



TLP621-1BL-SW, TLP621-2BL-SW, TLP621-4BL-SW (DRAFT)

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.

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"

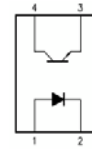
APPLICATIONS

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

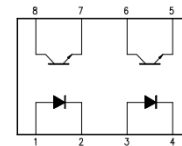
ORDER INFORMATION

- 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)

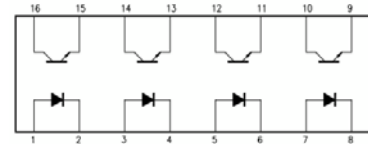
TLP621-1BL-SW



TLP621-2BL-SW



TLP621-4BL-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	-30 to +100 °C
TLP621-2BL-SW and	
TLP621-4BL-SW	

Storage Temperature	-55 to +125 °C
Total Power Dissipation	200mW
Lead Soldering Temperature (for 10s)	260°C

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TLP621-1BL-SW, TLP621-2BL-SW, TLP621-4BL-SW (DRAFT)

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

INPUT

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward Voltage	V_F	$I_F = 10\text{mA}$	1.0	1.15	1.3	V
Reverse Voltage	V_R	$I_R = 10\mu\text{A}$	5.0			V
Reverse Leakage	I_R	$V_R = 5\text{V}$			10	μA
Terminal Capacitance	C_t	$V = 0\text{V}, f = 1\text{KHz}$		30	250	pF

OUTPUT

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

COUPLED

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Current transfer ratio	CTR	$I_F = 5\text{mA}, V_{CE} = 5\text{V}$	300		600	%
Collector—Emitter Saturation Voltage	$V_{CE(\text{sat})}$	$I_F = 8\text{mA}, I_C = 2.4\text{mA}$			0.4	V
Input to Output Isolation Voltage	V_{ISO}	See note 1	5300			V_{RMS}
Input to Output Isolation Resistance	R_{ISO}	$V_{IO} = 500\text{V}$ See note 1	5×10^{10}			Ω
Output Rise Time	t_r	$V_{CE} = 2\text{V}, I_c = 2\text{mA}, R_L = 100\Omega$		4	18	μs
Output Fall Time	t_f	$V_{CE} = 2\text{V}, I_c = 2\text{mA}, R_L = 100\Omega$		3	18	μs

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



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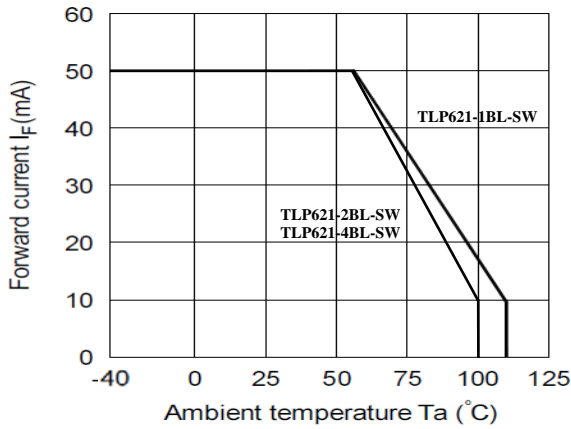


