

PROTECTION PRODUCTS
Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu s$)	P_{pk}	125	Watts
Maximum Peak Pulse Current ($t_p = 8/20\mu s$)	I_{pp}	5	Amps
ESD per IEC 61000-4-2 (Air) ¹ ESD per IEC 61000-4-2 (Contact) ¹	V_{ESD}	+/- 30 +/- 30	kV
Operating Temperature	T_J	-55 to +125	°C
Storage Temperature	T_{STG}	-55 to +150	°C

Electrical Characteristics (T=25°C)

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}	Pin 1 to 2 or 2 to 1			12	V
Reverse Breakdown Voltage	V_{BR}	$I_t = 1mA$ Pin 1 to 2 or 2 to 1	13.3	16	19	V
Reverse Leakage Current	I_R	$V_{RWM} = 12V, T=25^\circ C$ Pin 1 to 2 or 2 to 1		<10	50	nA
Clamping Voltage	V_C	$I_{pp} = 1A, t_p = 8/20\mu s$ Pin 1 to 2 or 2 to 1			20	V
Clamping Voltage	V_C	$I_{pp} = 5A, t_p = 8/20\mu s$ Pin 1 to 2 or 2 to 1			25	V
Dynamic Resistance ^{2, 3}	R_{DYN}	$t_{lp} = 0.2 / 100ns$		0.30		Ohms
Junction Capacitance	C_J	$V_R = 0V, f = 1MHz$		19	25	pF

Notes

1)ESD gun return path connected to ESD ground reference plane.

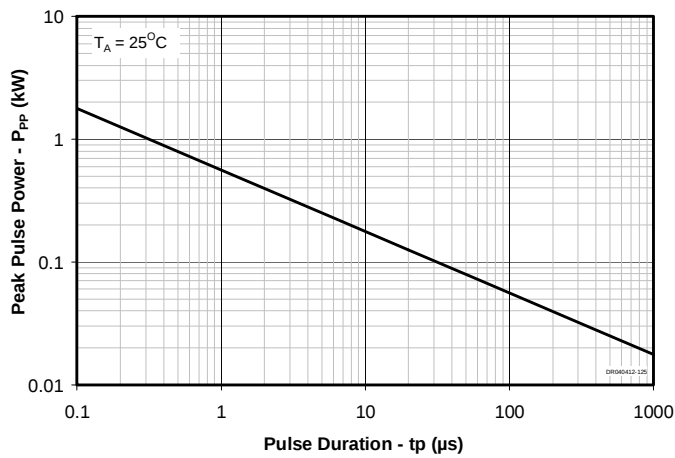
2)Transmission Line Pulse Test (TLP) Settings: $t_p = 100ns$, $t_r = 0.2ns$, I_{TLP} and V_{TLP} averaging window: $t_1 = 70ns$ to $t_2 = 90ns$.

