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

INPUT

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

OUTPUT

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector—Emitter breakdown Voltage	BV_{CEO}	I_C = 0.5mA, I_F = 0mA	80			V
Emitter—Collector breakdown Voltage	BV_{ECO}	I_E = 100µA, I_F = 0mA	6			V
Collector-Emitter Dark Current	I_{CEO}	V_{CE} = 48V, I_F = 0mA			100	nA

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

COUPLED

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Current Transfer Ratio	CTR	I_F = 5mA, V_{CE} = 5V	50		600	%
		Optional CTR Grades				
		BL	200		600	
		GB	100		600	
		GB (I_F = 1mA, V_{CE} = 0.4V)	30			
Collector—Emitter Saturation Voltage	$V_{CE(sat)}$	I_F = 8mA, I_C = 2.4mA			0.4	V
		GB (I_F = 1mA, I_C = 0.2mA)			0.4	
Output Rise Time	t_r	V_{CE} = 10V, Ic = 2mA, R_L = 100Ω		2		µs
Output Fall Time	t_f			3		
Turn-on Time	t_{on}			3		
Turn-off Time	t_{off}			3		

ISOLATION

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Input to Output Isolation Voltage	V_{ISO}	AC 1 minute, RH = 40 to 60% Note 1	5300			V_{RMS}
Input to Output Isolation Resistance	R_{ISO}	V_{IO}= 500V Note 1	$5x10^{10}$			Ω