Fig 1 Forward Current vs T_A

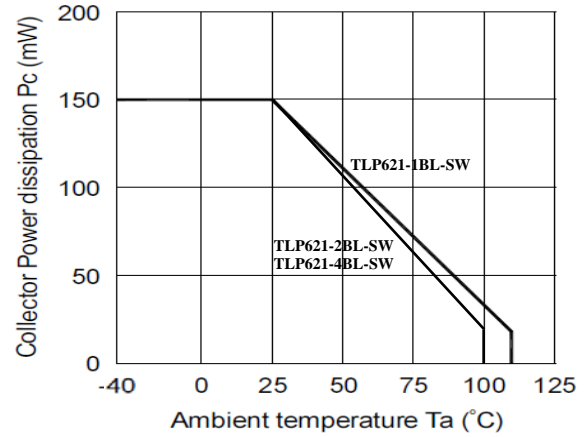


Fig 2 Collector Power Dissipation vs T_A

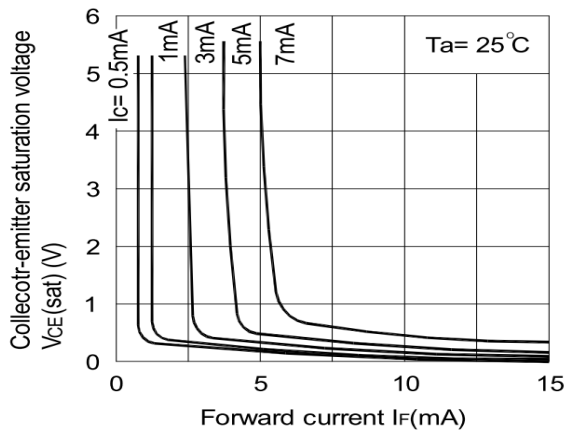


Fig 3 Collector-emitter Saturation Voltage vs Forward Current

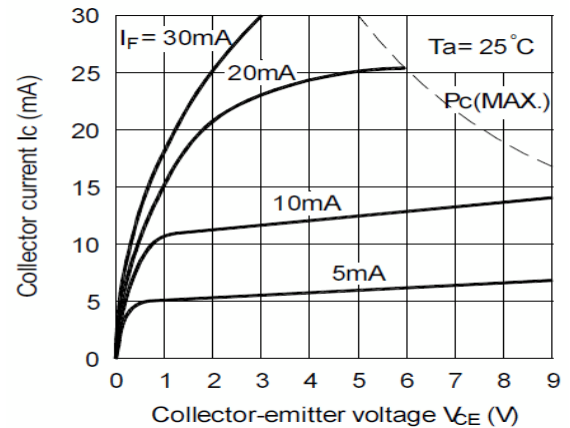


Fig 4 Collector Current vs Collector-emitter Voltage

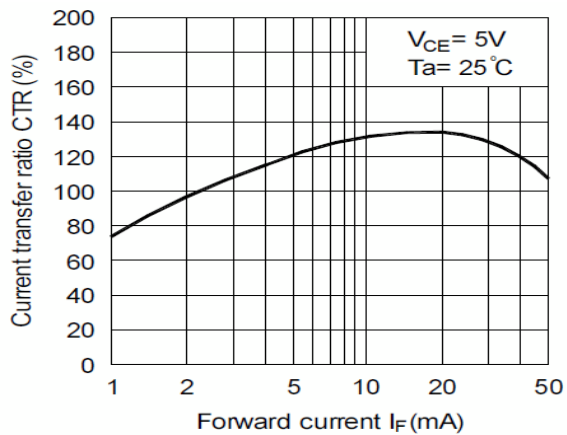


Fig 5 Current Transfer Ratio vs Forward Current

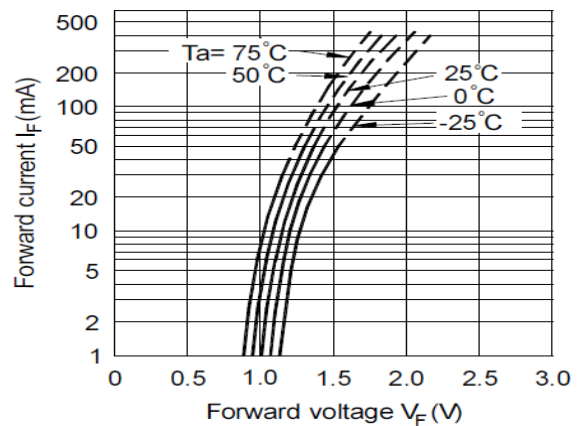


Fig 6 Forward Current vs Forward Voltage



TLP621-1BL-SW, TLP621-2BL-SW, TLP621-4BL-SW (DRAFT)

