

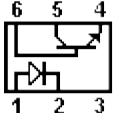
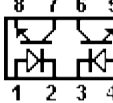
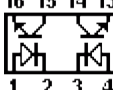
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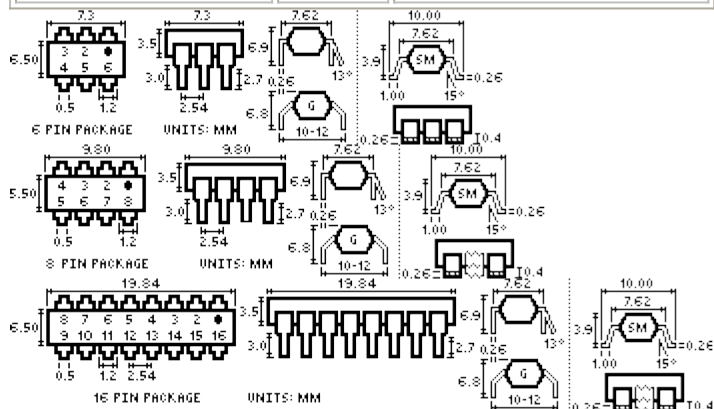
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IS74, ISD74, ISQ74 OPTICALLY COUPLED ISOLATOR

Circuit

	IS74	Similar Optocouplers
	ISD74	Similar Optocouplers
	ISQ74	Similar Optocouplers



Features

- 1500 V Isolation
- High Current Transfer Ratio 50% typical
- Low Cost Dual-In-Line Package
- Single, Dual or Quad Configuration

Description

The ISD74 and ISQ74 is each an optically coupled isolator. Each channel consists of a Gallium Arsenide infrared emitting diode and an NPN silicon phototransistor mounted in a standard dual-in-line package. Surface Mount Option Available.

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:	±1500Vdc (note 1)

Input Diode

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

Output Transistor

Collector-Emitter Voltage:	20V (IS74, ISQ74) 30V (ISD74)
Power Dissipation:	150mW 2.00mW/°C above 25°C

Package

Total Power Dissipation:	200mW (IS74) 400mW (ISD74) 500mW (ISQ74)
Derate Linearly:	6.67mW/°C above 25°C

Electro-optical Characteristics (Ta=25°C)

INPUT	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
V_F	Forward Current	$I_F=60\text{mA}$		1.3	1.5	V
I_R	Reverse Current	$V_R=3\text{V}$			10	μA
OUTPUT						
BV_{CEO}	Collector-Emitter Voltage	$I_C=1\text{mA}$	20	45		V
I_{CEO}	Collector-Emitter Dark Current	$V_{CE}=5\text{V}$		3	500	nA
COUPLED						
I_C/I_F	DC Current Transfer Ratio	$I_F=16\text{mA}, V_{CE}=5\text{V}$	12.5	50		%
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage	$I_F=16\text{mA}, I_C=2.0\text{mA}$		0.3	0.5	V
C_F	Floating Capacitance	$V=0, f=1\text{MHz}$		0.6	1	pF
	Input-Output Isolation Resistance	$V_{IO}=500\text{V}, (\text{note } 1)$	500			Gohm

Notes

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

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