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

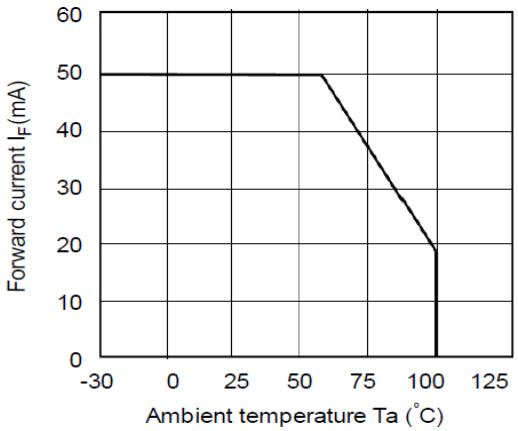


Fig 1 Forward Current vs T_A

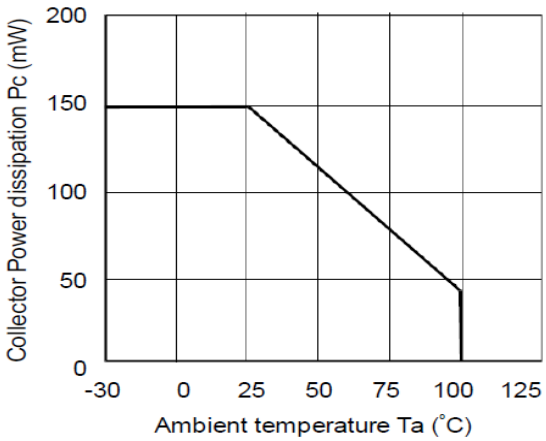


Fig 2 Collector Power Dissipation vs T_A

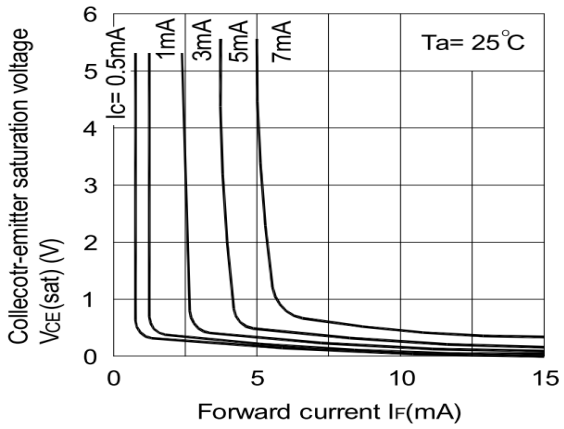


Fig 3 Collector-emitter Saturation Voltage vs Forward Current

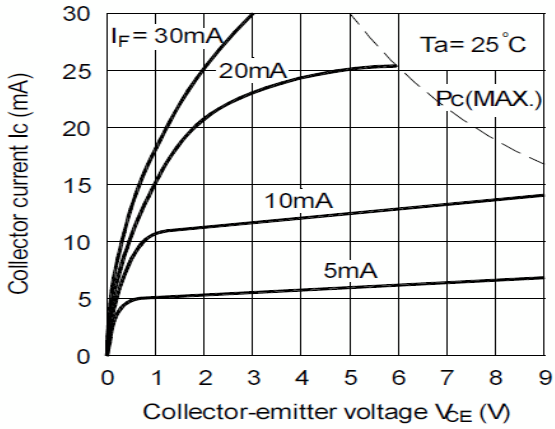


Fig 4 Collector Current vs Collector-emitter Voltage

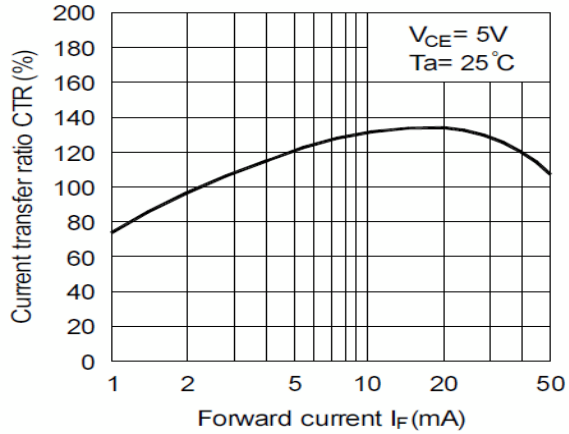


Fig 5 Current Transfer Ratio vs Forward Current

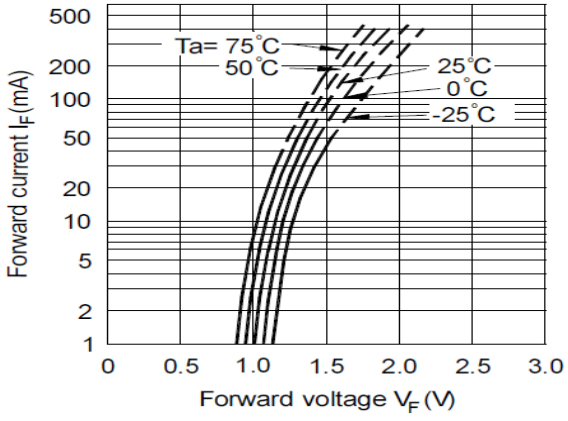


Fig 6 Forward Current vs Forward Voltage

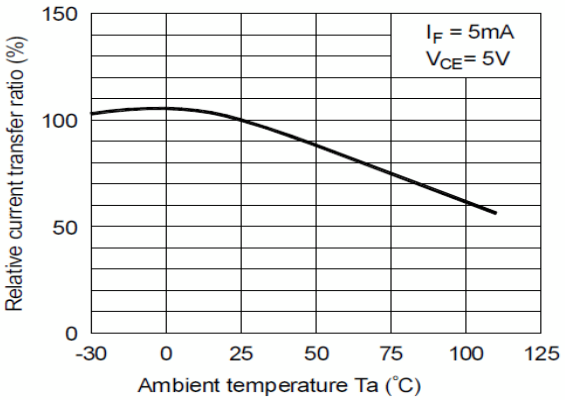


Fig 7 Relative CTR vs T_A

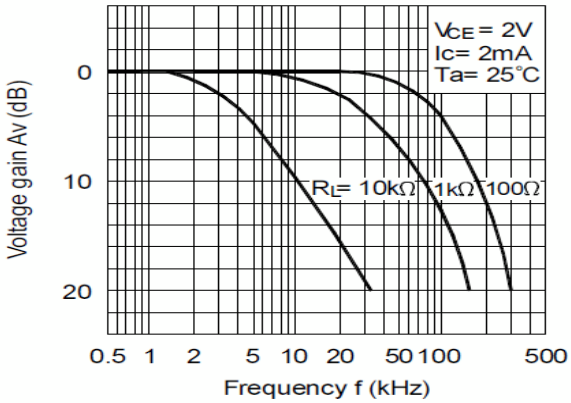


Fig 8 Frequency Response

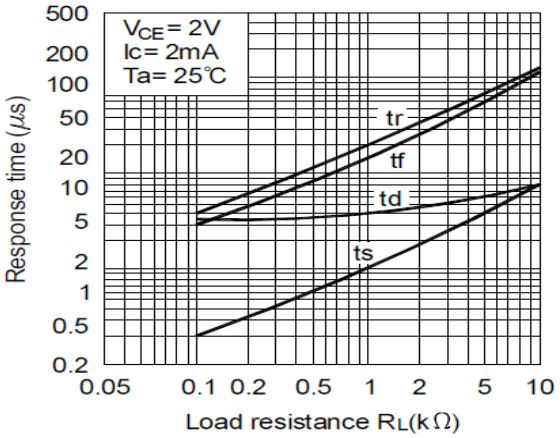
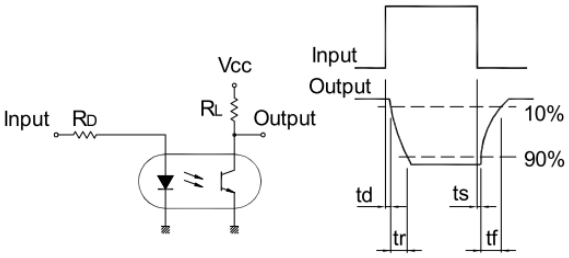


Fig 9 Response Time vs Load Resistance



Response Time Test Circuit

ORDER INFORMATION

TLP321 (UL Approval)			
After PN	**PN**	**Description**	**Packing quantity**
None	TLP321, TLP321BL, TLP321GB	Standard DIP4	100 pcs per tube
G	TLP321G, TLP321BLG, TLP321GBG	10mm Lead Spacing	100 pcs per tube
SM	TLP321SM, TLP321BLSM, TLP321GBSM	Surface Mount	100 pcs per tube