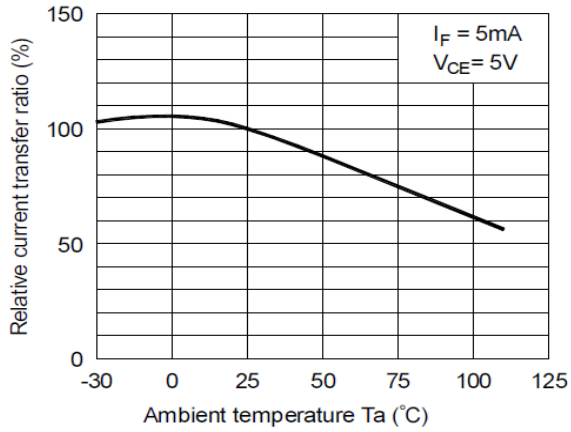


Fig 7 Relative CTR vs T_A

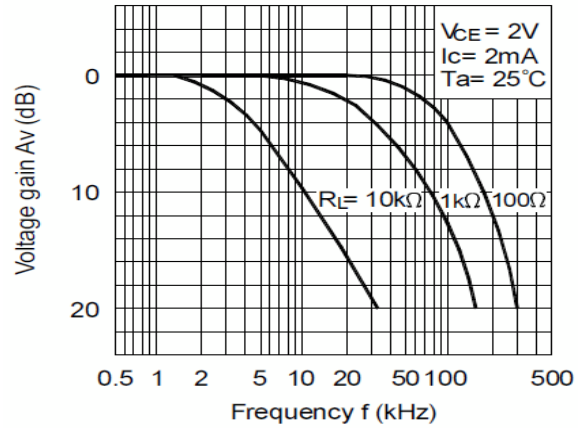


Fig 8 Frequency Response

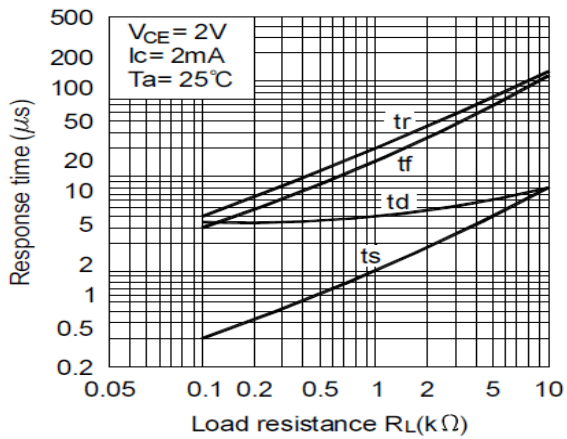
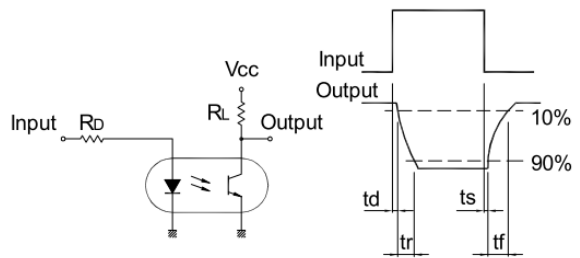


Fig 9 Response Time vs Load Resistance



Response Time Test Circuit



TLP621-1BL-SW, TLP621-2BL-SW, TLP621-4BL-SW (DRAFT)

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

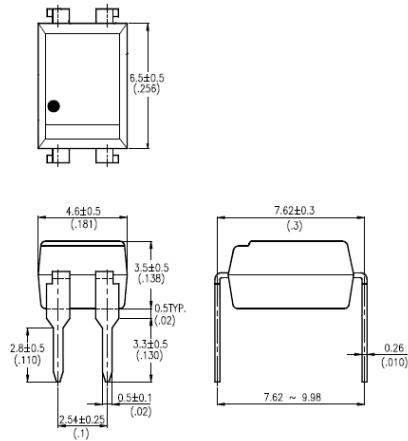


TLP621-1BL-SW, TLP621-2BL-SW, TLP621-4BL-SW (DRAFT)

