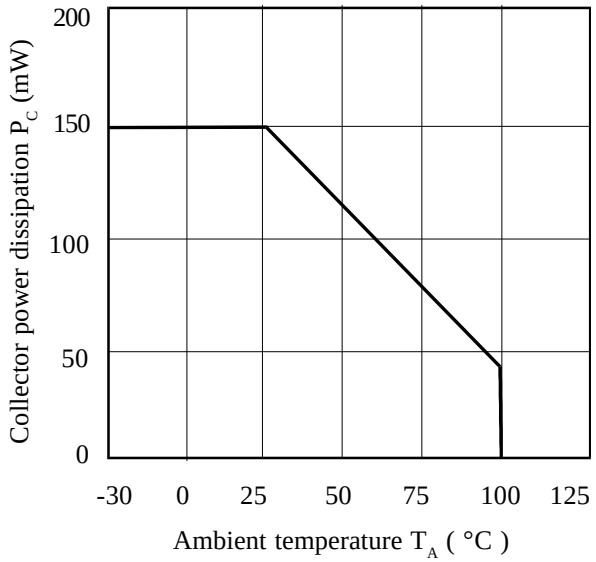
Total Power Dissipation	170mW
(derate linearly 2.67mW/°C above 25°C)	

ELECTRICAL CHARACTERISTICS (T_A = 25°C Unless otherwise noted)

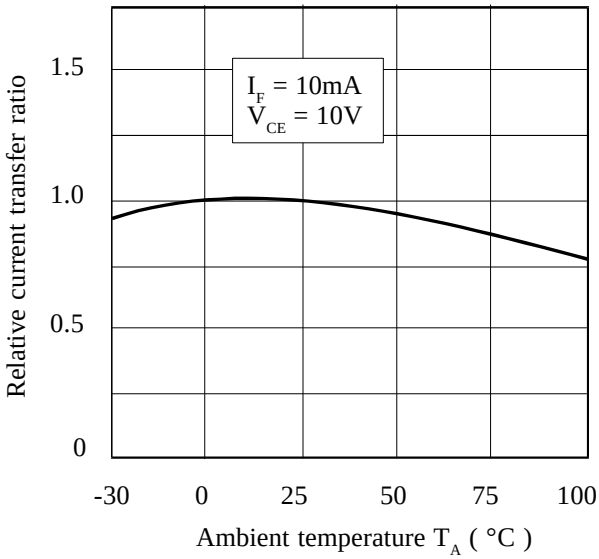
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.65	V	I_F = 50mA
	Reverse Current (I_R)			10	µA	V_R = 4V
Output	Collector-emitter Breakdown (BV_{CEO}) (Note 2)	70			V	I_C = 1mA
	Emitter-collector Breakdown (BV_{ECO})	6			V	I_E = 100µA
	Collector-emitter Dark Current (I_{CEO})			50	nA	V_{CE} = 10V
Coupled	Current Transfer Ratio (CTR) (Note 2)					
	IS201, ISD201, ISQ201	75			%	10mA I_F, 10V V_{CE}
	IS201, ISD201, ISQ201	10			%	1mA I_F, 10V V_{CE}
	IS202, ISD202, ISQ202	125		250	%	10mA I_F, 10V V_{CE}
	IS202, ISD202, ISQ202	30			%	1mA I_F, 10V V_{CE}
	IS203, ISD203, ISQ203	225		450	%	10mA I_F, 10V V_{CE}
	IS203, ISD203, ISQ203	50			%	1mA I_F, 10V V_{CE}
	IS204, ISD204, ISQ204	200		400	%	10mA I_F, 10V V_{CE}
	IS204, ISD204, ISQ204	100			%	1mA I_F, 10V V_{CE}
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$		0.2	0.4	V	10mA I_F , 2mA 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 Turn on Time t_{ON}		3.0		µs	I_F = 10mA
	Output Turn off Time t_{OFF}		2.5		µs	V_{CE} = 5V, R_L = 75Ω

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.