SMT&R	TLP321SMT&R, TLP321BLSMT&R, TLP321GBSMT&R	Surface Mount Tape & Reel	1000 pcs per reel

TLP321-2 (UL Approval)			
After PN	**PN**	**Description**	**Packing quantity**
None	TLP321-2, TLP321-2BL, TLP321-2GB	Standard DIP8	50 pcs per tube
G	TLP321-2G, TLP321-2BLG, TLP321-2GBG	10mm Lead Spacing	50 pcs per tube
SM	TLP321-2SM, TLP321-2BLSM, TLP321-2GBSM	Surface Mount	50 pcs per tube
SMT&R	TLP321-2SMT&R, TLP321-2BLSMT&R, TLP321-2GBSMT&R	Surface Mount Tape & Reel	1000 pcs per reel

TLP321-4 (UL Approval)			
After PN	**PN**	**Description**	**Packing quantity**
None	TLP321-4, TLP321-4BL, TLP321-4GB	Standard DIP16	25 pcs per tube
G	TLP321-4G, TLP321-4BLG, TLP321-4GBG	10mm Lead Spacing	25 pcs per tube
SM	TLP321-4SM, TLP321-4BLSM, TLP321-4GBSM	Surface Mount	25 pcs per tube

ORDER INFORMATION

TLP321X (UL and VDE Approvals)			
After PN	**PN**	**Description**	**Packing quantity**
None	TLP321X, TLP321XBL, TLP321XGB	Standard DIP4	100 pcs per tube
G	TLP321XG, TLP321XBLG, TLP321XGBG	10mm Lead Spacing	100 pcs per tube
SM	TLP321XSM, TLP321XBLSM, TLP321XGBSM	Surface Mount	100 pcs per tube
SMT&R	TLP321XSMT&R, TLP321XBLSMT&R, TLP321XGBXSMT&R	Surface Mount Tape & Reel	1000 pcs per reel

