



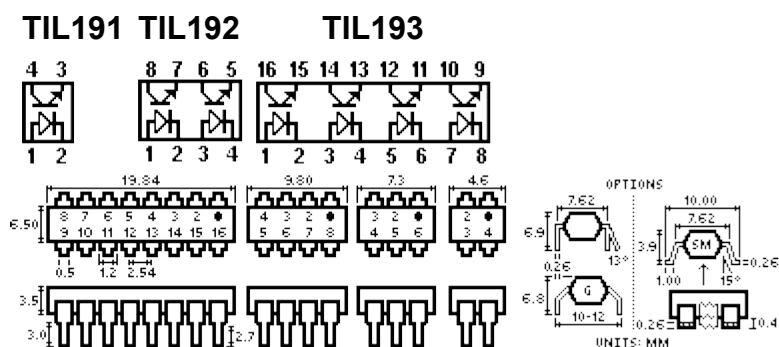
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TIL191, TIL191A, TIL191B TIL192, TIL192A, TIL192B TIL193, TIL193A, TIL193B OPTICALLY COUPLED ISOLATOR

Circuit and Package



Features

- 5000 V Isolation
- High Current Transfer Ratio 50% Typical
- Low Cost Dual-In-Line Package
- Dual Configuration

Description

The TIL191, TIL192 and TIL193 are 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:	±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
Power Dissipation:	150mW
Derate Linearly:	2.00mW/°C above 25°C

Package

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

Electro-optical Characteristics (Ta=25°C)

INPUT	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
V _F	Forward Voltage	I _F =60mA		1.3	1.5	V
I _R	Reverse Current	V _R =3V			10	µA
OUTPUT						
BV _{CEO}	Collector-Emitter Voltage	I _C =1mA	20	45		V
I _{CEO}	Collector-Emitter Dark Current	V _{CE} =5V		3	500	nA
COUPLED						
I _C /I _F	DC Current Transfer Ratio	I _F =16mA, V _{CE} =5V				
		TIL191, 192, 193	12.5	20		%
		TIL191A, 192A, 193A		50		%
		TIL191B, 192B, 193B		100		%
V _{CE(SAT)}	Collector-Emitter Saturation Voltage	I _F =16mA, I _C =2.0mA		0.3	0.5	V
C _F	Floating Capacitance	V=0, f=1MHz		0.6	1	pF
R _{ISO}	Input-Output Isolation Resistance	V _{IO} =500V (note 1)	50	100		Gohm

Notes

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

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