

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



# ISOCOM

COMPONENTS



## HIGH DENSITY PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS

### APPROVALS

- UL recognised, File No. E91231  
Package Code "GG" or "FF"

### 'X' SPECIFICATION APPROVALS

- VDE 0884 in 3 available lead form : -  
- STD  
- G form  
- SMD approved to CECC 00802
- IS20\* Certified to EN60950 by :-  
Nemko - Certificate No. P01102464

### 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.

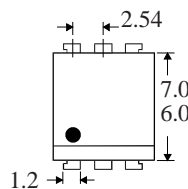
### FEATURES

- 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<sub>RMS</sub>, 7.5kV<sub>PK</sub>)
- High BV<sub>CEO</sub> (70V min)
- All electrical parameter 100% tested
- Custom electrical selections available

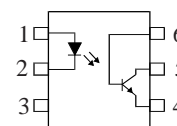
### APPLICATIONS

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

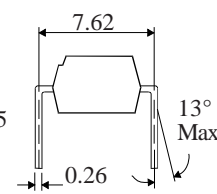
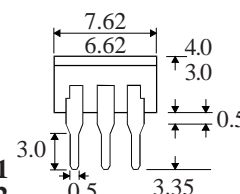
IS201  
IS202  
IS203  
IS204



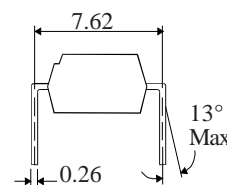
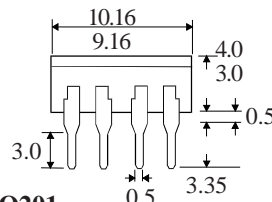
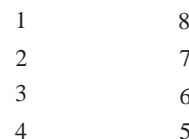
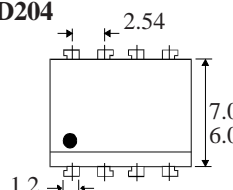
Dimensions in mm



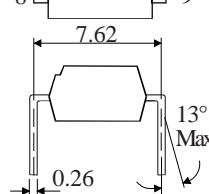
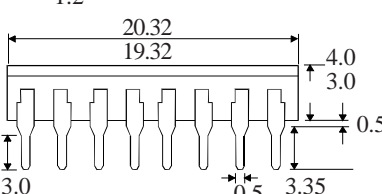
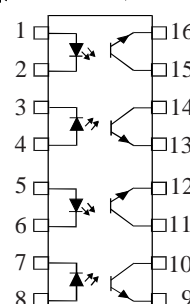
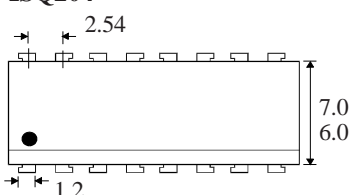
ISD201  
ISD202  
ISD203  
ISD204



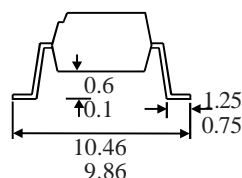
ISQ201  
ISQ202  
ISQ203  
ISQ204



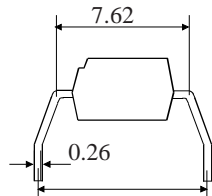
ISQ201  
ISQ202  
ISQ203  
ISQ204



OPTION SM  
SURFACE MOUNT



OPTION G



ISOCOM COMPONENTS 2004 LTD

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**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  
 Collector Current \_\_\_\_\_ 50mA  
 Power Dissipation \_\_\_\_\_ 150mW