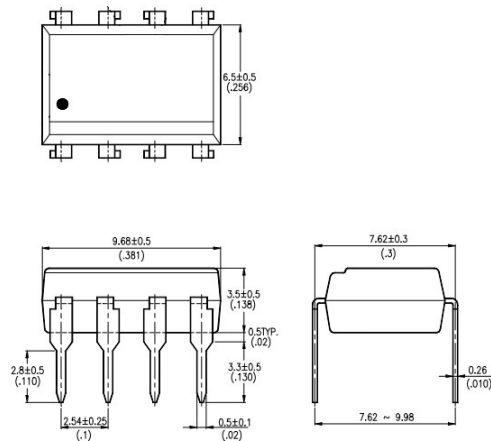
PACKAGE DIMENSIONS (mm)

DIP

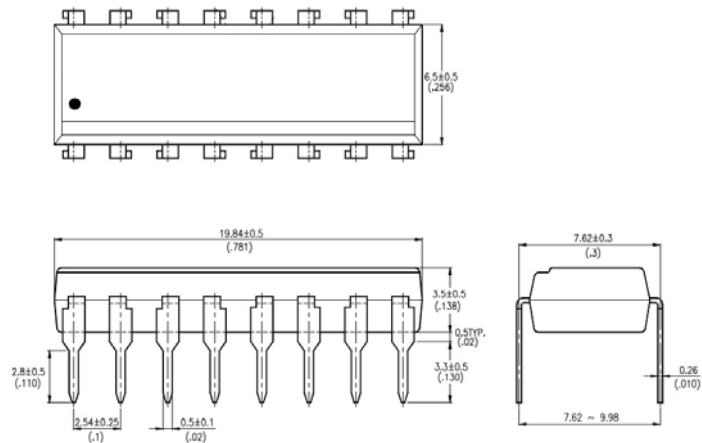
TLP621-1BL-SW



TLP621-2BL-SW



TLP621-4BL-SW



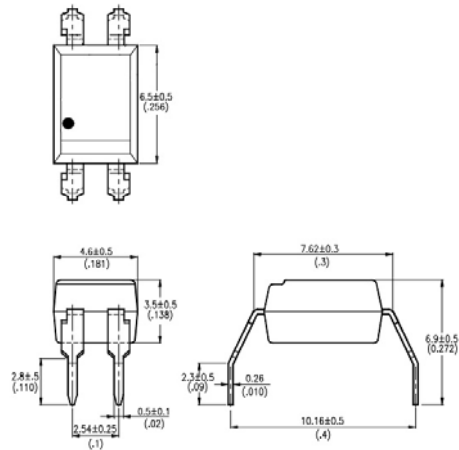


TLP621-1BL-SW, TLP621-2BL-SW, TLP621-4BL-SW (DRAFT)

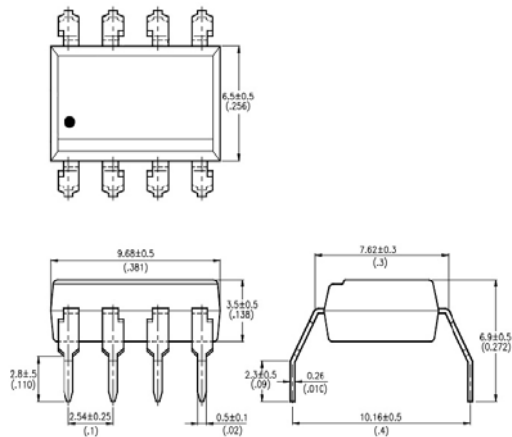
PACKAGE DIMENSIONS (mm)

