TIL197, TIL197X, TIL198, TIL198X, TIL199, TIL199X,TIL197A, TIL197AX, TIL198A, TIL198AX, TIL199A, TIL199AX, TIL197B, TIL197BX, TIL198B, TIL198BX, TIL199B, TIL199BX

ISOCOM COMPONENTS

HIGH DENSITY MOUNTING PHOTODARLINGTON OPTICALLY COUPLED ISOLATORS

ROHS COMPLIANT

APPROVALS

- UL recognised, File No. E91231
  Package Code " FF "

'X' SPECIFICATION APPROVALS

- VDE 0884 in 3 available lead form : -
  - STD
  - G form
  - SMD approved to CECC 00802
- Certified to EN60950 by
  Nemko - Certificate No. P01102465

DESCRIPTION

The TIL197, TIL198, TIL199 series of optically coupled isolators consist of infrared light emitting diodes and NPN silicon photo darlingtons in space efficient dual in line plastic packages. The standard parts are tested for a CTR of 500% minimum. Parts with the suffix A or B are tested for a CTR of 1000 and 1500% minimum respectively.

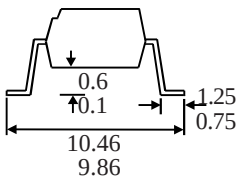
FEATURES

- Options :-
  10mm lead spread - add G after part no.
  Surface mount - add SM after part no.
  Tape&reel - add SMT&R after part no.
- High Current Transfer Ratio (500%min)
- High Isolation Voltage (5.3kV$_{RMS}$,7.5kV$_{PK}$)
- All electrical parameters 100% tested
- Custom electrical selections available