**POWER DISSIPATION**

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

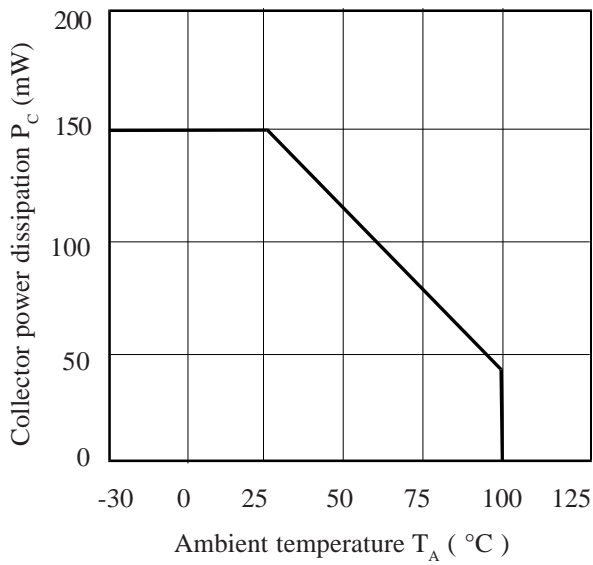
**ELECTRICAL CHARACTERISTICS (  $T_A = 25^\circ\text{C}$  Unless otherwise noted )**

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage ( $V_F$ )		1.2	1.65	V	$I_F = 50\text{mA}$
	Reverse Current ( $I_R$ )			10	$\mu\text{A}$	$V_R = 4\text{V}$
Output	Collector-emitter Breakdown ( $BV_{CEO}$ ) (Note 2)	70			V	$I_C = 1\text{mA}$
	Emitter-collector Breakdown ( $BV_{ECO}$ )	6			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)					
	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 $R_{ISO}$	$5 \times 10^{10}$			$\Omega$	$V_{IO} = 500\text{V}$ (note 1)	
Output Turn on Time $t_{ON}$			3.0	$\mu\text{s}$	$I_F = 10\text{mA}$	
Output Turn off Time $t_{OFF}$			2.5	$\mu\text{s}$	$V_{CE} = 5\text{V}$ , $R_L = 75\Omega$	

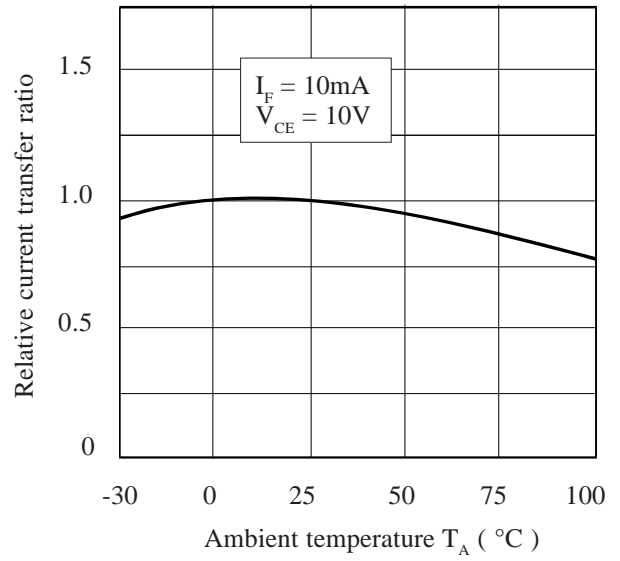
Note 1 Measured with input leads shorted together and output leads shorted together.

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

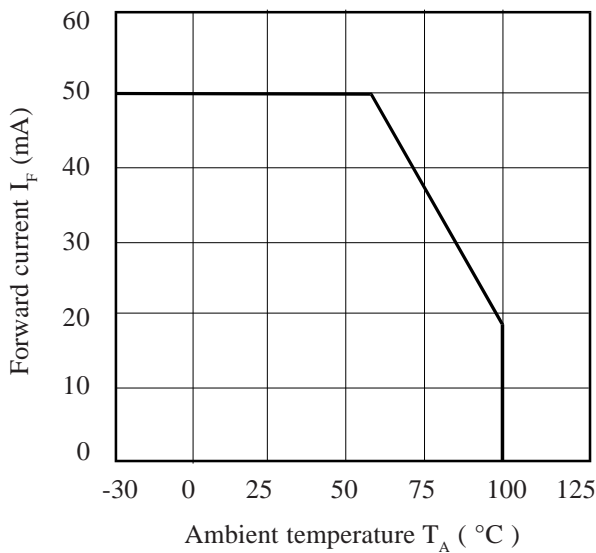
**Collector Power Dissipation vs. Ambient Temperature**