G Form

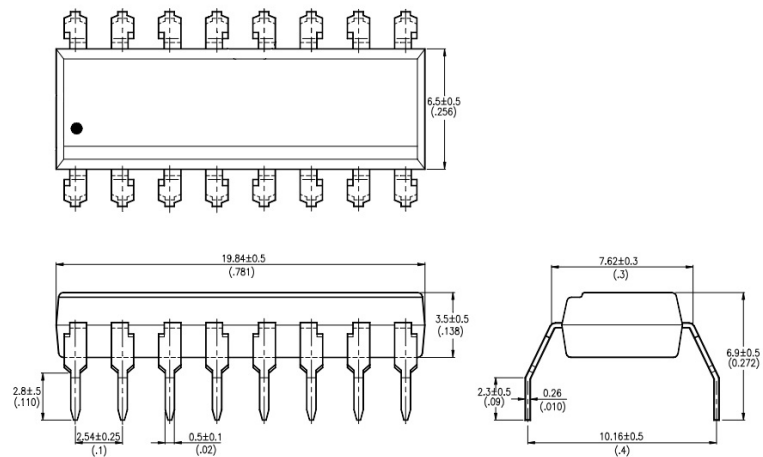
TLP621-1BLG-SW



TLP621-2BLG-SW



TLP621-4BLG-SW



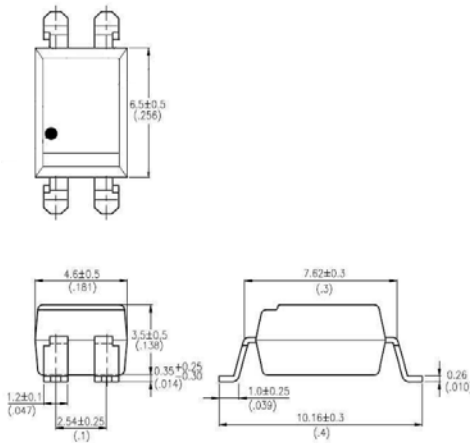


TLP621-1BL-SW, TLP621-2BL-SW, TLP621-4BL-SW (DRAFT)

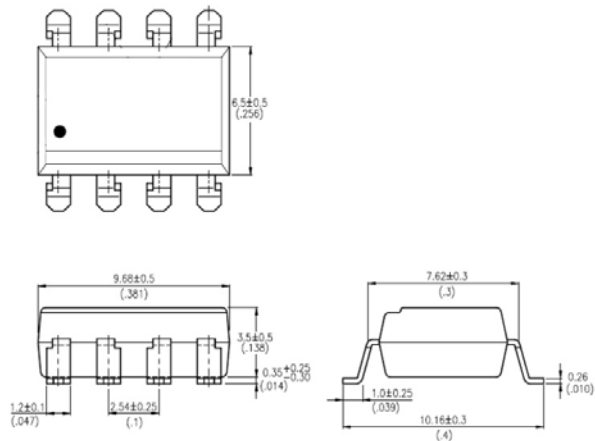
PACKAGE DIMENSIONS (mm)

