

DESCRIPTION

The TLP621-1BL-SW, TLP621-2BL-SW and TLP621-4BL-SW series of optically coupled isolators consist of infrared light emitting diodes and NPN silicon photo transistors in a space efficient Dual In Line Plastic Packages.

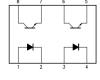
TLP621-1BL-SW



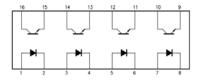
FEATURES

- AC Isolation Voltage 5300V_{RMS}
- Wide Operating Temperature Range
- Wide Storage Temperature Range -55°C to +125°C
- Lead Free and RoHS Compliant
- UL File E91231 Package Code "EE"

TLP621-2BL-SW



TLP621-4BL-SW



APPLICATIONS

- Computer Terminals
- Industrial System Controllers
- Measuring Instruments
- Signal Transmission between Systems of Different Potentials and Impedance

ORDER INFORMATION

- Add G after PN for 10mm lead spacing
- Add SM after PN for Surface Mount
- Add SMT&R after PN for Surface Mount Tape & Reel (Available for TLP621-1BL-SMT&R-SW and TLP621-2BL-SMT&R-SW)

ABSOLUTE MAXIMUM RATINGS

Input Diode

Forward Current	50mA
Reverse Voltage	5V
Power dissipation	70mW

Output Transistor

Collector to Emitter Voltage BV _{CEO}	55V
Emitter to Collector Voltage BV _{ECO}	6V
Collector Current	50mA
Power Dissipation	150mW

Total Package

Operating Temperature TLP621-1BL-SW TLP621-2BL-SW and

-30 to +100 °C

TLP621-2BL-SW and TLP621-4BL-SW

Storage Temperature -55 to +125 °C
Total Power Dissipation 200mW
Lead Soldering Temperature 260°C

(for 10s)

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ELECTRICAL CHARACTERISTICS (Ambient Temperature = 25°C unless otherwise specified)

INPUT

Parameter	Symbol	Test Condition	Min	Тур.	Max	Unit
Forward Voltage	V_{F}	$I_F = 10mA$	1.0	1.15	1.3	V
Reverse Voltage	V_R	$I_R = 10 \mu A$	5.0			V
Reverse Leakage	I_R	$V_R = 5V$			10	μΑ
Terminal Capacitance	C_{t}	V = 0V, $f = 1KHz$		30	250	pF

OUTPUT

Parameter	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector—Emitter breakdown Voltage	$\mathrm{BV}_{\mathrm{CEO}}$	$I_C = 0.5 \text{mA}, I_F = 0 \text{mA}$	55			V
Emitter—Collector breakdown Voltage	$\mathrm{BV}_{\mathrm{ECO}}$	$I_E = 100 \mu A, I_F = 0 mA$	6			V
Collector-Emitter Dark Current	I_{CEO}	$V_{CE} = 24V$, $I_F = 0mA$			100	nA

COUPLED

Parameter	Symbol	Test Condition	Min	Тур.	Max	Unit
Current transfer ratio	CTR	$I_F = 5 \text{mA}, V_{CE} = 5 \text{V}$	300		600	%
Collector—Emitter Saturation Voltage	$V_{\text{CE(sat)}}$	$I_F = 8mA, I_C = 2.4mA$			0.4	V
Input to Output Isolation Voltage	$V_{\rm ISO}$	See note 1	5300			V_{RMS}
Input to Output Isolation Resistance	R _{ISO}	V _{IO} = 500V See note 1	5x10 ¹⁰			Ω
Output Rise Time	$t_{\rm r}$	$V_{CE} = 2V$, $I_{C} = 2mA$, $R_{L} = 100\Omega$		4	18	μs
Output Fall Time	t_{f}	$V_{CE} = 2V$, $Ic = 2mA$, $R_L = 100\Omega$		3	18	μs

Note 1: Measure with input leads shorted together and output leads shorted together.



