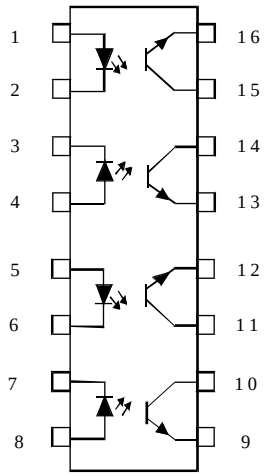
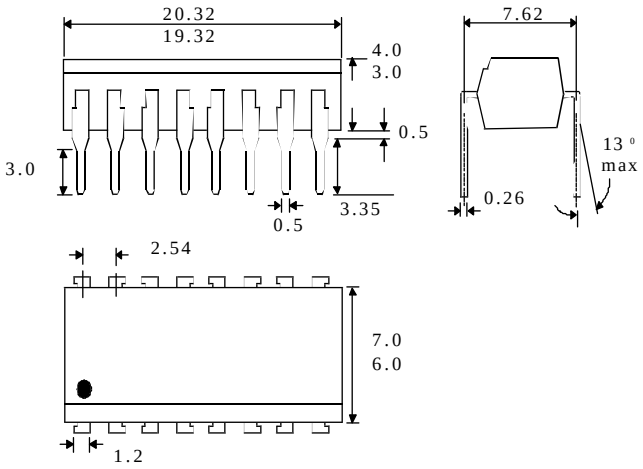
ISQ203-11B.I.

OPTICALLY COUPLED ISOLATOR TRANSISTOR OUTPUT

SCHEMATIC



PACKAGE DIMENSIONS INCHES (MM)



DESCRIPTION

The ISQ203-11B.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.

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 $_{Pk}$

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

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)	

PACKAGE

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

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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 mA
	Forward Voltage (V_F)		1.0	1.2	Volt	I_F = 1mA
	Reverse Current (I_R)			10	µA	V_R = 3V
Output						
	Collector-emitter Voltage (BV_{CEO})	30	50		Volt	I_C = 1mA
	Emitter-collector Voltage (BV_{ECO})	7	9		Volt	I_E = 0.1 mA
	Collector-emitter Dark Current (I_{CEO})			50	nA	V_{CE} = 10 V
Coupled	DC Current Transfer Ratio (CTR)	180		360	%	I_F = 10 mA, V_{CE} = 10V
	DC Current Transfer Ratio (CTR)	50			%	I_F = 1mA, V_{CE} = 10V
	Collector-emitter Saturation Voltage V_{CE} (Sat)				Volt	I_F = 10 mA, I_C = 2 mA
	Floating Capacitance (C_F)			0.4	pF	V = 0 f = 1 MHz
	Input-to-Output Isolation Resistance Riso	10^{12}		10	ohm	V_{IO} = 500V (see note 1)
	Input to Output Isolation Voltage	7500			Vpk	(note 1)
	Output Rise Time (t_r)				µS	I_F = 10mA, V_{CC} = 5V
	Output Turn - on Time (t_{on})		0.2		µS	R_L = 75R,
	Output Fall Time (t_f)		0.6		µS	Fig 1
	Output Turn - off Time (t_{off})				µS	
			2.0			
			3.0			
			2.0			
			2.5			

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

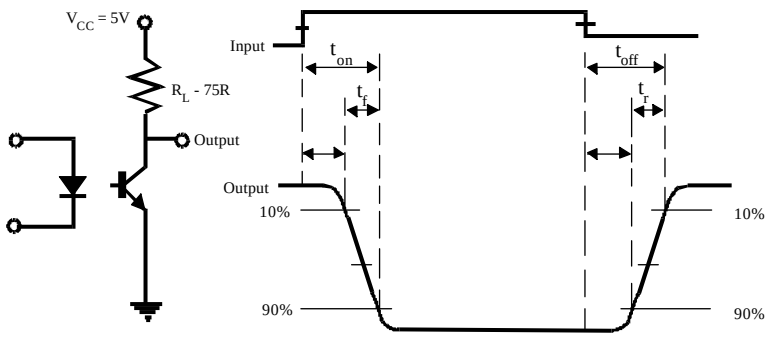

FIG 1

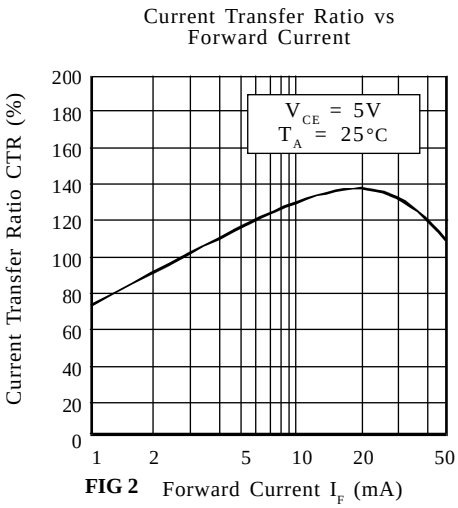

FIG 2