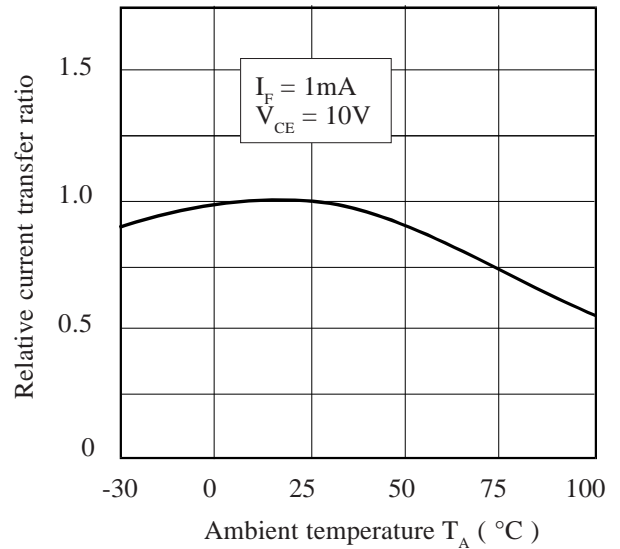
**Relative Current Transfer Ratio vs. Ambient Temperature**



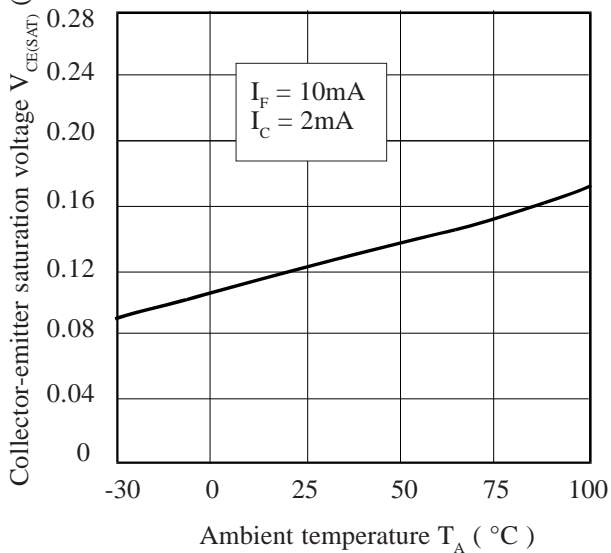
**Forward Current vs. Ambient Temperature**



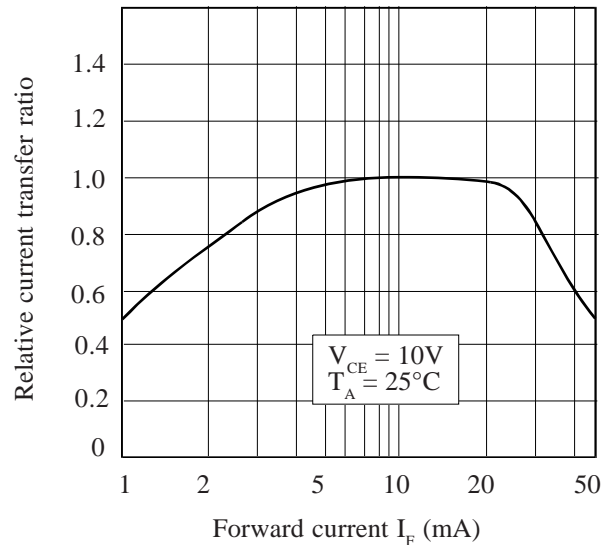
**Relative Current Transfer Ratio vs. Ambient Temperature**



**Collector-emitter Saturation Voltage vs. Ambient Temperature**



**Relative Current Transfer Ratio vs. Forward Current**



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