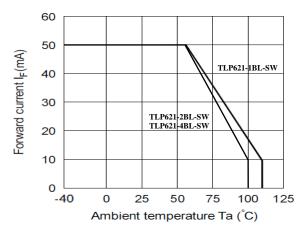


Fig 1 Forward Current vs TA

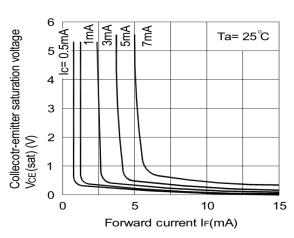


Fig 3 Collector-emitter Saturation Voltage vs Forward Current

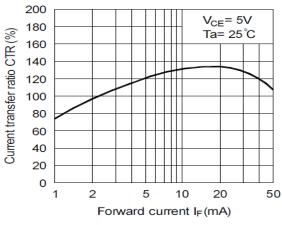


Fig 5 Current Transfer Ratio vs Forward Current

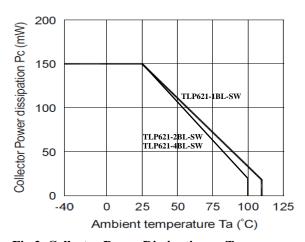


Fig 2 Collector Power Dissipation vs T_A

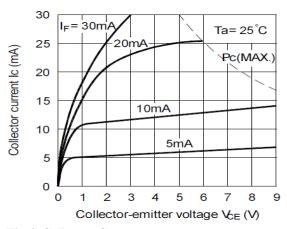


Fig 4 Collector Current vs Collector-emitter Voltage

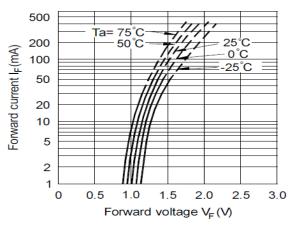


Fig 6 Forward Current vs Forward Voltage



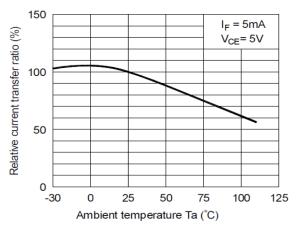


Fig 7 Relative CTR vs T_A

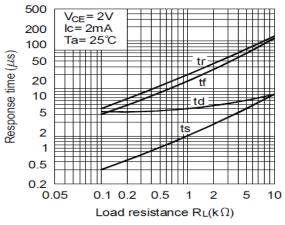


Fig 9 Response Time vs Load Resistance

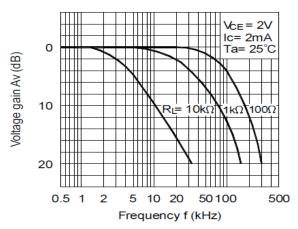
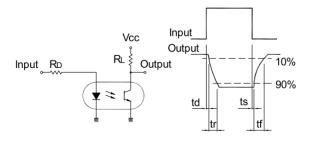


Fig 8 Frequency Response



Response Time Test Circuit

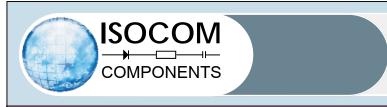


ORDER INFORMATION

TLP621-1BL-SW					
After PN	PN	Description	Packing quantity		
None	TLP621-1BL-SW	Standard DIP4	100 pcs per tube		
G	TLP621-1BLG-SW	10mm Lead Spacing	100 pcs per tube		
SM	TLP621-1BLSM-SW	Surface Mount	100 pcs per tube		
SMT&R	TLP621-1BLSMT&R-SW	Surface Mount Tape & Reel	1000 pcs per reel		

	TLP621-2BL-SW					
After PN	PN	Description	Packing quantity			
None	TLP621-2BL-SW	Standard DIP8	50 pcs per tube			
G	TLP621-2BLG-SW	10mm Lead Spacing	50 pcs per tube			
SM	TLP621-2BLSM-SW	Surface Mount	50 pcs per tube			
SMT&R	TLP621-2BLSMT&R-SW	Surface Mount Tape & Reel	1000 pcs per reel			

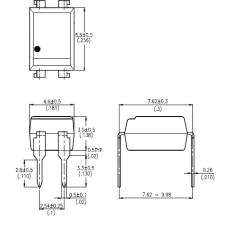
TLP621-4BL-SW					
After PN	PN	Description	Packing quantity		
None	TLP621-4BL-SW	Standard DIP16	25 pcs per tube		
G	TLP621-4BLG-SW	10mm Lead Spacing	25 pcs per tube		
SM	TLP621-4BLSM-SW	Surface Mount	25 pcs per tube		



PACKAGE DIMENSIONS (mm)

DIP

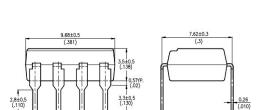
TLP621-1BL-SW



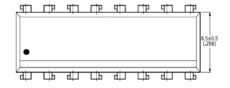
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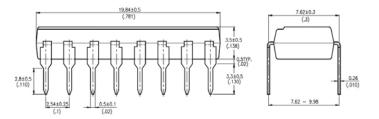
L'b d;1

TLP621-2BL-SW



TLP621-4BL-SW



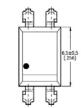


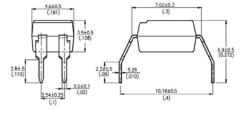


PACKAGE DIMENSIONS (mm)