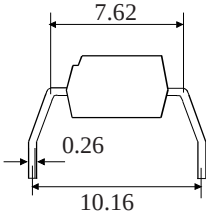
APPLICATIONS

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

OPTION SM
SURFACE MOUNT

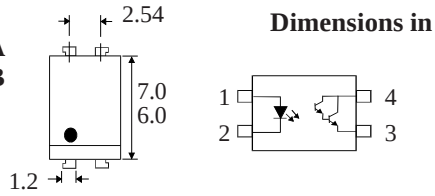


OPTION G

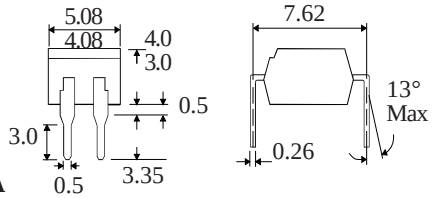


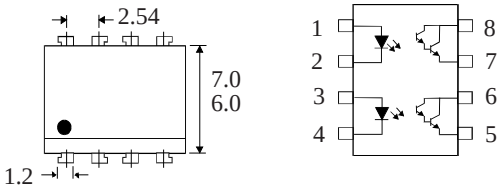
Dimensions in mm

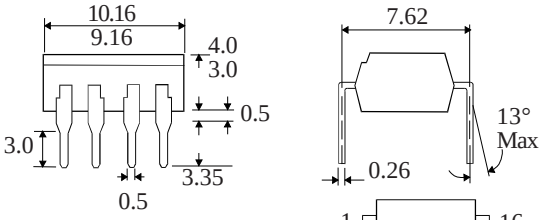
TIL197
TIL197A
TIL197B



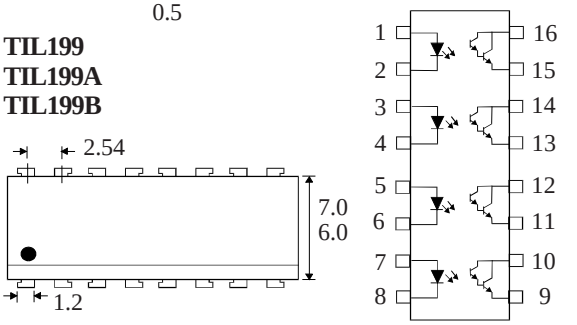
TIL198
TIL198A
TIL198B

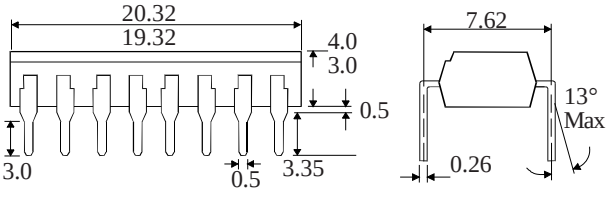






TIL199
TIL199A
TIL199B





ISOCOM COMPONENTS LTD
Unit 25B, Park View Road West,
Park View Industrial Estate, Brenda Road
Hartlepool, Cleveland, TS25 1YD
Tel: (01429) 863609 Fax :(01429) 863581

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	80mA
Power Dissipation	150mW

POWER DISSIPATION

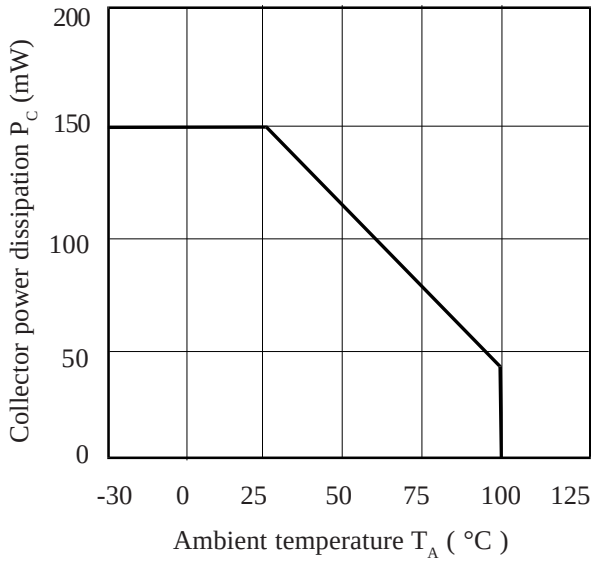
Total Power Dissipation	200mW
(derate linearly 2.67mW/°C above 25°C)	

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

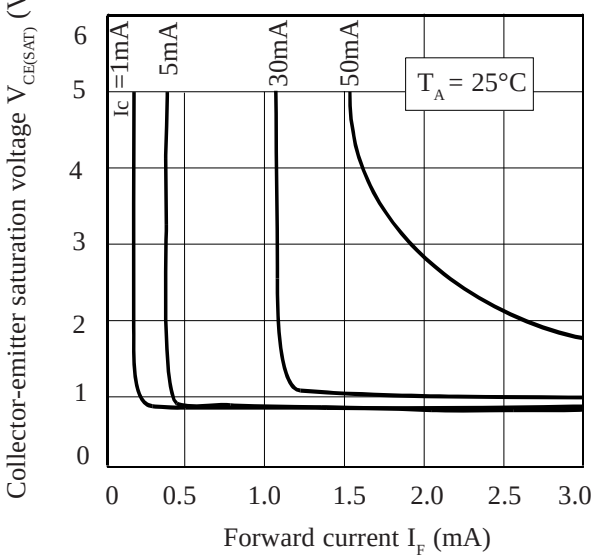
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.4	V	I_F = 20mA
	Reverse Current (I_R)			10	µA	V_R = 4V
Output	Collector-emitter Breakdown (BV_{CEO}) (Note 2)	35			V	I_C = 0.5mA
	Emitter-collector Breakdown (BV_{ECO})	6			V	I_E = 100µA
	Collector-emitter Dark Current (I_{CEO})			100	nA	V_{CE} = 10V
Coupled	Current Transfer Ratio (CTR) (Note 2)					
	TIL197, TIL198, TIL199	500		7500		2mA I_F, 1V V_{CE}
	TIL197A, TIL198A, TIL199A	1000		7500		2mA I_F, 1V V_{CE}
	TIL197B, TIL198B, TIL199B	1500		7500		2mA I_F, 1V V_{CE}
	Collector-emitter Saturation Voltage $V_{CE\ (SAT)}$		0.8	1.0	V	2mA I_F, 10mA 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		60		µs	V_{CE} = 2V,
	Output Fall Time tf		53		µs	I_C = 10mA, 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.

