

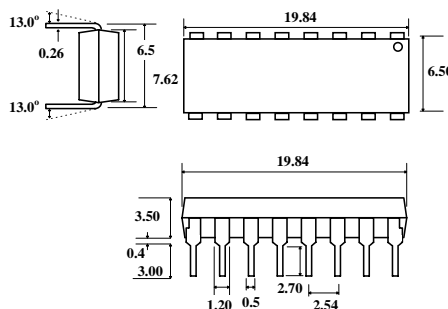
# TIL199

## High Reliability Optically Coupled Isolator

Isocom Ltd supplies high reliability devices for applications requiring an operating temperature range of -30°C to +100°C.

Devices supplied are approved to BS9400, and have completed rigorous testing. Various high reliability test options are offered.

As a manufacturer of high reliability optocouplers, the Isocom Ltd manufacturing plant in the North East of England has site approval to BS9000 (registration number 1294/M) and CECC20000 (registration number M/1084/CECC/UK) issued by the British Standards Institution.



Together with CECC, BS9000 is a preferred standard for use in European military projects. Consequently, Isocom Ltd's approved devices are listed in the CECC "MUAHAG" preferred products list.

The BS9000 approval is also recognised as meeting the equivalent criteria to those required by BS5750/IS09000/EN29000.

The Company's customers can be assured of our commitment to stringent quality, reliability and inspection standards, as demonstrated by our existing approvals. Other customer specific options can also be offered.

Features	Applications	
16 pin DIP	System test equipment	
High Radiance LED	Medical instruments	
Silicon phototransistor	Switch mode power supplies	
High Current transfer ratio at low diode current drive	Signal transmission between Circuits of different potential and impedance	
5000VDC Electrical Isolation		
Low input current		

Isocom Ltd reserves the right to change the details on this specification without notice. Please consult Isocom Ltd prior to use.

Isocom Ltd cannot accept liability for any errors or omissions.

For sales enquiries, or further information, please contact our sales office at:

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Or go to the Isocom Website @: [Http://www.isocom.uk.com](http://www.isocom.uk.com)

## Description

The TIL199 is a 4 channel device in a 16 package suitable for mounting in printed circuit board assemblies. The device incorporates a high radiance LED and silicon Phototransistor

## Absolute Maximum Ratings

Storage temperature ..... -55°C to +125°C  
Operating temperature ..... -30°C to +100°C  
Input-to-output isolation voltage .....5000Vrms

### **Input Diode**

Forward DC current 50mA  
Peak forward current 1A  
Reverse Voltage 6V  
Power Dissipation 70mW

### **Output Phototransistor**

Collector-emitter voltage 35V  
Emitter-collector voltage 6V  
Collector current 50mA  
Collector Power Dissipation 150mW

## Electrical Characteristics ( $T_A = -55$ to $125^\circ\text{C}$ U.O.S) \*All typical values at $T_A = 25^\circ\text{C}$

parameter	symbol	Test Conditions	min	*typ	max	Units
Forward voltage	$V_F$	$I_F = 20\text{ma}$		1.2	1.4	V
Peak Forward Voltage	$V_{FM}$	$I_{FM} = 0.5\text{A}$			3.5V	V
Reverse Current	$I_R$	$V_R = 4\text{V}$			10	$\mu\text{A}$
Collector Dark Current	$I_{CEO}$	$V_{CE} = 20\text{V}$			$10^{-7}$	A
Current Transfer Ratio	CTR	$I_F = 1\text{mA}, V_{CE} = 5\text{V}$	60		600	%
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_F = 20\text{mA}, I_C = 1\text{mA}$		0.1	0.3	V
Isolation Resistance	$R_{iso}$	DC500V	$5 \times 10^{10}$	$10^{11}$		$\Omega$
Floating Capacatance	$C_F$	$V = 0, f = 1\text{MHZ}$		0.6	1.0	pF
Cut-off Frequency	$f_c$	$V_{CE} = 5\text{V}, I_C = 2\text{mA},$ $RL = 100\Omega$		80		KHZ
Responce Time (Rise)	$t_r$	$V_{CE} = 5\text{V}, I_C = 2\text{mA},$ $RL = 100\Omega$		5	60	$\mu\text{S}$
Responce Time (Fall)	$t_f$			4	20	$\mu\text{S}$

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