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	6.0			V
Reverse Leakage	I_R	V_R = 4V			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} = 20V, I_F = 0mA			100	nA

COUPLED

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Current Transfer Ratio	CTR	I_F = 5mA, V_{CE} = 5V Optional CTR Grades BL GB GB (I_F = 1mA, V_{CE} = 0.4V)	50 200 100 30		600 600 600	%
Collector—Emitter Saturation Voltage	$V_{CE(sat)}$	I_F = 8mA, I_C = 2.4mA GB (I_F = 1mA, I_C = 0.2mA)			0.4 0.4	V
Output Rise Time	t_r	V_{CE} = 2V, Ic = 2mA, R_L = 100Ω		4		µs
Output Fall Time	t_f			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.

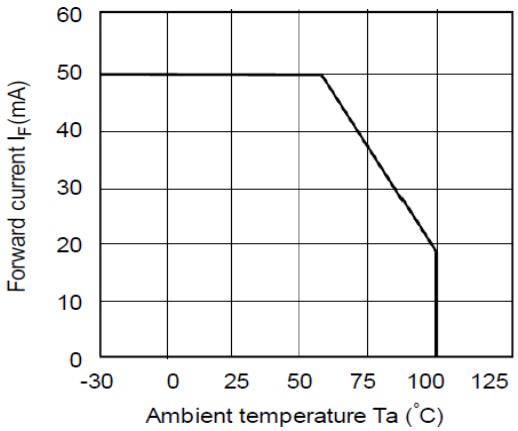


Fig 1 Forward Current vs T_A

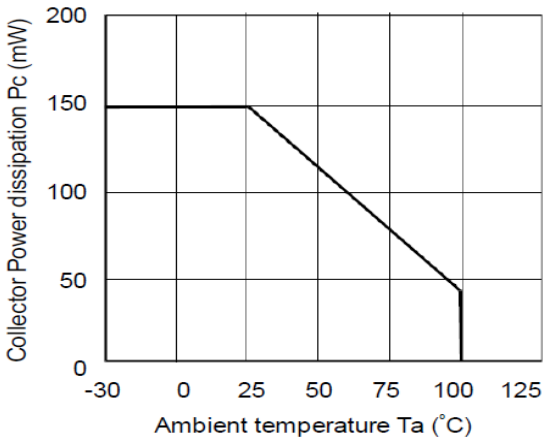


Fig 2 Collector Power Dissipation vs T_A

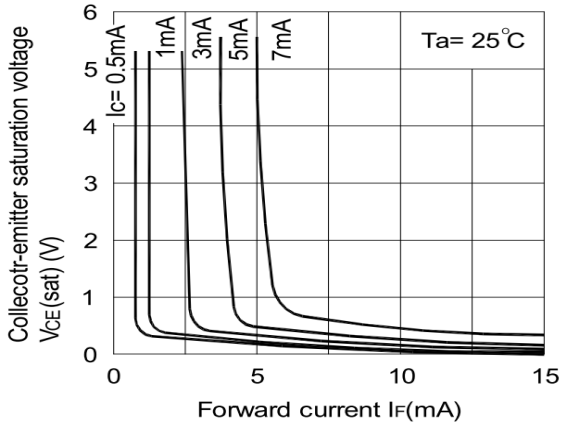


Fig 3 Collector-emitter Saturation Voltage vs Forward Current

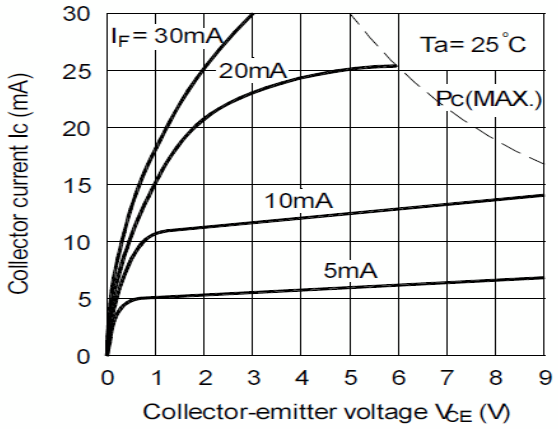


Fig 4 Collector Current vs Collector-emitter Voltage

