TIL191, TIL191X, TIL192, TIL192X, TIL193, TIL193X, TIL191A, TIL191AX, TIL192A,TIL192AX, TIL193A, TIL193ATIL191B, TIL191BX, TIL192B, TIL192BX, TIL193B, TIL193BX

HIGH DENSITY MOUNTING PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS

ROHS COMPLIANT

APPROVALS

- UL recognised, file no. E91231
  Package " EE "

'X' SPECIFICATION APPROVALS

- VDE 0884 in 3 available lead form : -
  - STD
  - G form
  - SMD approved to CECC 00802

DESCRIPTION

The TIL191, TIL192, TIL193 series of optically coupled isolators consist of infrared light emitting diodes and NPN silicon photo transistors in space efficient dual in line plastic packages. The standard parts TIL191, TIL192, TIL193 are tested for a CTR of 20% minimum. Parts with the suffix A or B are tested for a CTR of 50 and 100% minimum respectively.

FEATURES

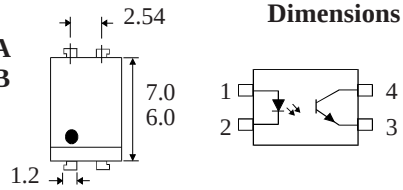
- Options :-
  10mm lead spread - add G after part no.
  Surface mount - add SM after part no.
  Tape&reel - add SMT&R after part no.
- Three Current Transfer Ratio grades
- High Isolation Voltage ($5.3kV_{RMS}$,$7.5kV_{PK}$)
- All electrical parameters 100% tested
- Custom electrical selections available

APPLICATIONS

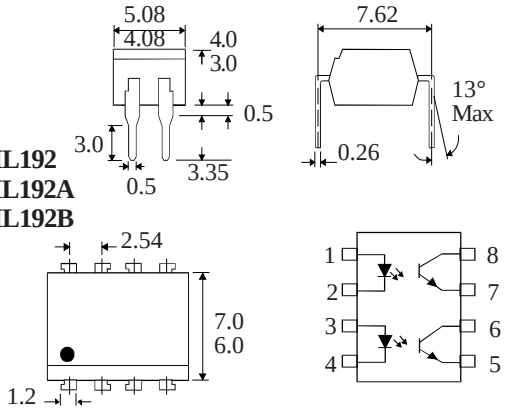
- Computer terminals
- Industrial systems controllers
- Measuring instruments
- Signal transmission between systems of different potentials and impedances

Dimensions in mm

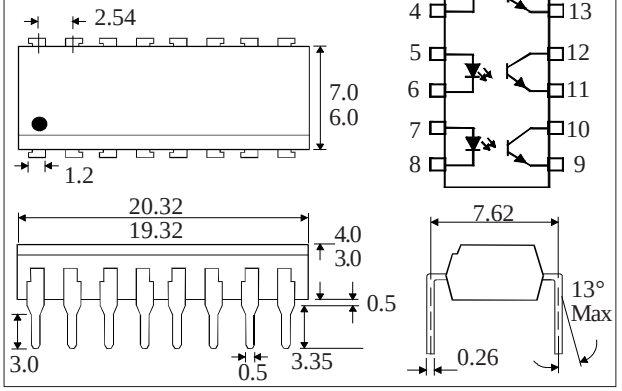
TIL191
TIL191A
TIL191B



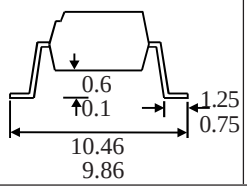
TIL192
TIL192A
TIL192B



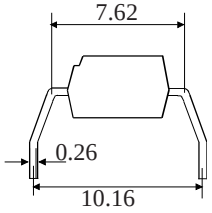
TIL193
TIL193A
TIL193B



OPTION SM
SURFACE MOUNT



OPTION G



ISOCOM COMPONENTS LTD
Unit 25B, Park View Road West,
Park View Industrial Estate, Brenda Road
Hartlepool, TS25 1UD England Tel: (01429)863609
Fax : (01429) 863581 e-mail sales@isocom.co.uk
http://www.isocom.com