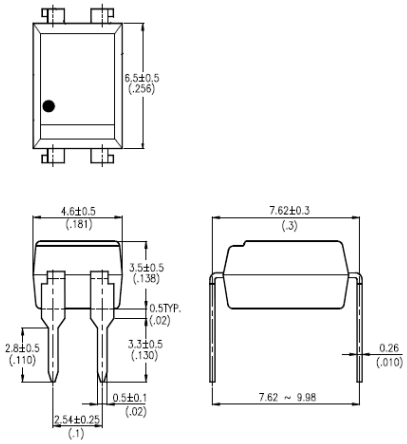
TLP321-2X (UL and VDE Approvals)			
After PN	**PN**	**Description**	**Packing quantity**
None	TLP321-2X, TLP321-2XBL, TLP321-2XGB	Standard DIP8	50 pcs per tube
G	TLP321-2XG, TLP321-2XBLG, TLP321-2XGBG	10mm Lead Spacing	50 pcs per tube
SM	TLP321-2XSM, TLP321-2XBLSM, TLP321-2XGBSM	Surface Mount	50 pcs per tube
SMT&R	TLP321-2XSMT&R, TLP321-2XBLSMT&R, TLP321-2XGBSMT&R	Surface Mount Tape & Reel	1000 pcs per reel

TLP321-4X (UL and VDE Approvals)			
After PN	**PN**	**Description**	**Packing quantity**
None	TLP321-4X, TLP321-4XBL, TLP321-4XGB	Standard DIP16	25 pcs per tube
G	TLP321-4XG, TLP321-4XBLG, TLP321-4XGBG	10mm Lead Spacing	25 pcs per tube
SM	TLP321-4XSM, TLP321-4XBLSM, TLP321-4XGBSM	Surface Mount	25 pcs per tube

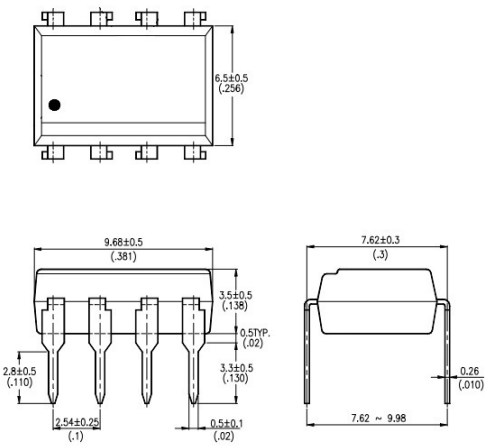
PACKAGE DIMENSIONS in mm (inch)