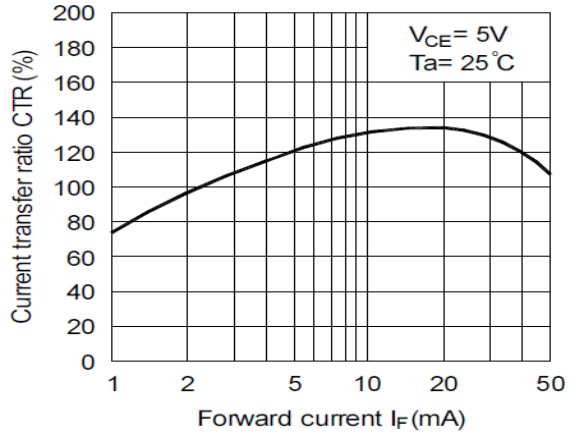


Fig 5 Current Transfer Ratio vs Forward Current

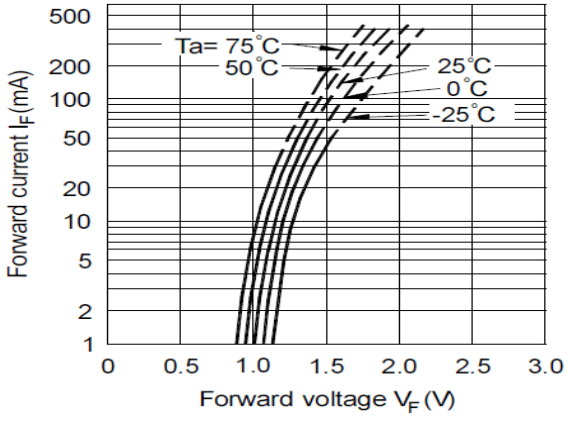


Fig 6 Forward Current vs Forward Voltage

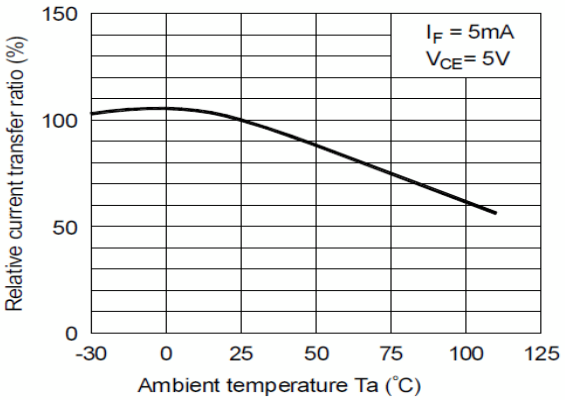


Fig 7 Relative CTR vs T_A

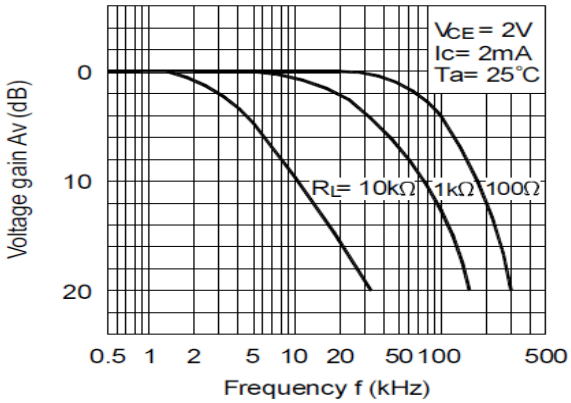


Fig 8 Frequency Response

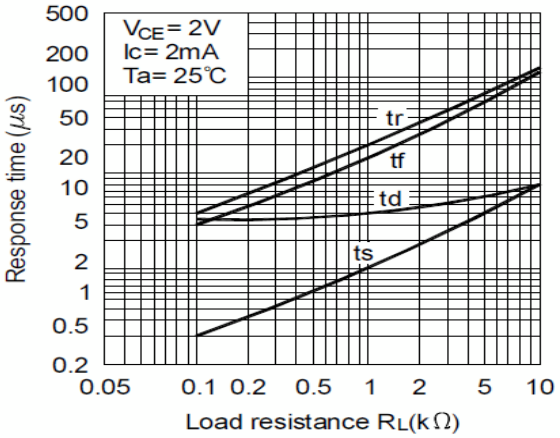
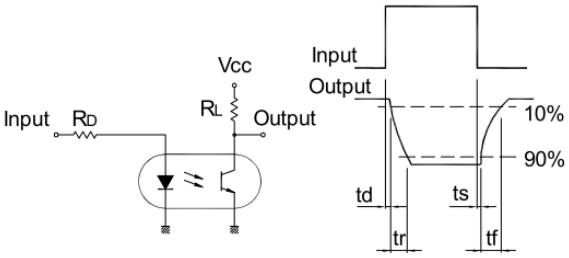


Fig 9 Response Time vs Load Resistance



Response Time Test Circuit

ORDER INFORMATION

ISP321-1 (UL Approval)			
After PN	**PN**	**Description**	**Packing quantity**
None	ISP321-1, ISP321-1BL, ISP321-1GB	Standard DIP4	100 pcs per tube
G	ISP321-1G, ISP321-1BLG, ISP321-1GBG	10mm Lead Spacing	100 pcs per tube
SM	ISP321-1SM, ISP321-1BLSM, ISP321-1GBSM	Surface Mount	100 pcs per tube
SMT&R	ISP321-1SMT&R, ISP321-1BLSMT&R, ISP321-1GBSMT&R	Surface Mount Tape & Reel	1000 pcs per reel

ISP321-2 (UL Approval)			
After PN	**PN**	**Description**	**Packing quantity**
None	ISP321-2, ISP321-2BL, ISP321-2GB	Standard DIP8	50 pcs per tube
