

TIL191, TIL192, TIL193
TIL191A, TIL192A, TIL193A
TIL191B, TIL192B, TIL193B



HIGH DENSITY MOUNTING PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS

APPROVALS

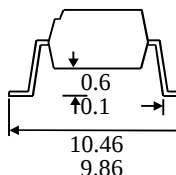
- UL recognised, file no. E91231

- High Isolation Voltage ($5.3\text{kV}_{\text{RMS}}, 7.5\text{kV}_{\text{PK}}$)
- All electrical parameters 100% tested
- Custom electrical selections available

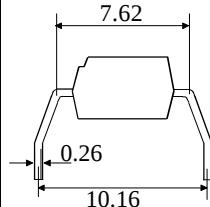
APPLICATIONS

- Computer terminals
- Industrial systems controllers
- Measuring instruments
- Signal transmission between systems of different potentials and impedances

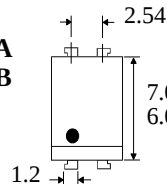
OPTION SM SURFACE MOUNT



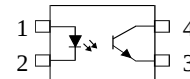
OPTION G



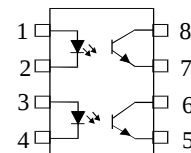
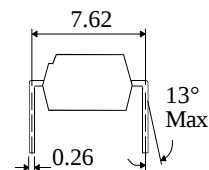
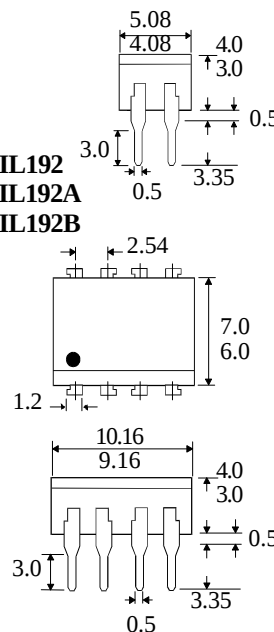
TIL191 TIL191A TIL191B



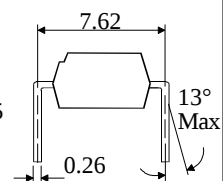
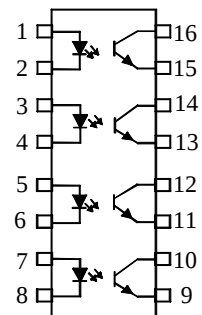
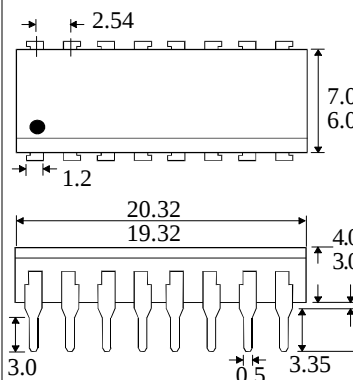
Dimensions in mm



TIL192 TIL192A TIL192B



TIL193 TIL193A TIL193B



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ABSOLUTE MAXIMUM RATINGS
(25°C unless otherwise specified)

Storage Temperature _____ -55°C to + 125°C
Operating Temperature _____ -55°C to + 100°C
Lead Soldering Temperature
(1/16 inch (1.6mm) from case for 10 secs) 260°C

INPUT DIODE

Forward Current _____ 50mA
Reverse Voltage _____ 5V
Power Dissipation _____ 70mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO} _____ 35V
Emitter-collector Voltage BV_{ECO} _____ 6V
Power Dissipation _____ 150mW

POWER DISSIPATION

Total Power Dissipation _____ 200mW
(derate linearly 2.67mW/°C above 25°C)

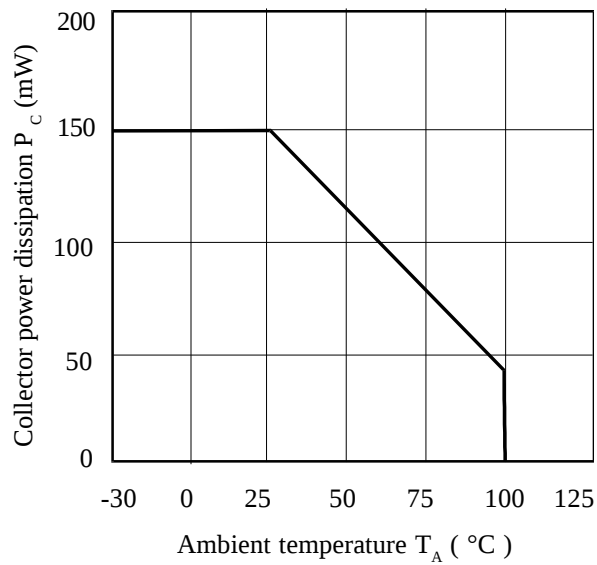
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)	5	1.2	1.4	V	$I_F = 20\text{mA}$ $I_R = 10\mu\text{A}$ $V_R = 5\text{V}$
	Reverse Voltage (V_R)				V	
	Reverse Current (I_R)			10	μA	
Output	Collector-emitter Breakdown (BV_{CEO}) (Note 2)	35			V	$I_C = 0.5\text{mA}$ $I_E = 100\mu\text{A}$ $V_{CE} = 24\text{V}$
	Emitter-collector Breakdown (BV_{ECO})	6			V	
	Collector-emitter Dark Current (I_{CEO})			100	nA	
Coupled	Current Transfer Ratio (CTR) (Note 2) TIL191, TIL192, TIL193	20			%	5mA I_F , 5V V_{CE}
	TIL191A, TIL192A, TIL193A	50			%	
	TIL191B, TIL192B, TIL193B	100			%	
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.4	V	5mA I_F , 1mA I_C
	Input to Output Isolation Voltage V_{ISO}	5300 7500			V_{RMS} V_{PK}	See note 1 See note 1
	Input-output Isolation Resistance R_{ISO}	5×10^{10}			Ω	$V_{IO} = 500\text{V}$ (note 1)
	Output Rise Time t_r		6		μs	$V_{CC} = 5\text{V}$, $I_C = 2\text{mA}$, $R_L = 100\Omega$
	Output Fall Time t_f		6		μs	

