



# THE DATASHEET OF TLP621





TLP621, TLP621-2, TLP621-4  
TLP621X, TLP621-2X, TLP621-4X

## HIGH DENSITY MOUNTING PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS



### APPROVALS

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

### 'X' SPECIFICATION APPROVALS

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

### DESCRIPTION

The TLP621, TLP621-2 , TLP621-4 series of optically coupled isolators consist of infrared light emitting diodes and NPN silicon photo transistors in space efficient dual in line plastic packages.

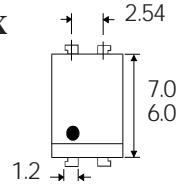
### FEATURES

- 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 ( 50% min)
- High Isolation Voltage (5.3kV<sub>RMS</sub>, 7.5kV<sub>PK</sub>)
- High BV<sub>CEO</sub> ( 55Vmin )
- All electrical parameters 100% tested
- Custom electrical selections available

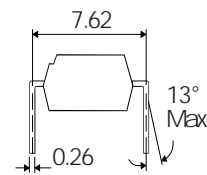
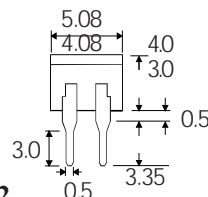
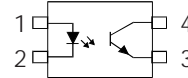
### APPLICATIONS

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

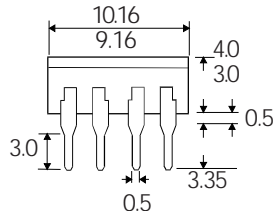
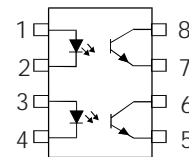
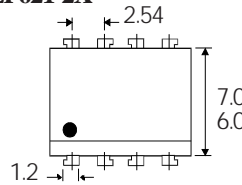
### TLP621 TLP621X



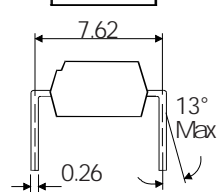
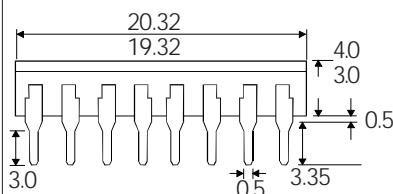
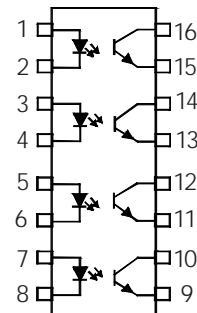
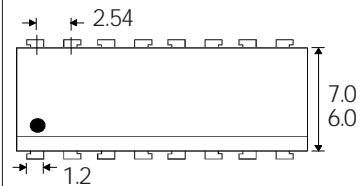
### Dimensions in mm



### TLP621-2 TLP621-2X



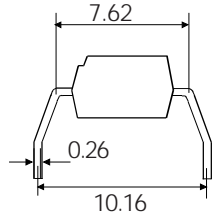
### TLP621-4 TLP621-4X



### OPTION SM SURFACE MOUNT



### OPTION G



### 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	5V
Power Dissipation	70mW

### OUTPUT TRANSISTOR

Collector-emitter Voltage $BV_{CEO}$	55V
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 ( $T_A = 25^\circ\text{C}$ Unless otherwise noted )

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage ( $V_F$ )	1.0	1.15	1.3	V	$I_F = 10\text{mA}$
	Reverse Current ( $I_R$ )			10	$\mu\text{A}$	$V_R = 5\text{V}$
Output	Collector-emitter Breakdown ( $BV_{CEO}$ ) (Note 2)	55			V	$I_C = 0.5\text{mA}$
	Emitter-collector Breakdown ( $BV_{ECO}$ )	6			V	$I_E = 100\mu\text{A}$
	Collector-emitter Dark Current ( $I_{CEO}$ )			100	nA	$V_{CE} = 24\text{V}$
Coupled	Current Transfer Ratio (CTR) (Note 2) TLP621, TLP621-2, TLP621-4	50		600	%	$5\text{mA } I_F, 5\text{V } V_{CE}$
	CTR selection available GB	100		600	%	$5\text{mA } I_F, 5\text{V } V_{CE}$
	BL	200		600	%	$5\text{mA } I_F, 5\text{V } V_{CE}$
	GR	100		300	%	$5\text{mA } I_F, 5\text{V } V_{CE}$
	Collector-emitter Saturation Voltage $V_{CE(SAT)}$			0.4	V	$8\text{mA } I_F, 2.4\text{mA } I_C$
	GB			0.4	V	$1\text{mA } I_F, 0.2\text{mA } I_C$
	Input to Output Isolation Voltage $V_{ISO}$	5300			$V_{RMS}$	See note 1
		7500			$V_{PK}$	See note 1
Input-output Isolation Resistance $R_{ISO}$	$5 \times 10^{10}$			$\Omega$	$V_{IO} = 500\text{V}$ (note 1)	
Response Time (Rise), tr		4		$\mu\text{s}$	$V_{CE} = 2\text{V},$	
Response Time (Fall) Time, tf		3		$\mu\text{s}$	$I_C = 2\text{mA}, R_L = 100\Omega$	

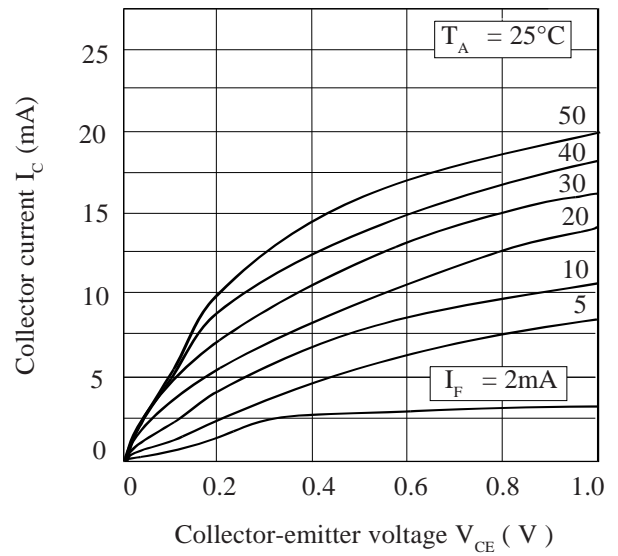
Note 1 Measured with input leads shorted together and output leads shorted together.