G	ISP321-2G, ISP321-2BLG, ISP321-2GBG	10mm Lead Spacing	50 pcs per tube
SM	ISP321-2SM, ISP321-2BLSM, ISP321-2GBSM	Surface Mount	50 pcs per tube
SMT&R	ISP321-2SMT&R, ISP321-2BLSMT&R, ISP321-2GBSMT&R	Surface Mount Tape & Reel	1000 pcs per reel

ISP321-4 (UL Approval)			
After PN	**PN**	**Description**	**Packing quantity**
None	ISP321-4, ISP321-4BL, ISP321-4GB	Standard DIP16	25 pcs per tube
G	ISP321-4G, ISP321-4BLG, ISP321-4GBG	10mm Lead Spacing	25 pcs per tube
SM	ISP321-4SM, ISP321-4BLSM, ISP321-4GBSM	Surface Mount	25 pcs per tube

ORDER INFORMATION

ISP321X (UL and VDE Approvals)			
After PN	**PN**	**Description**	**Packing quantity**
None	ISP321-1X, ISP321-1XBL, ISP321-1XGB	Standard DIP4	100 pcs per tube
G	ISP321-1XG, ISP321-1XBLG, ISP321-1XGBG	10mm Lead Spacing	100 pcs per tube
SM	ISP321-1XSM, ISP321-1XBLSM, ISP321-1XGBSM	Surface Mount	100 pcs per tube
SMT&R	ISP321-1XSMT&R, ISP321-1XBLSMT&R, ISP321-1XGBSMT&R	Surface Mount Tape & Reel	1000 pcs per reel

