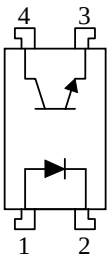
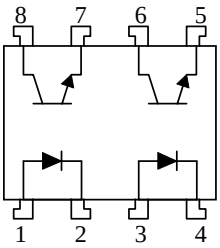
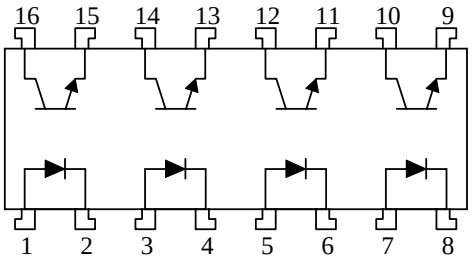
TRANSISTOR OPTOCOUPLERS

TLP521	TLP521-2	TLP521-4
		

DESCRIPTION

These devices are single, dual and quad optocouplers. Each channel is composed of a Gallium Arsenide infra-red emitting diode and a silicon phototransistor. Package styles for these devices include 4 pin, 8 pin, and 16 pin, with surface mount, butt cut and gull wing options available.

The same electrical die, assembly processes and materials are used for each channel of each device shown below. Therefore absolute maximum ratings, recommended operating conditions, electrical specifications and performance characteristics are identical for all units. Any exceptions, due to packaging variations and limitations, are as noted.

Isocom Ltd supplies a multitude of plastic optocouplers for all applications varying from standard transistor optos through to Darlingtons and Schmitt Trigger devices. It's massive family of optos vary in speed allowing maximum opportunity to engineers worldwide.

All devices are performance guaranteed between -20ºC and +80ºC and have completed rigorous testing. 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

- Performance guaranteed over 50% CTR MIN
- Manufactured and tested in BS9000 and CECC20000 approved premises
- High current transfer ratio
- 2500V RMS electrical isolation

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

ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-55°C to +100°C
Operating Temperature	-55°C to +80°C
Lead Soldering Temperature	260°C 1.6mm from case for 10S
Input-to-Output Isolation Voltage	⇧2500VRMS

Input Diode

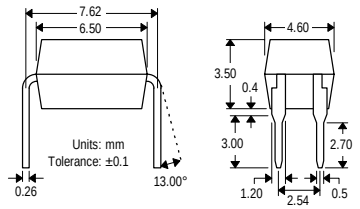
Forward DC Current	50mA	
Reverse DC Voltage	7V	
Peak forward Current	1.5mA	≤ 10µS duration
Power Dissipation	100mW	Derate linearly above 100°C at 1.6W/°C.

Output Transistor

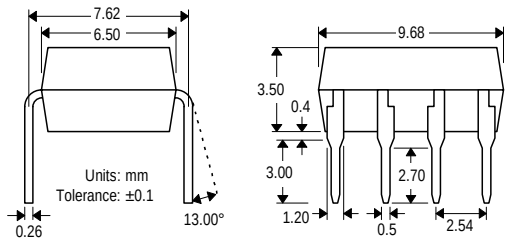
Collector-Emitter Voltage	50V	BV_{CEO}
Emitter-Collector Voltage	7V	BV_{ECO}
Collector-Base Voltage	70V	BV_{CBO} For
Collector Current	50mA	
Collector Current	100mA	t = 1mS
Power Dissipation	100mW	For . Derate linearly above 100°C at 1.4W/°C

PACKAGES

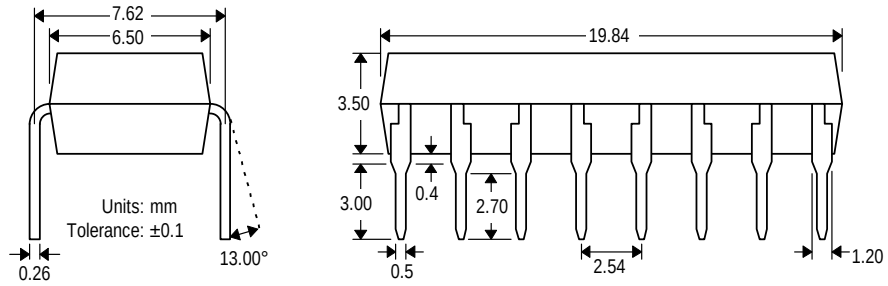
TLP521 - 4 Pin
Single Channel



TLP521-2 - 8 pin
Dual Channel



TLP521-4 - 16 Pin
Quad Channel



SMD and GULL WING are available for all the above.

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

T_A = 25°C U.O.S. (each channel where appropriate).

Input Diode Electrical Characteristics

Parameter	Symbol	Test Conditions	Device	Min	Typ	Max	Units
Forward Voltage	V_F	I_F = 10mA		0.7	1.18	1.4	V
		I_F = 10mA, T_A = 125°C		0.7	1.10	1.2	
		I_F = 10mA, T_A = -55°C		0.7	1.29	1.5	
Reverse Breakdown Voltage	V_R	I_R = 0.1mA		7	-	-	V
Reverse Current	I_R	V_R = 3V		-	-	100	µA
Capacitance	C_{IN}	V = 0, f = 1MHz		-	25	-	pF

Output Detector Electrical Characteristics

Collector-Emitter Breakdown Voltage (See note 1 below)	BV_{CEO}	I_C = 1mA		50	-	-	V
Collector-Base Breakdown Voltage (See note 1 below)	BV_{CBO}	I_B = 0.1mA		70	-	-	V
Emitter-Collector Breakdown Voltage	BV_{ECO}	I_E = 0.1mA		7	-	-	V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_B = 0.1mA		5	-	-	V
Collector-Emitter Leakage Current	I_{CEO}	V_{CE} = 20V, I_F = 0		-	6	100	nA
		V_{CE} = 20V, I_F = 0, T_A = 125°C		-	8	100	µA

Coupled Electrical Characteristics

DC Current Transfer Ratio (See note 3)	IC/IF	I_F = 10mA, V_{CE} = 5V		50	-	-	%
					-	-	
					-	-	
		I_F = 1mA, V_{CE} = 5V		40	-	-	
Collector-Emitter Saturation Voltage	V_{CE} (Sat)	I_F = 10mA, I_C = 2.5mA		-	-	0.3	V
Input to Output Capacitance	C_{IO}	V_{IO} = 0, f = 1mhz (See note 2 below)		-	2	5	pF
Input to Output Resistance	R_{IO}	V_{IO} = 500V (See note 2 below)		-	10^{11}	-	↓
Isolation Voltage	V_{IO}	(See note 2 below)		2500	-	-	Vrms
Delay Time	td	V_{CC} = 5V, I_C = 2mA		-	3.3	7	µS
Rise Time	tr	R_L = 100Ohms		-	5.0	8	µS
Storage Time	ts			-	0.4	0.8	µS
Fall Time	tf			-	4.8	8	µS
Turn -on Time	t_{on}	V_{CC} = 5V, I_f = 5mA		-	4	15	µS
Turn-off Time	t_{off}	R_L = 1KOhms		-	8	20	µS

Notes

1. BV_{CEO} and BV_{CBO} can be selected to suit customer specifications.
2. Measured between input when leads 1, 2 and 3 are shorted together, and output when leads 4, 5 and 6 are shorted together.
3. A higher CTR can be selected to suit customer specification as a standard part.

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