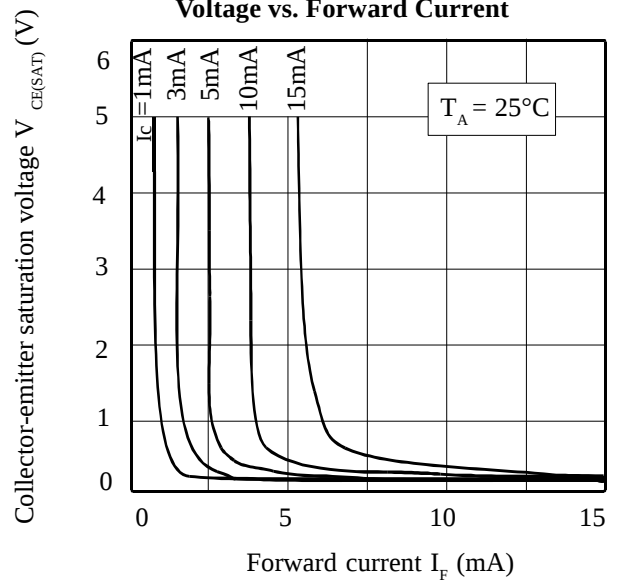
Measured with input leads shorted together and output leads shorted together.

Note 2 Special Selections are available on request. Please consult the factory.

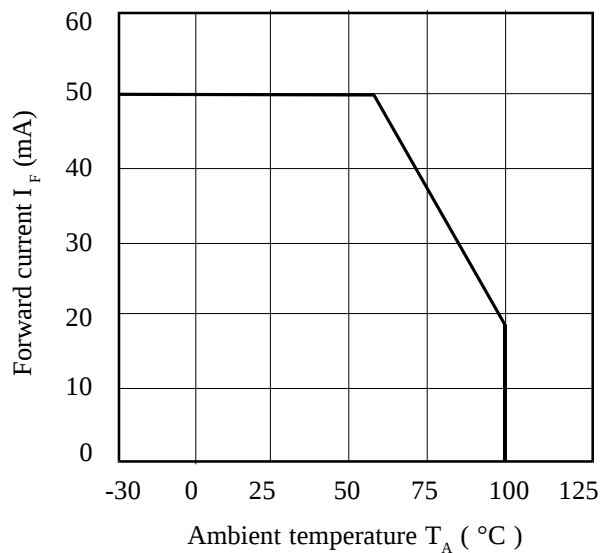
Collector Power Dissipation vs. Ambient Temperature



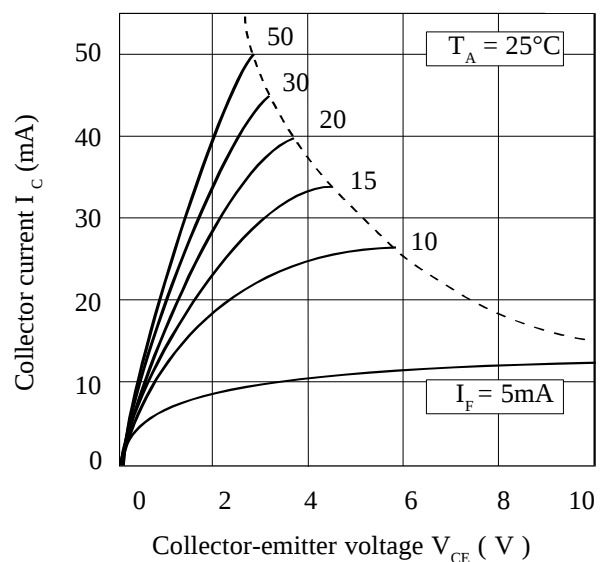
Collector-emitter Saturation Voltage vs. Forward Current



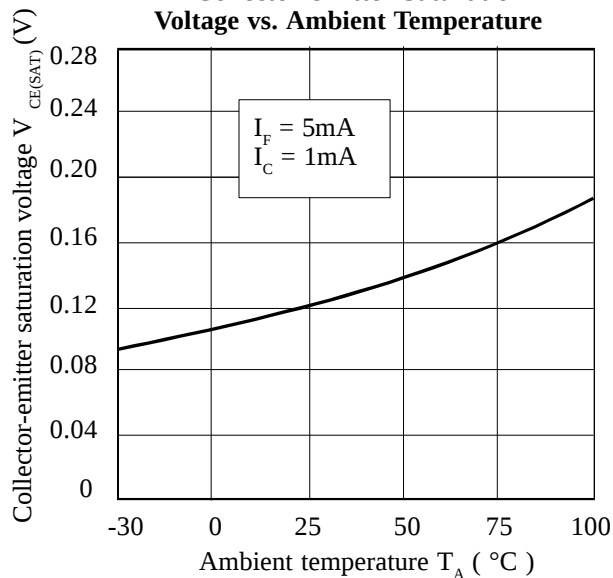
Forward Current vs. Ambient Temperature



Collector Current vs. Collector-emitter Voltage



Collector-emitter Saturation Voltage vs. Ambient Temperature



Current Transfer Ratio vs. Forward Current

