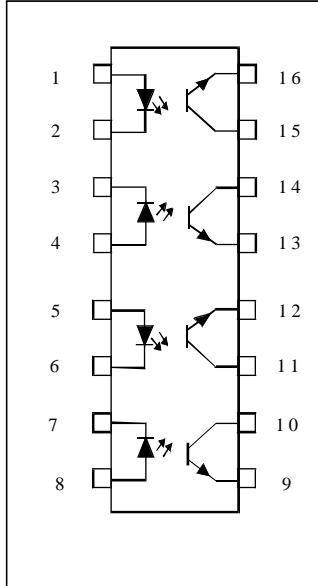


ISQ203B.I.

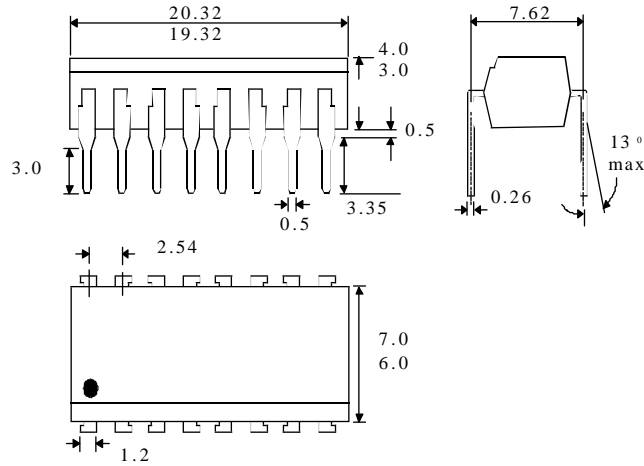


**OPTICALLY COUPLED ISOLATOR
TRANSISTOR OUTPUT**

SCHEMATIC



PACKAGE DIMENSIONS INCHES (MM)



DESCRIPTION

The ISQ203 B.I. are optically coupled isolators consisting of Gallium Arsenide infrared emitting diodes and NPN silicon phototransistors mounted in a standard 16-pin dual-in-line package with four channels per unit. These devices are burnt in for 168 hours.

OUTPUT TRANSISTOR

Collector Emitter Voltage BV_{CEO} _____ 30V
 Emitter Collector Voltage BV_{ECO} _____ 7V
 Power Dissipation _____ 150mW
 (derate linearly 2.00mW/°C above 25°C)

ABSOLUTE MAXIMUM RATINGS

(25 °C unless otherwise noted)

Storage Temperature _____ -55°C to +125°C
 Operating Temperature _____ -55°C to +100°C
 Lead Soldering Temperature
 (2mm from case for 10 secs) _____ 260°C
 Input to Output Isolation Voltage _____ 7500V_{PK}

PACKAGE

Total Power Dissipation _____ 500mW
 (derate linearly 6.67mW/°C above 25°C)

INPUT DIODE

Forward D.C. Current _____ 60mA
 Reverse D.C. Voltage _____ 3V
 Peak Forward Current
 (pw ≤ 100µs, duty ratio 0.001) _____ 1A
 Power Dissipation
 (derate linearly 1.33W/°C above 25°C) _____ 100mW

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ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

Parameter		Min.	Typ	Max.	Units	Test Condition
Input	Forward Voltage (V_F)		1.2	1.5	Volt	$I_F = 20 \text{ mA}$
	Forward Voltage (V_F)		1.0	1.2	Volt	$I_F = 1 \text{ mA}$
	Reverse Current (I_R)			10	μA	$V_R = 3 \text{ V}$
Output	Collector-emitter Voltage (BV_{CEO})	30	50		Volt	$I_C = 1 \text{ mA}$
	Emitter-collector Voltage (BV_{ECO})	7	9		Volt	$I_E = 0.1 \text{ mA}$
	Collector-emitter Dark Current (I_{CEO})			50	nA	$V_{CE} = 10 \text{ V}$
Coupled	DC Current Transfer Ratio (CTR)	225		450	%	$I_F = 10 \text{ mA}, V_{CE} = 10 \text{ V}$
	DC Current Transfer Ratio (CTR)	50			%	$I_F = 1 \text{ mA}, V_{CE} = 10 \text{ V}$
	Collector-emitter Saturation Voltage $V_{CE}(\text{Sat})$				Volt	$I_F = 10 \text{ mA}, I_C = 2 \text{ mA}$
	Floating Capacitance (C_F)			0.4	pF	$V = 0 \text{ f} = 1 \text{ MHz}$
	Input-to-Output Isolation Resistance Riso	10^{12}		10	ohm	$V_{IO} = 500 \text{ V}$ (see note 1)
	Input to Output Isolation Voltage	7500			Vpk	(note 1)
	Output Rise Time (t_r)				μs	$I_F = 10 \text{ mA}, V_{CC} = 5 \text{ V}$
	Output Turn - on Time (t_{on})		0.2		μs	$R_L = 75 \Omega$,
	Output Fall Time (t_f)		0.6		μs	Fig 1
	Output Turn - off Time (t_{off})		2.0		μs	
		3.0				
		2.0				
		2.5				

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

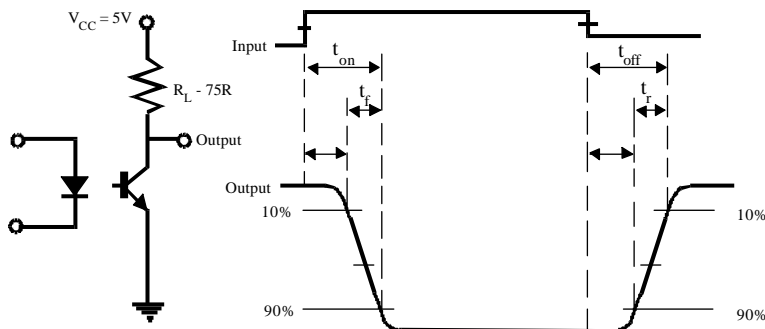


FIG 1

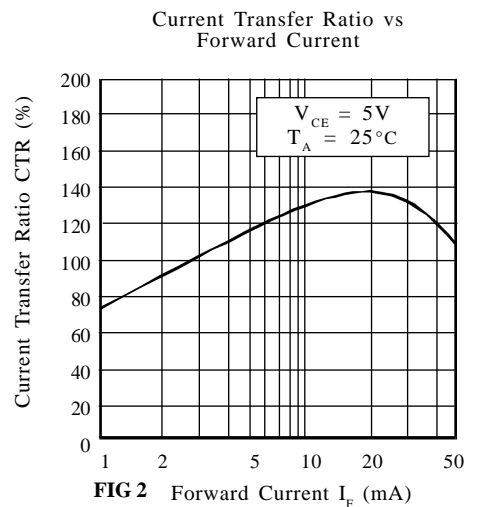


FIG 2 Forward Current I_F (mA)