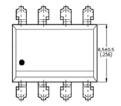
G Form

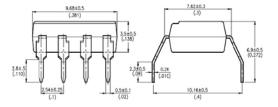
TLP621-1BLG-SW



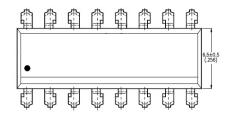


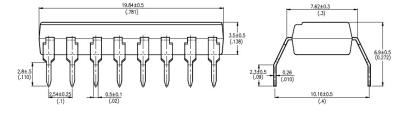
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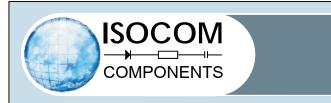




TLP621-4BLG-SW



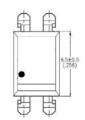


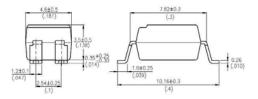


PACKAGE DIMENSIONS (mm)

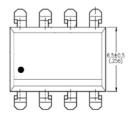
SMD

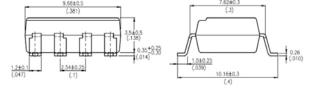
TLP621-1BLSM-SW



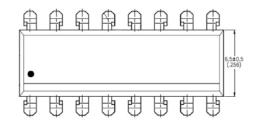


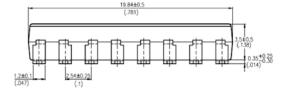
TLP621-2BLSM-SW

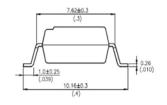




TLP621-4BLSM-SW



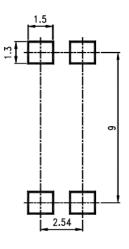




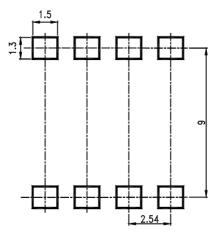


RECOMMENDED PAD LAYOUT FOR SMD (mm)

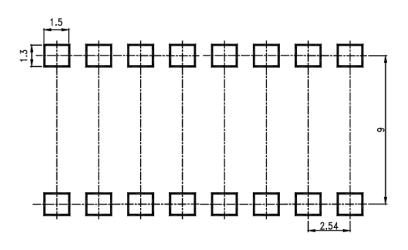


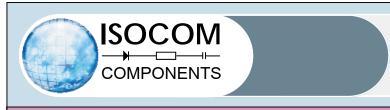


TLP621-2BLSM-SW



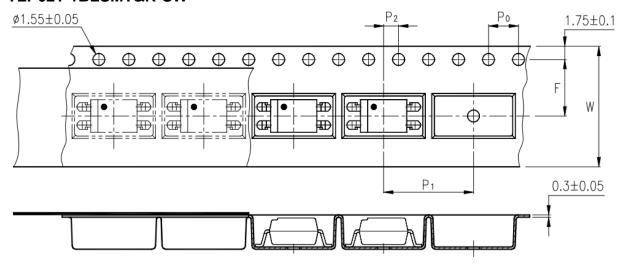
TLP621-4BLSM-SW



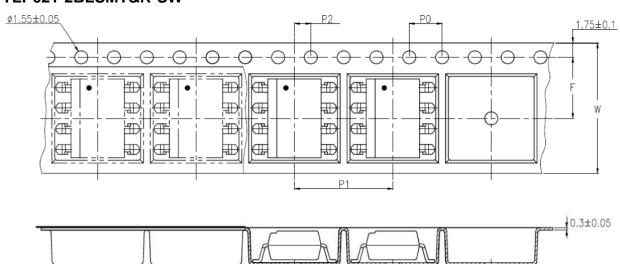


TAPE AND REEL PACKAGING

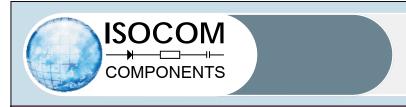
TLP621-1BLSMT&R-SW



TLP621-2BLSMT&R-SW

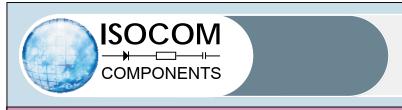


Description	Symbol	Dimensions in mm (inches)
Tape wide	W	$16 \pm 0.3 (.63)$
Pitch of sprocket holes	P ₀	4 ± 0.1 (.15)
Distance of compartment	F	$7.5 \pm 0.1 (.295)$
	P ₂	$2 \pm 0.1 (.079)$
Distance of compartment to compartment	P1	12 ± 0.1 (.472)



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