ABSOLUTE MAXIMUM RATINGS
(25°C unless otherwise specified)

Storage Temperature	-55°C to + 125°C
Operating Temperature	-30°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	6V
Power Dissipation	70mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO}	35V
Emitter-collector Voltage BV_{ECO}	6V
Collector Current	50mA
Power Dissipation	150mW

POWER DISSIPATION

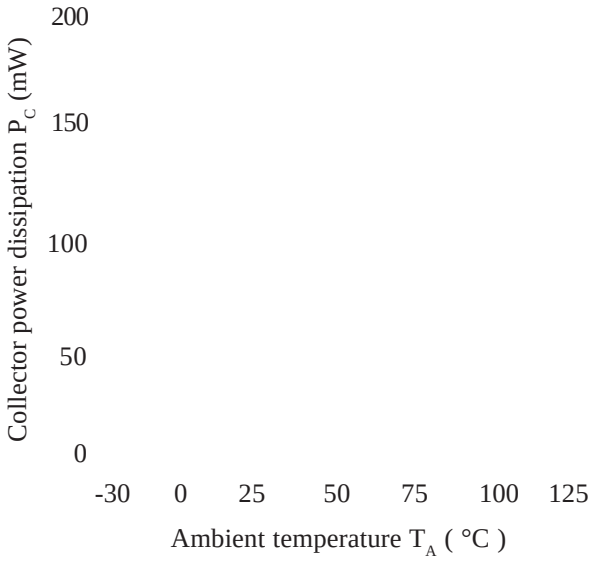
Total Power Dissipation	200mW
(derate linearly 2.67mW/°C above 25°C)	

ELECTRICAL CHARACTERISTICS (T_A = 25°C Unless otherwise noted)

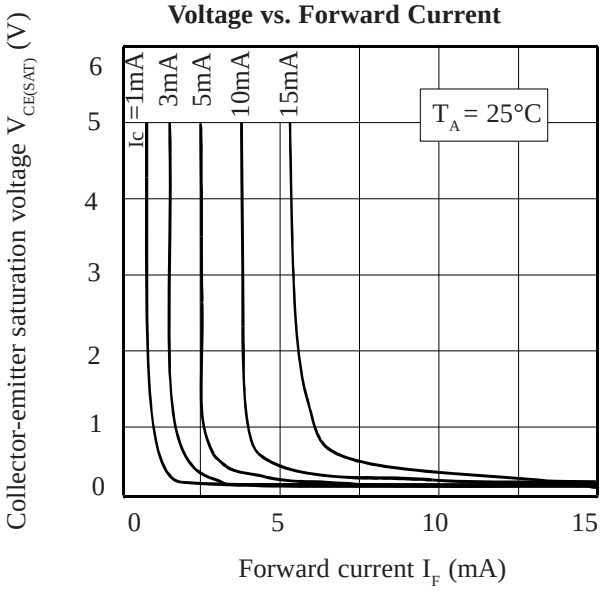
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.4	V	I_F = 20mA
	Reverse Current (I_R)			10	µA	V_R = 4V
Output	Collector-emitter Breakdown (BV_{CEO}) (Note 2)	35			V	I_C = 0.5mA
	Emitter-collector Breakdown (BV_{ECO})	6			V	I_E = 100µA
	Collector-emitter Dark Current (I_{CEO})			100	nA	V_{CE} = 20V
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			V_{RMS}	See note 1
		7500			V_{PK}	See note 1
	Input-output Isolation Resistance R_{ISO}	$5x10^{10}$			Ω	V_{IO} = 500V (note 1)
	Output Rise Time tr		4		µs	V_{CE} = 2V,
	Output Fall Time tf		3		µs	I_C = 2mA, R_L = 100Ω

Note 1 Measured with input leads shorted together and output leads shorted together.
Note 2 Special Selections are available on request. Please consult the factory.