SMD

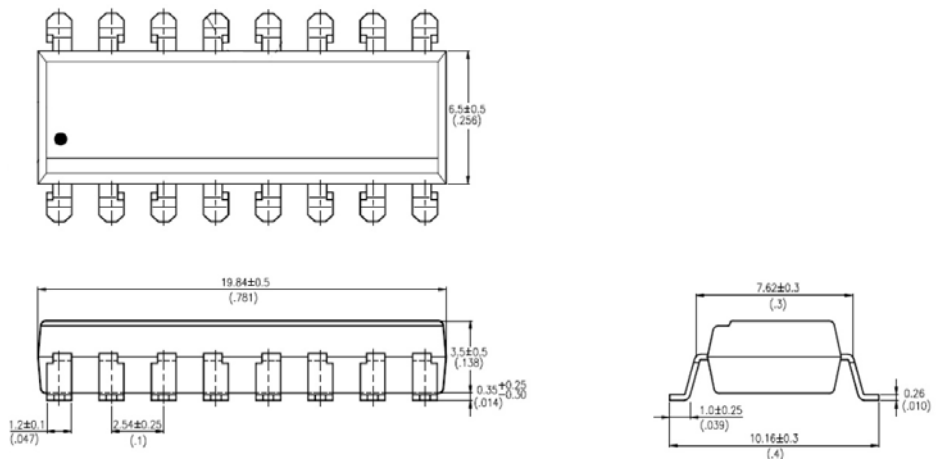
TLP621-1BLSM-SW



TLP621-2BLSM-SW



TLP621-4BLSM-SW

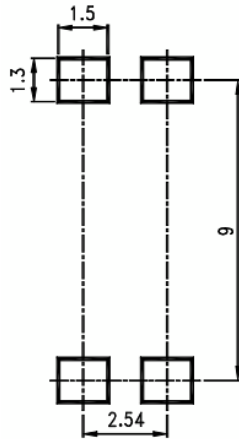




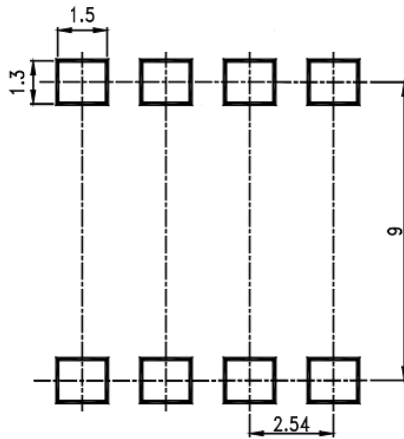
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RECOMMENDED PAD LAYOUT FOR SMD (mm)

