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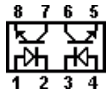
ISD203: OPTICALLY COUPLED ISOLATORS

Circuit



Features

5000 V Isolation.
High Current Transfer Ratio (225% to 450%).
Low Cost Dual-In-Line Package.
Dual Configuration.

Description

The ISD-203 is an optically coupled isolator. Each channel consists of a Gallium Arsenide infrared emitting diode and an NPN silicon phototransistor mounted in a standard 6-pin dual-in-line package. Surface Mount Option Available.
The ISD-203 offers two channels per unit.
All electrical parameters are 100% tested by manufacturing. Specifications are guaranteed to a cumulative 0.65% AQL.

Absolute Maximum Ratings (Ta=25℃)

Storage Temperature:	-55℃ to +150℃
Operating Temperature:	-55℃ to +100℃
Lead Soldering:	260℃ for 10s, 1.6mm from case
Input-to-Output Isolation Voltage:	±5000Vdc (note 1)

Input Diode

Forward DC Current:	60mA
Reverse DC Voltage:	3V
Peak Forward Current:	1A (PW.=100µs, duty ratio 0.001)
Power Dissipation:	100mW
Derate Linearly:	1.33mW/℃ above 25℃

Output Transistor

Collector-Emitter Voltage:	30V
Emitter-Collector Voltage:	7V
Power Dissipation:	150mW
Derate Linearly:	2.00mW/℃ above 25℃

Package

Total Power Dissipation:	400mW
Derate Linearly:	5.33mW/℃ above 25℃

Electro-optical Characteristics (Ta=25℃)

INPUT	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
V_F	Forward Voltage	I_F=20mA		1.2	1.5	V
		I_F=1mA		1	1.2	
I_R	Reverse Current	V_R=3V			10	µA
OUTPUT	**PARAMETER**	**CONDITIONS**	**MIN**	**TYP**	**MAX**	**UNIT**
H_{FE}		I_C=100µA, V_{CE}=5V	100	200		
BV_{CEO}	Collector-Emitter Voltage	I_C=1mA	30			V
BV_{ECO}	Emitter-Collector Voltage	I_E=0.1mA	7			V
I_{CEO}	Collector-Emitter Dark Current	V_{CE}=10V			50	nA
COUPLED	**PARAMETER**	**CONDITIONS**	**MIN**	**TYP**	**MAX**	**UNIT**
CTR	DC Current Transfer Ratio	I_F=10mA, V_{CE}=10V	200		450	%
		I_F=1mA, V_{CE}=10V	50	90		%
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage	I_F=10mA, I_C=2.0mA		0.2	0.4	V
C_F	Floating Capacitance	V=0, f=1MHz		0.6	1	pf
	Input-Output Isolation Resistance	V_{IO}=500V (note 1)	5E11			ohm

Notes

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

We reserve the right to alter the specification without prior notice.

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