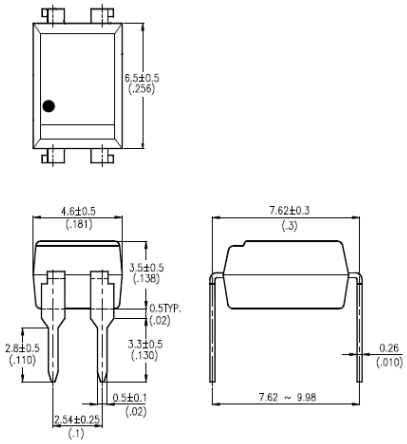
ISP321-2X (UL and VDE Approvals)			
After PN	**PN**	**Description**	**Packing quantity**
None	ISP321-2X, ISP321-2XBL, ISP321-2XGB	Standard DIP8	50 pcs per tube
G	ISP321-2XG, ISP321-2XBLG, ISP321-2XGBG	10mm Lead Spacing	50 pcs per tube
SM	ISP321-2XSM, ISP321-2XBLSM, ISP321-2XGBSM	Surface Mount	50 pcs per tube
SMT&R	ISP321-2XSMT&R, ISP321-2XBLSMT&R, ISP321-2XGBSMT&R	Surface Mount Tape & Reel	1000 pcs per reel

ISP321-4X (UL and VDE Approvals)			
After PN	**PN**	**Description**	**Packing quantity**
None	ISP321-4X, ISP321-4XBL, ISP321-4XGB	Standard DIP16	25 pcs per tube
G	ISP321-4XG, ISP321-4XBLG, ISP321-4XGBG	10mm Lead Spacing	25 pcs per tube
SM	ISP321-4XSM, ISP321-4XBLSM, ISP321-4XGBSM	Surface Mount	25 pcs per tube

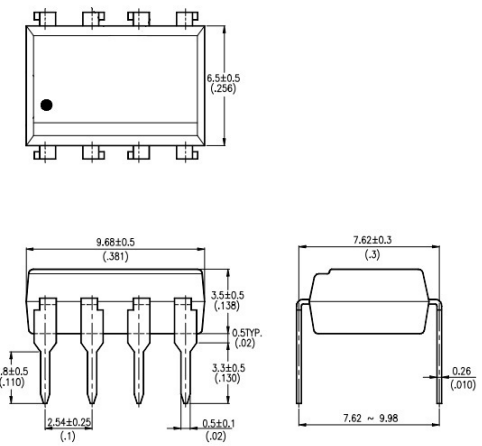
PACKAGE DIMENSIONS in mm (inch)