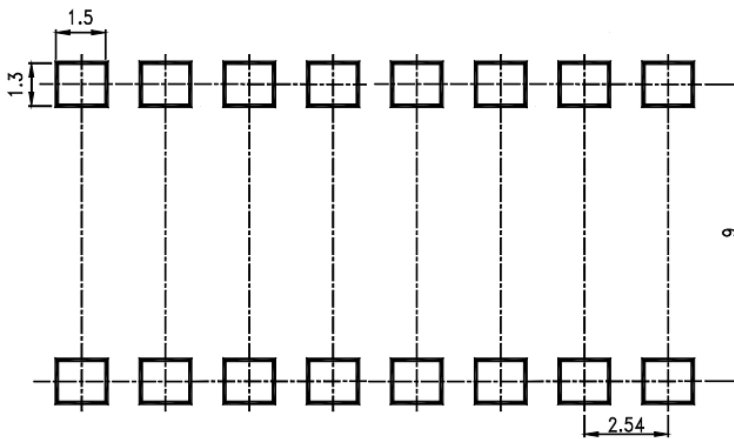
TLP621-1BLSM-SW



TLP621-2BLSM-SW



TLP621-4BLSM-SW

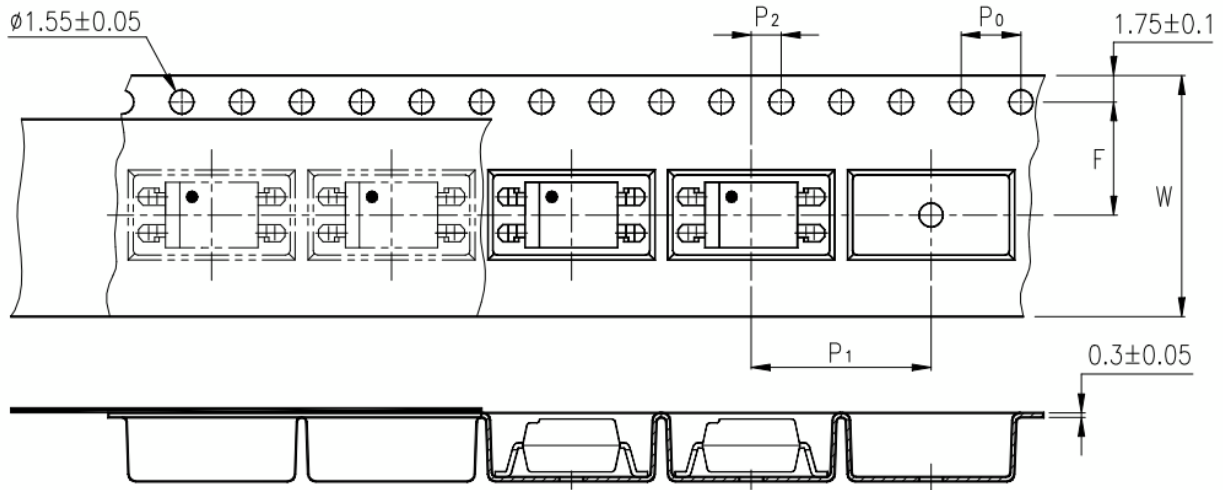




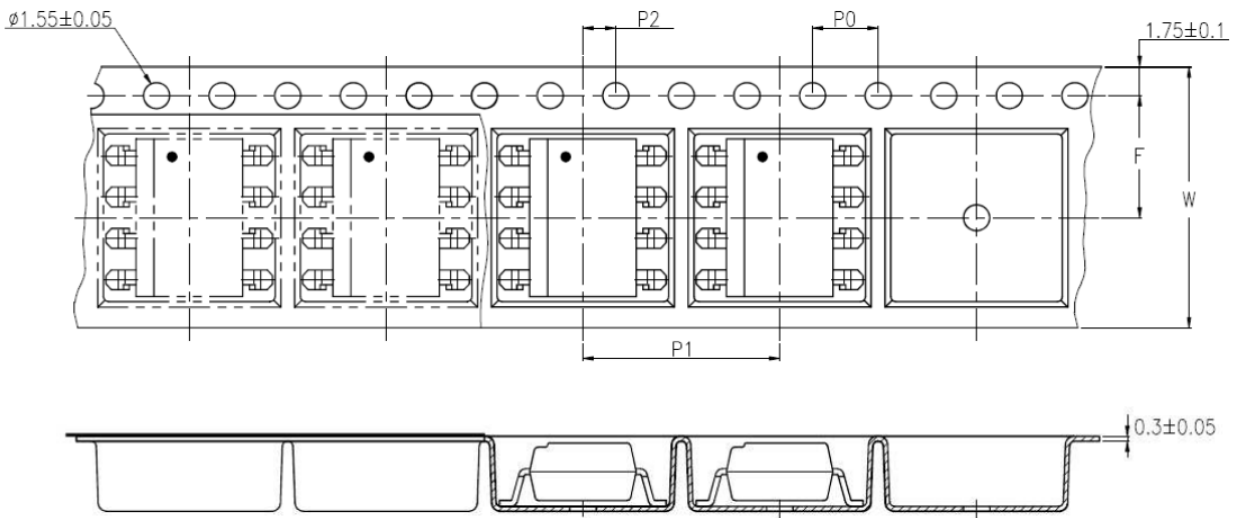
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TAPE AND REEL PACKAGING

TLP621-1BLSMT&R-SW



TLP621-2BLSMT&R-SW



Description	Symbol	Dimensions in mm (inches)
Tape wide	W	16 ± 0.3 (.63)
Pitch of sprocket holes	P_0	4 ± 0.1 (.15)
Distance of compartment	F	7.5 ± 0.1 (.295)
Distance of compartment to compartment	P_1	2 ± 0.1 (.079)
Distance of compartment to compartment	P_1	12 ± 0.1 (.472)