Note 2 Special Selections are available on request. Please consult the factory.

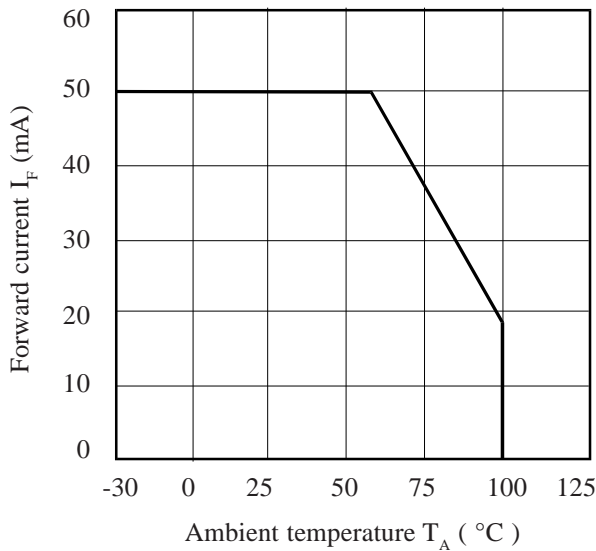
**Collector Power Dissipation vs. Ambient Temperature**



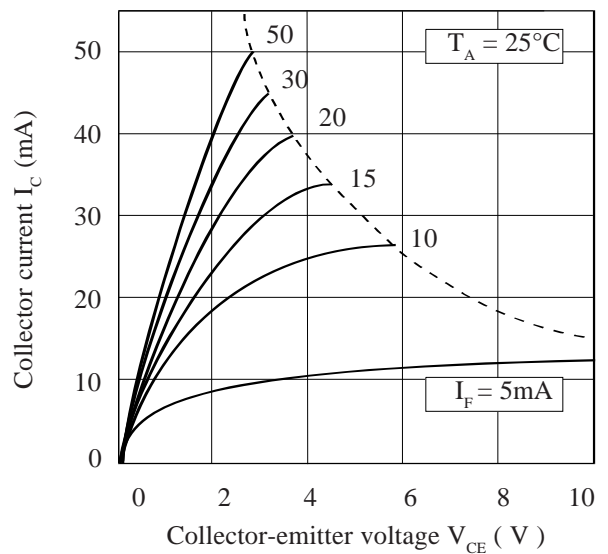
**Collector Current vs. Low Collector-emitter Voltage**



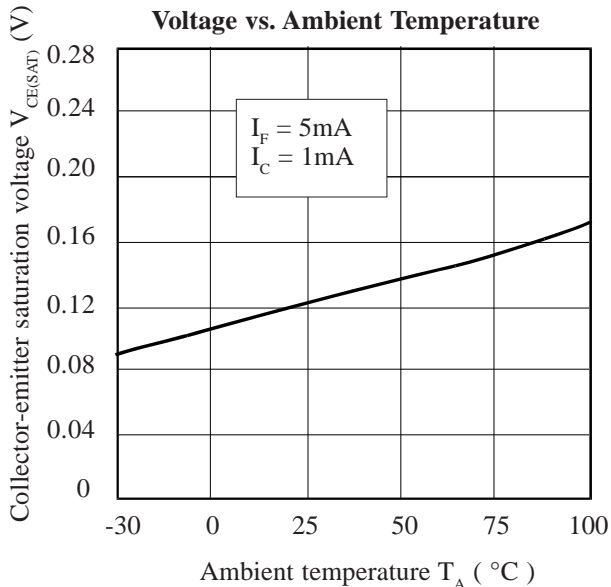
**Forward Current vs. Ambient Temperature**



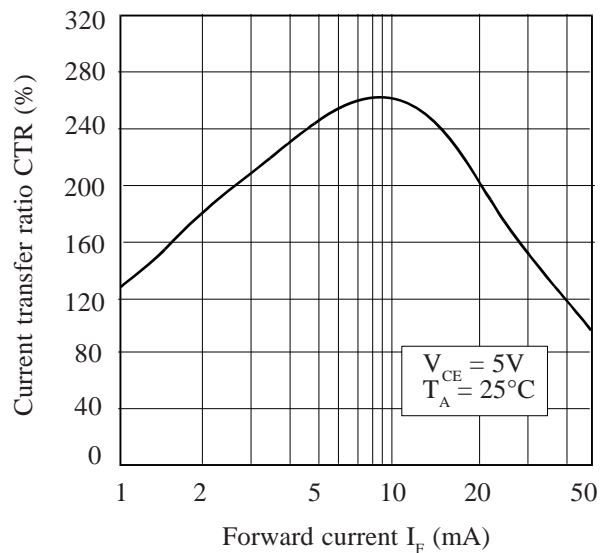
**Collector Current vs. Collector-emitter Voltage**



**Collector-emitter Saturation Voltage vs. Ambient Temperature**



**Current Transfer Ratio vs. Forward Current**



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