DIP

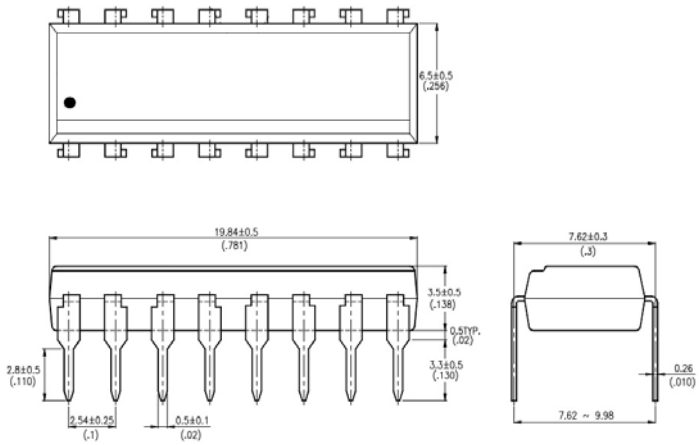
ISP321-1



ISP321-2



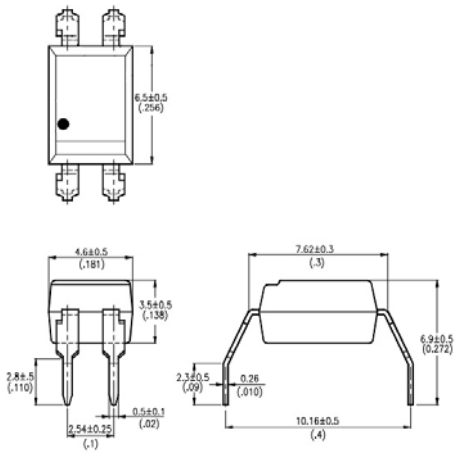
ISP321-4



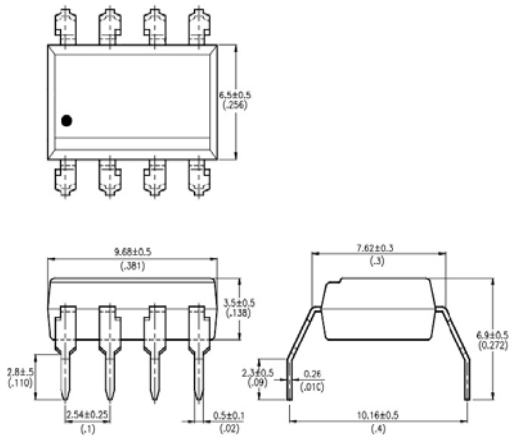
PACKAGE DIMENSIONS in mm (inch)

G Form

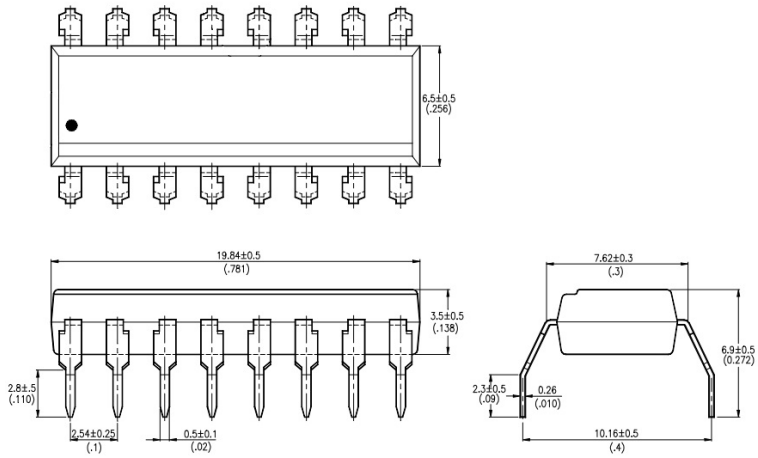
ISP321-1G



ISP321-2G



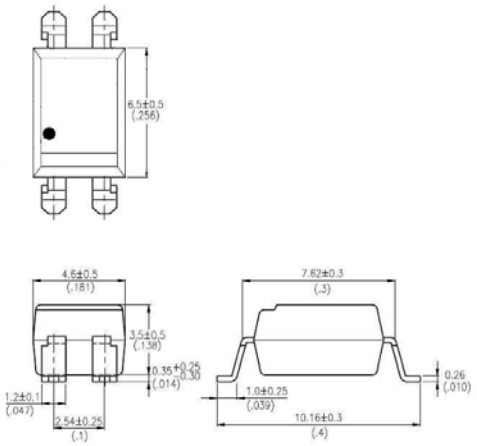
ISP321-4G



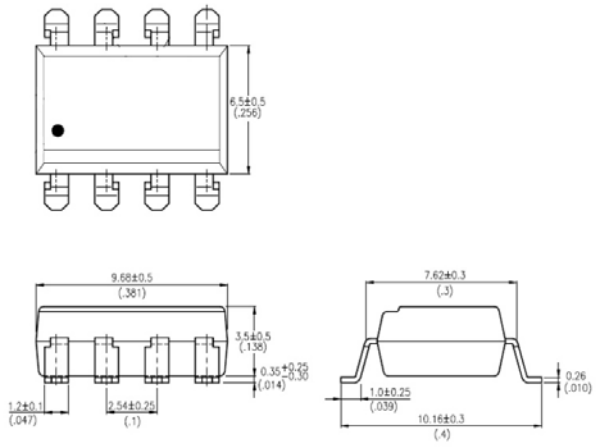
PACKAGE DIMENSIONS in mm (inch)