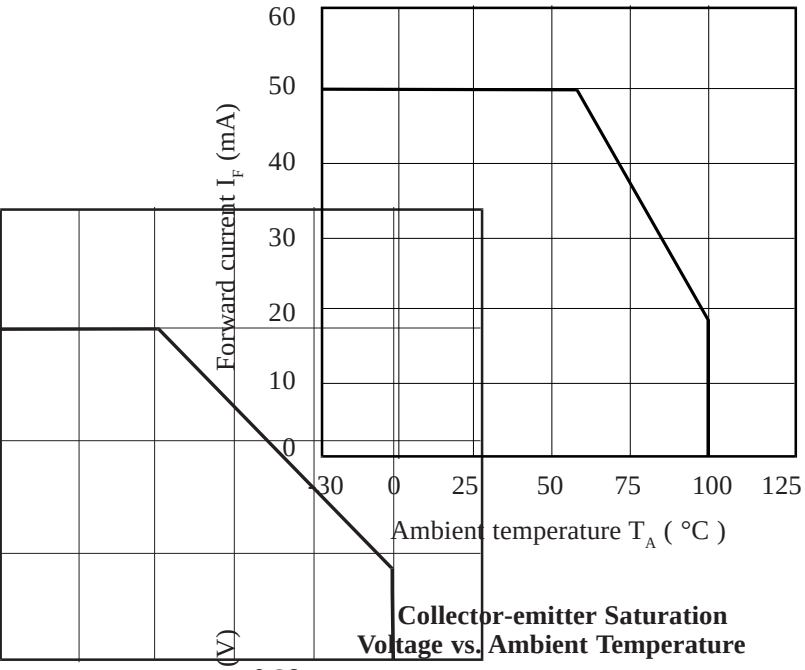
Collector Power Dissipation vs. Ambient Temperature



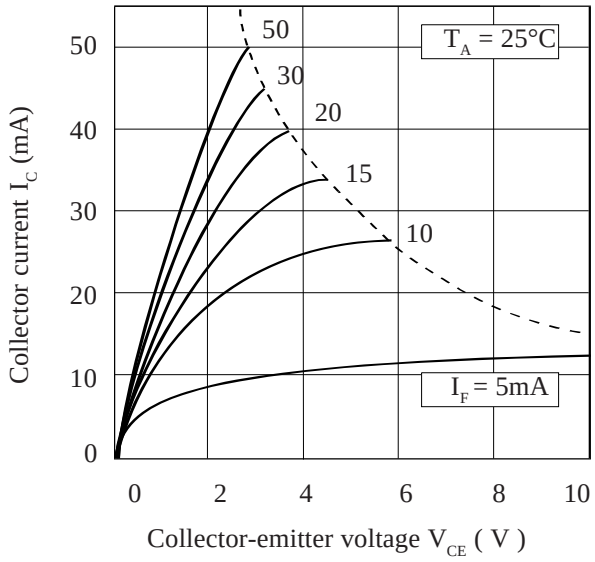
Collector-emitter Saturation Voltage vs. Forward Current



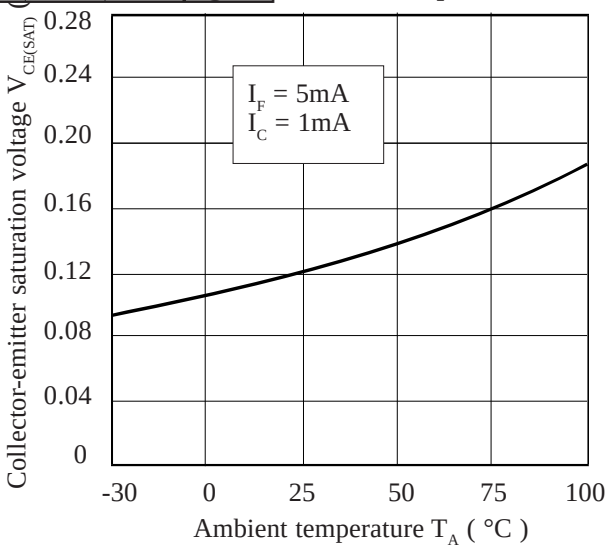
Forward Current vs. Ambient Temperature



Collector Current vs. Collector-emitter Voltage



Collector-emitter Saturation Voltage vs. Ambient Temperature



Current Transfer Ratio vs. Forward Current