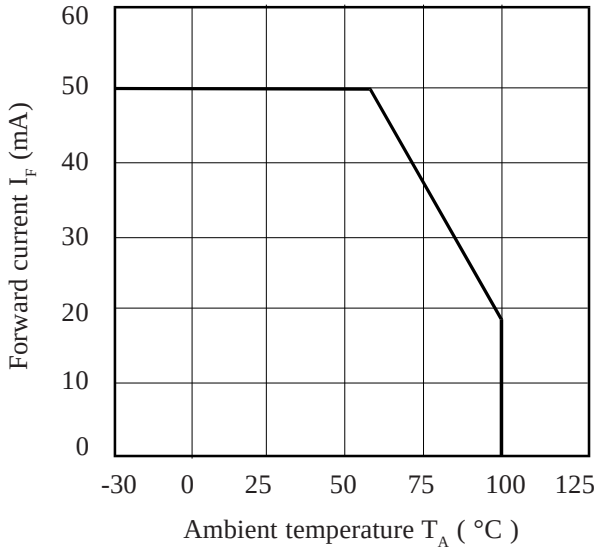
Collector Power Dissipation vs. Ambient Temperature



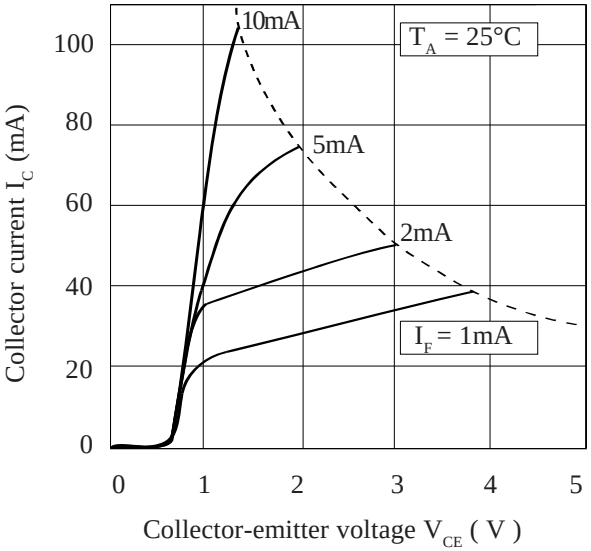
Collector-emitter Saturation Voltage vs. Forward Current



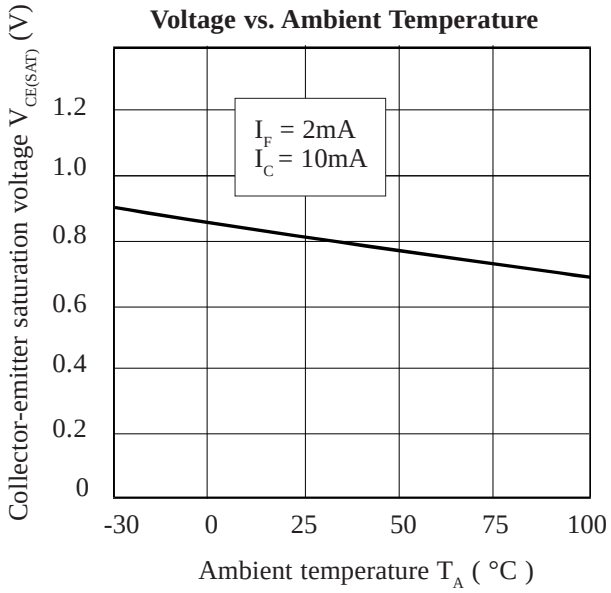
Forward Current vs. Ambient Temperature



Collector Current vs. Collector-emitter Voltage



Collector-emitter Saturation Voltage vs. Ambient Temperature



Relative Current Transfer Ratio vs. Ambient Temperature