SMD

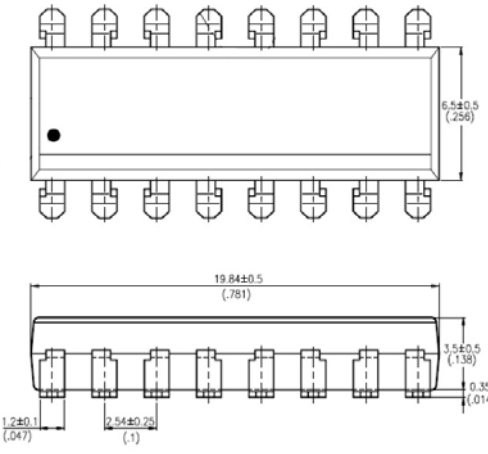
ISP321-1SM



ISP321-2SM

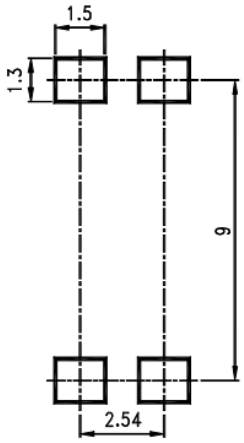


ISP321-4SM

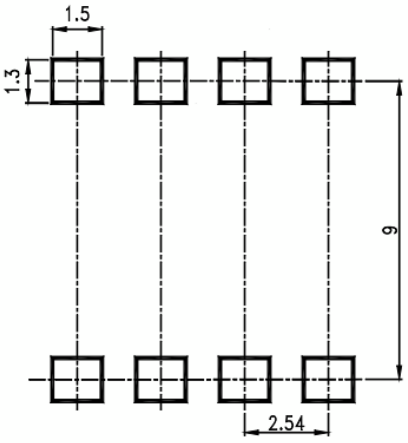


RECOMMENDED PAD LAYOUT FOR SMD (mm)

