



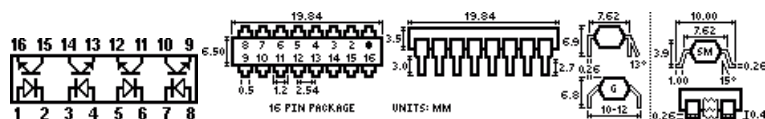
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ISQ203, ISQ204-1 OPTICALLY COUPLED ISOLATORS

Circuit



Features

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

Description

The ISQ203 and ISQ204-1 are optically coupled isolators. Each channel consists of a Gallium Arsenide infrared emitting diode and an NPN silicon phototransistor mounted in a standard 16-pin dual-in-line package. Surface Mount Option Available.
 These devices offer four 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 °C)	
Storage Temperature:	-55 °C to +150 °C
Operating Temperature:	-55 °C to +100 °C
Lead Soldering:	260 °C 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/°C above 25 °C
Output Transistor	
Collector-Emitter Voltage:	30V
Emitter-Collector Voltage:	7V
Power Dissipation:	150mW
Derate Linearly:	2.00mW/°C above 25 °C
Package	
Total Power Dissipation:	500mW
Derate Linearly:	6.67mW/°C above 25 °C

Electro-optical Characteristics (Ta=25 °C)

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	V
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					
	ISQ204-1	I _F =10mA, V _{CE} =10V	200		400	%
	ISQ203	I _F =10mA, V _{CE} =10V	225		450	%
		I _F =1mA, I _C =10V	50	90		%
V _{CE(SAT)}	Collector-Emitter Saturation Voltage	I _F =10mA, I _C =2mA		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)	500			Gohm

Notes

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

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