DIP

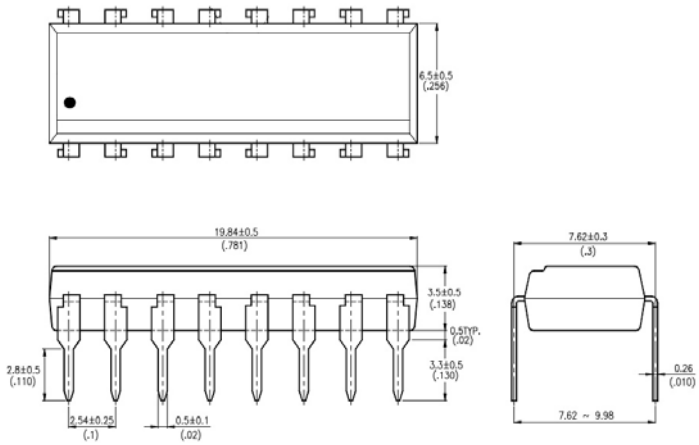
TLP321



TLP321-2



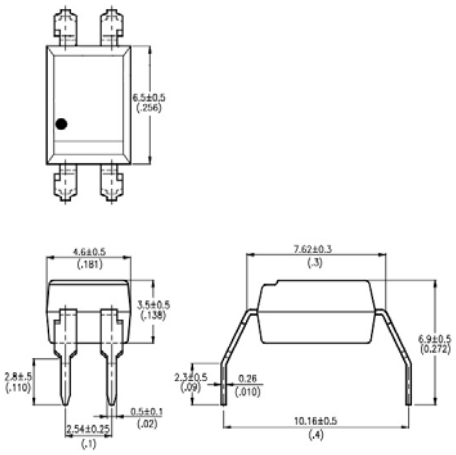
TLP321-4



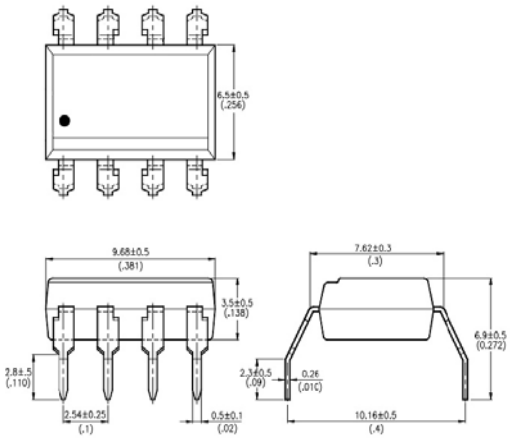
PACKAGE DIMENSIONS in mm (inch)

G Form

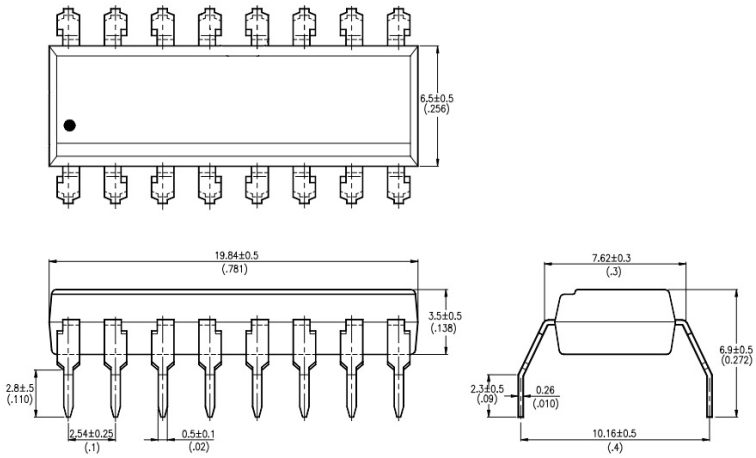
TLP321G



TLP321-2G



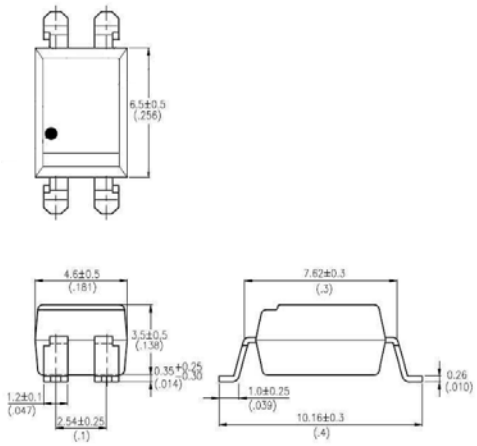
TLP321-4G



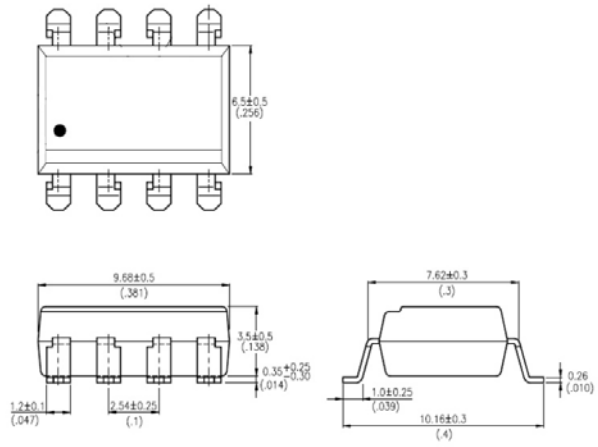
PACKAGE DIMENSIONS in mm (inch)