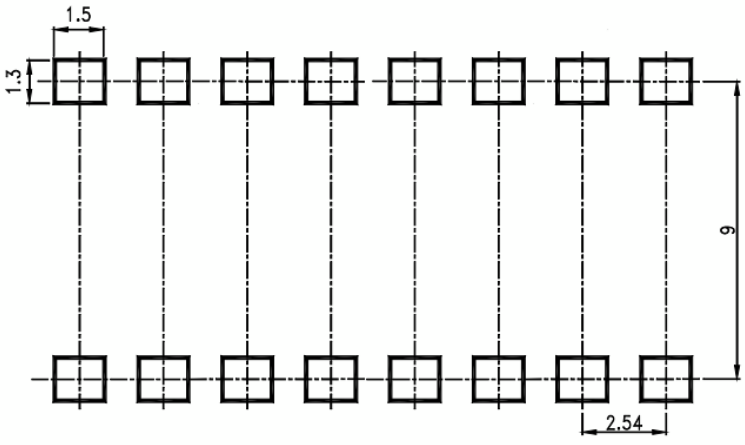
ISP321-1SM



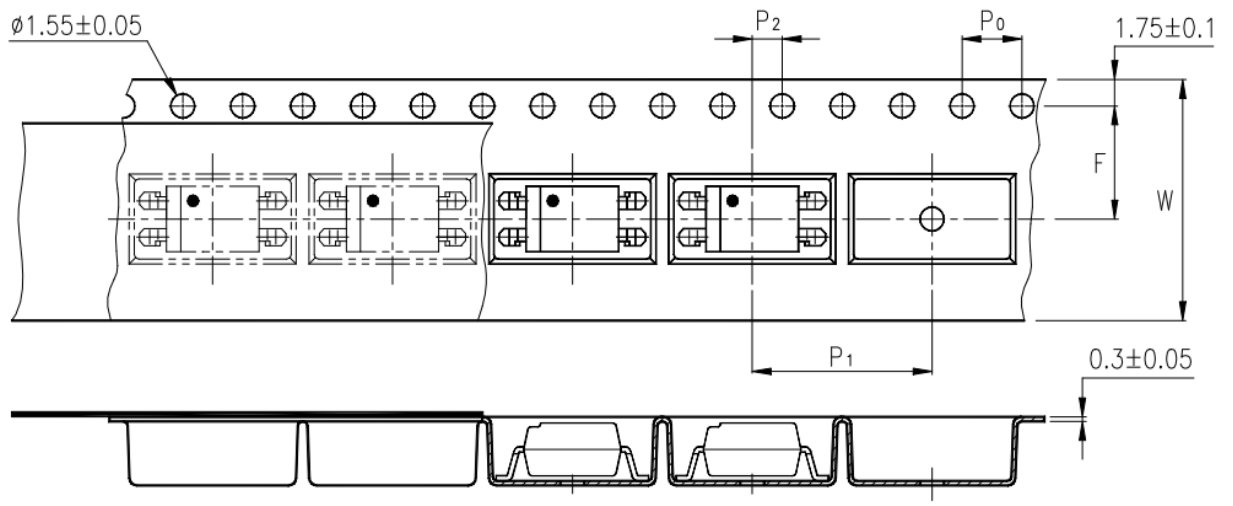
ISP321-2SM



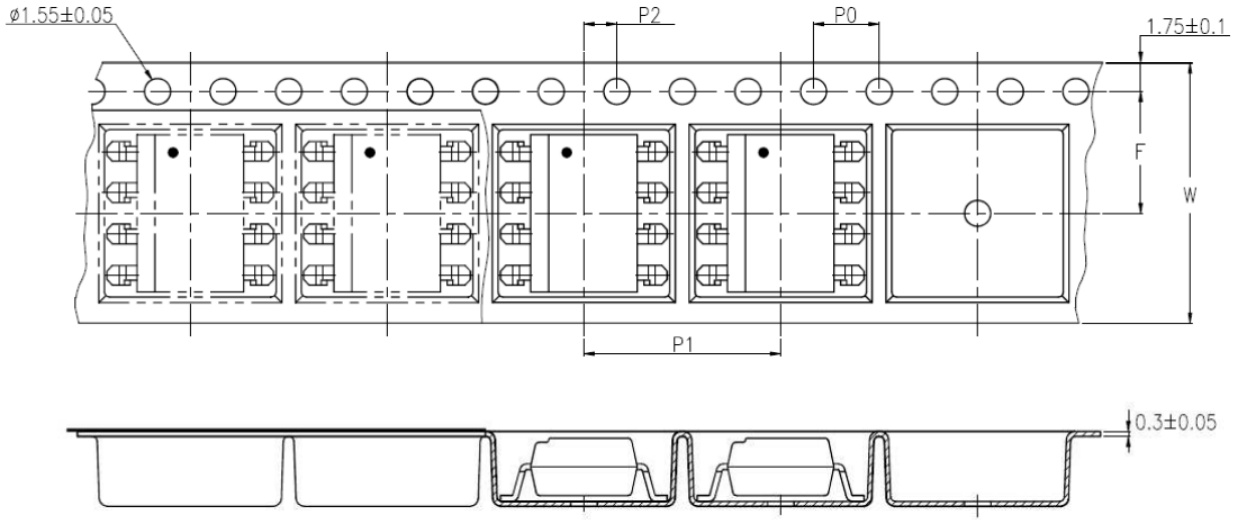
ISP321-4SM



TAPE AND REEL PACKAGING



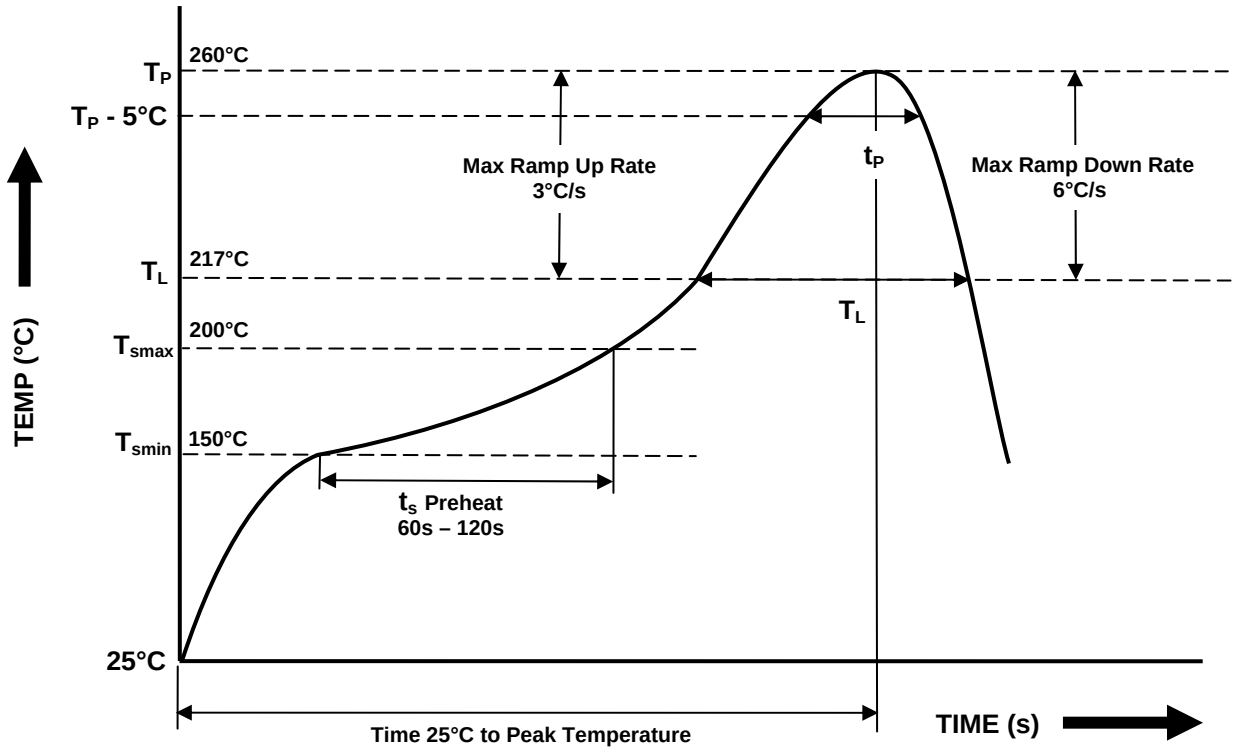
ISP321-1SMT&R



ISP321-2SMT&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

NOTES :

- Isocom is continually improving the quality, reliability, function or design and Isocom reserves the right to make changes without further notices.

- The products shown in this publication are designed for the general use in electronic applications such as office automation equipment, communications devices, audio/visual equipment, electrical application and instrumentation.

- 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

DISCLAIMER

__ ISOCOM is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing ISOCOM products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such ISOCOM products could cause loss of human life, bodily injury or damage to property.

In developing your designs, please ensure that ISOCOM products are used within specified operating ranges as set forth in the most recent ISOCOM products specifications.

__ The ISOCOM products listed in this document are intended for usage in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial robotics, domestic appliances, etc.). These ISOCOM products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury (“Unintended Usage”). Unintended Usage include atomic energy control instruments, airplane or spaceship instruments, transportation Instruments, traffic signal instruments, combustion control instruments, medical Instruments, all types of safety devices, etc.. Unintended Usage of ISOCOM products listed in this document shall be made at the customer’s own risk.

__ Gallium arsenide (GaAs) is a substance used in the products described in this document. GaAs dust and fumes are toxic. Do not break, cut or pulverize the product, or use chemicals to dissolve them. When disposing of the products, follow the appropriate regulations. Do not dispose of the products with other industrial waste or with domestic garbage.

__ The products described in this document are subject to the foreign exchange and foreign trade laws.

__ The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by ISOCOM Components for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of ISOCOM Components or others.

__ The information contained herein is subject to change without notice.