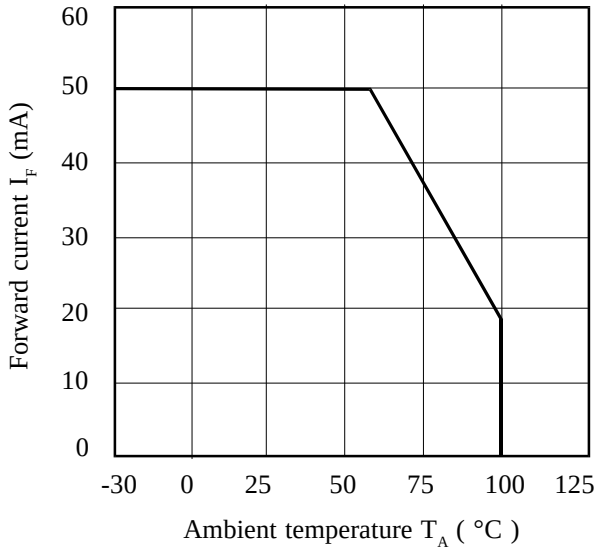
Collector Power Dissipation vs. Ambient Temperature



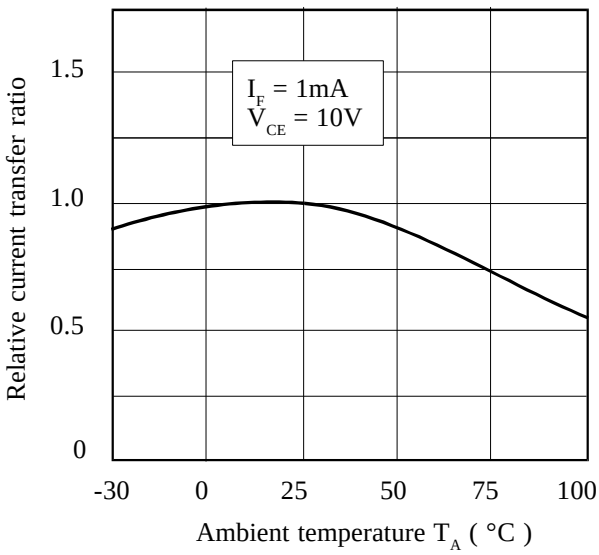
Relative Current Transfer Ratio vs. Ambient Temperature



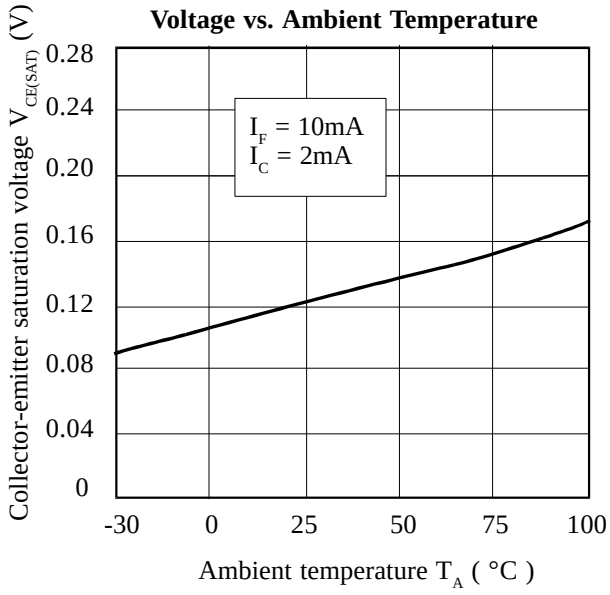
Forward Current vs. Ambient Temperature



Relative Current Transfer Ratio vs. Ambient Temperature



Collector-emitter Saturation Voltage vs. Ambient Temperature



Relative Current Transfer Ratio vs. Forward Current