SMD

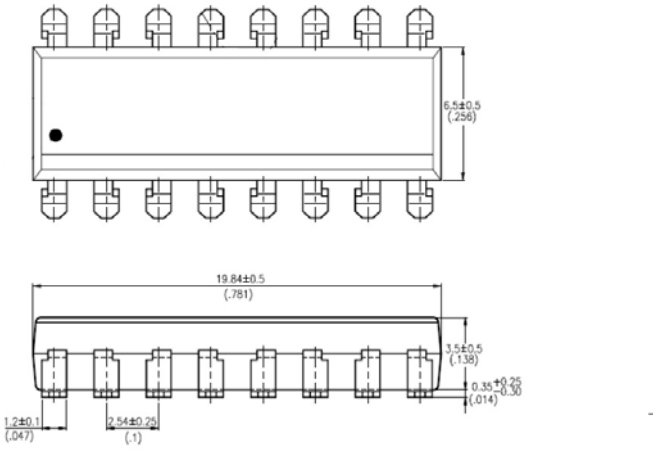
TLP321SM



TLP321-2SM

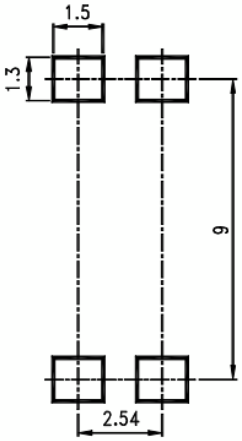


TLP321-4SM

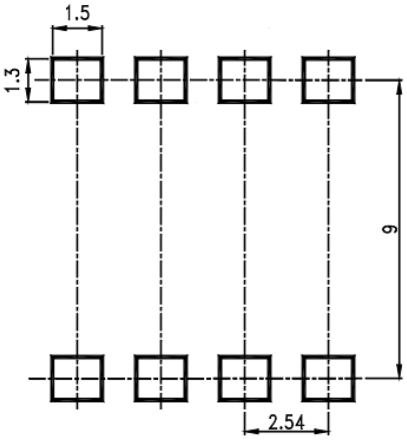


RECOMMENDED PAD LAYOUT FOR SMD (mm)

