

TIL601-604

SILICON PHOTOTRANSISTOR

Isocom Ltd supplies high reliability devices for applications requiring an operating temperature range of -55°C to +125°C (eg. military applications).

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/ISO9000/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

- Miniature, hermetically sealed, pill style, metal can package
- 48° acceptance angle
- Wide operating temperature range (-55°C to +125°C)
- Ideal for direct mounting to printed circuit boards
- Wide sensitivity ranges
- Mechanically and spectrally matched to TIL23 and TIL25 infrared emitting diodes

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:

Isocom Ltd, Hutton Close, Crowther Industrial Estate, District 3, Washington, NE38 0AH

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

Description

The TIL601-604 are each an NPN silicon phototransistor mounted in a hermetically sealed glass lensed metal can package. This package directly mounts in a double sided PC board.

Absolute Maximum Ratings

$T_A = 25^\circ\text{C}$ unless otherwise stated

Storage temperature	-65°C to +150°C	
Operating temperature	-55°C to +125°C	
Lead soldering temperature (10 secs)	260°C	

Output Detector

Collector-emitter voltage	30V	
Emitter-collector voltage	5V	
Power dissipation	125mW	(note 1)

Electrical Characteristics

$T_A = 25^\circ\text{C}$ unless otherwise stated

Parameter	Symbol	Test conditions	Min	Typ	Max	Units
Light Current	TIL601	$V_{CE} = 5V$ $H = 20 \text{ mW/cm}^2$ (note 2)	0.5			mA
	TIL602		2.0			mA
	TIL603		4.0			mA
	TIL604		7.0			mA
Collector Dark Current	I_{CEO}	$V_{CE} = 10V, H = 0$			100	nA
Collector-Emitter Breakdown Voltage		$I_C = 100\mu A$	30			V
Emitter-Collector Breakdown Voltage		$I_E = 100\mu A$	5.0			V
Collector-Emitter Saturation Voltage		$I_C = I_L / 8, H = 20 \text{ mW/cm}^2$			0.4	V
Angular Response (note 3)		$IF = \text{constant}$	\emptyset	48		deg
Rise and Fall Time		$V_{CC} = 5V, I_L = 1 \text{ mA}, R_L = 1000\Omega$	t_R, t_F	15		μs

Notes

1. Derate linearly 1.19 mA/°C above 25°C free-air temperature
2. The radiation source is a tungsten lamp operating at a colour temperature of 2870K
3. Angular response is defined as the total angle between the half sensitivity points

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