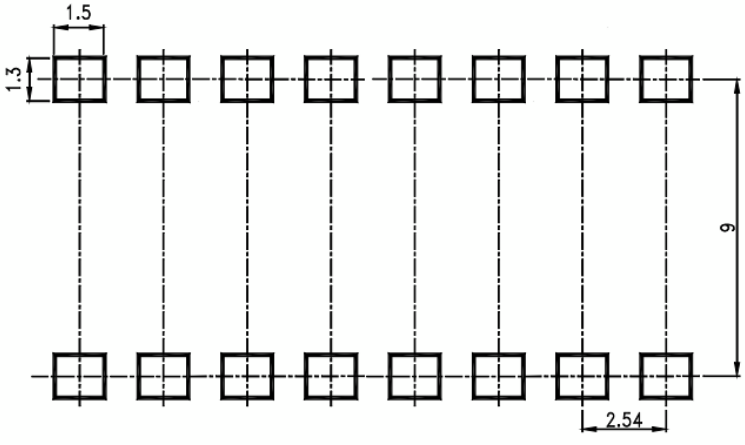
TLP321SM



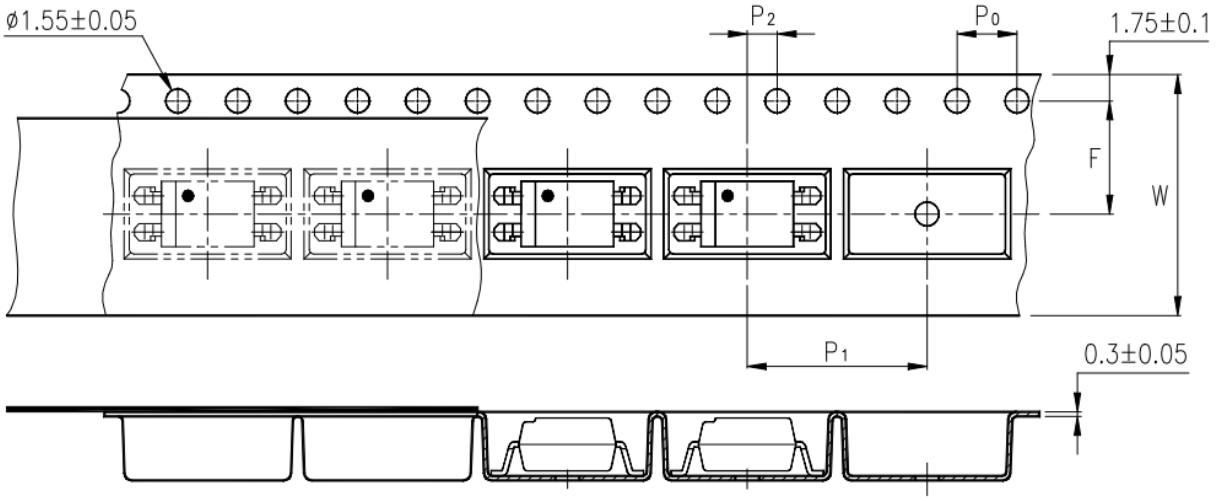
TLP321-2SM



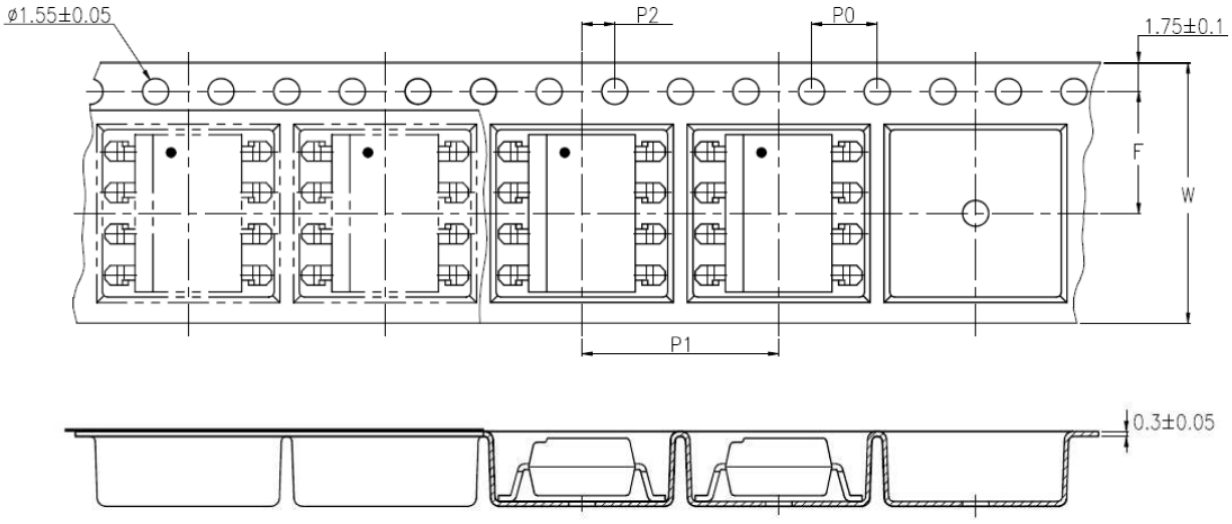
TLP321-4SM



TAPE AND REEL PACKAGING



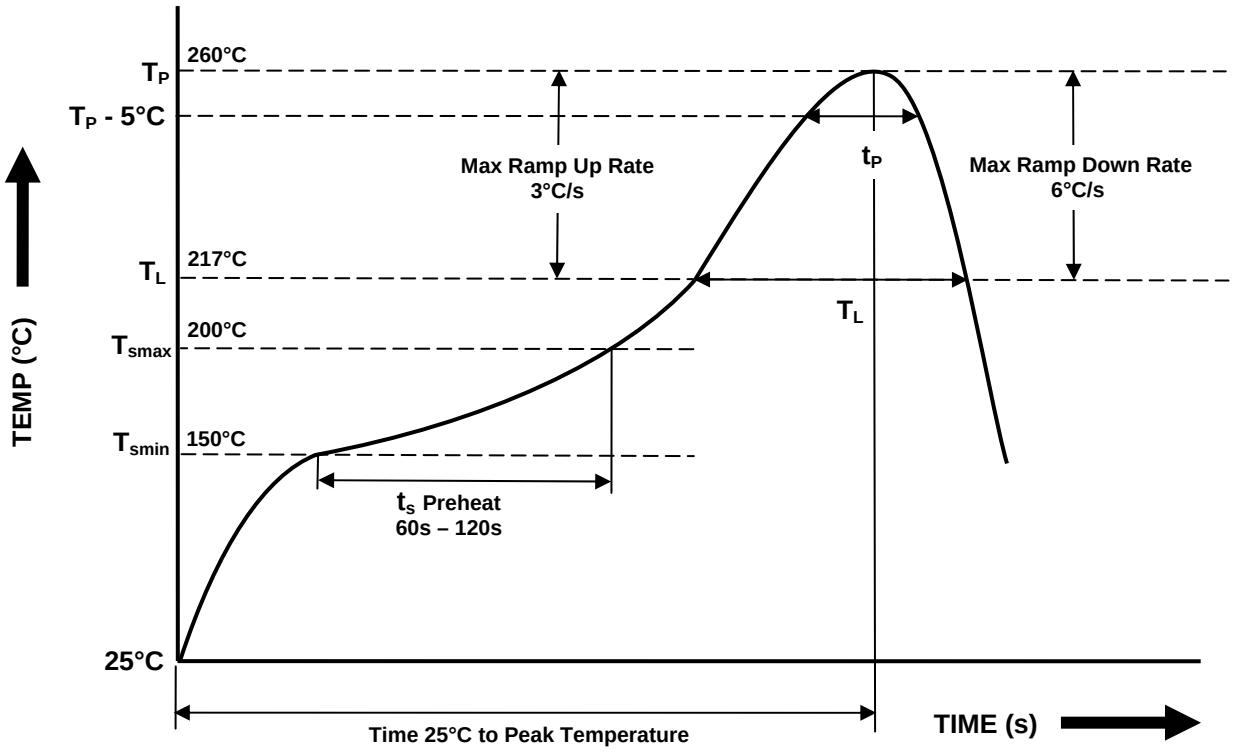
TLP321SMT&R



TLP321-2SMT&R

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 P_2	7.5 ± 0.1 (.295) 2 ± 0.1 (.079)
Distance of compartment to compartment	P_1	12 ± 0.1 (.472)

IR REFLOW SOLDERING TEMPERATURE PROFILE FOR SMD
(One Time Reflow Soldering is Recommended)



Profile Details	Conditions
Preheat - Min Temperature (T_{SMIN}) - Max Temperature (T_{SMAX}) - Time T_{SMIN} to T_{SMAX} (t_s)	 150°C 200°C 60s - 120s
Soldering Zone - Peak Temperature (T_P) - Time at Peak Temperature - Liquidous Temperature (T_L) - Time within 5°C of Actual Peak Temperature (T_P – 5°C) - Time maintained above T_L (t_L) - Ramp Up Rate (T_L to T_P) - Ramp Down Rate (T_P to T_L)	 260°C 10s max 217°C 30s max 60s - 100s 3°C/s max 6°C/s max
Average Ramp Up Rate (T_{smax} to T_P)	3°C/s max
Time 25°C to Peak Temperature	8 minutes max

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- For equipment/application where high reliability or safety is required, such as space applications, nuclear power control equipment, medical equipment, etc., please contact our sales representatives.

- When requiring a device for any ”specific” application, please contact our sales for advice.

- The contents described herein are subject to change without prior notice.

- Do not immerse device body in solder paste.

ISOCOM
COMPONENTS

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