3) Dynamic resistance calculated from $I_{TLP} = 4A$ to $I_{TLP} = 16A$

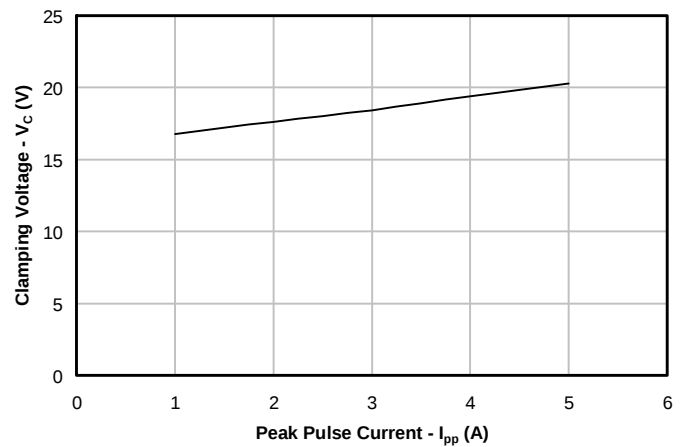
PROTECTION PRODUCTS

Typical Characteristics

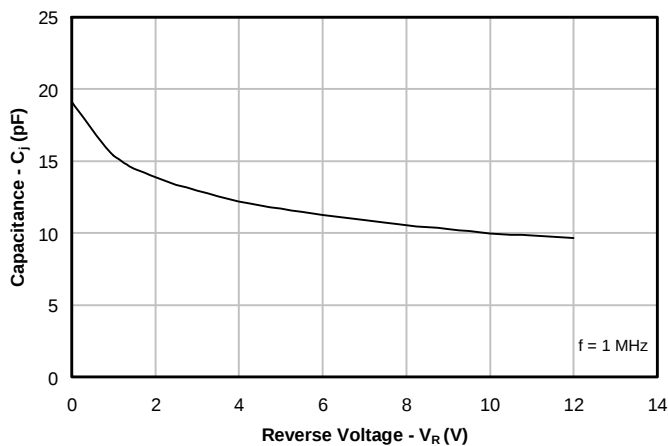
Non-Repetitive Peak Pulse Power vs. Pulse Time



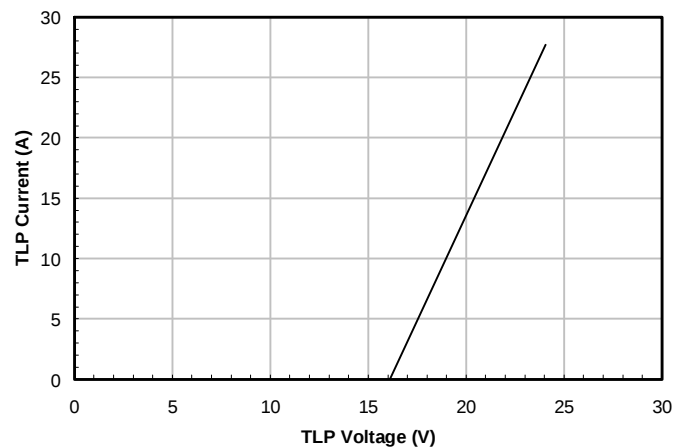
Clamping Voltage vs. Peak Pulse Current ($t_p=8/20\mu$ s)



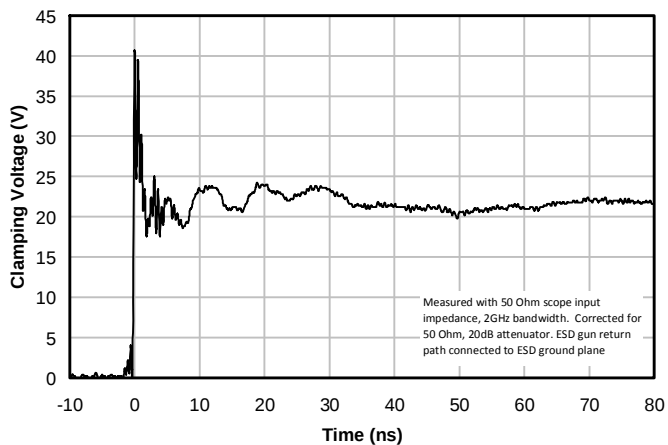
Junction Capacitance vs. Reverse Voltage



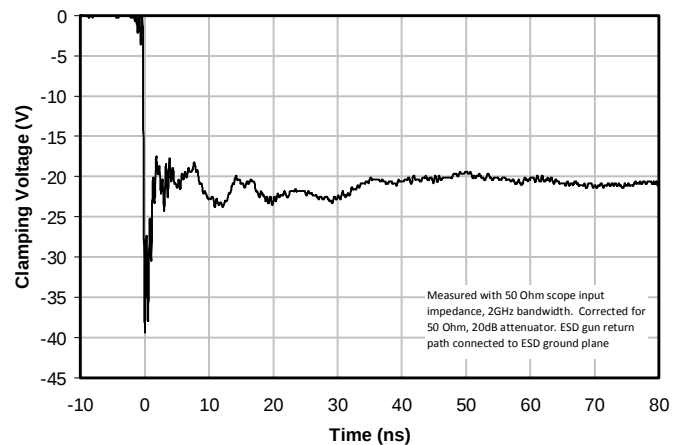
TLP Characteristic



ESD Clamping (+8kV Contact per IEC 61000-4-2)



ESD Clamping (-8kV Contact per IEC 61000-4-2)



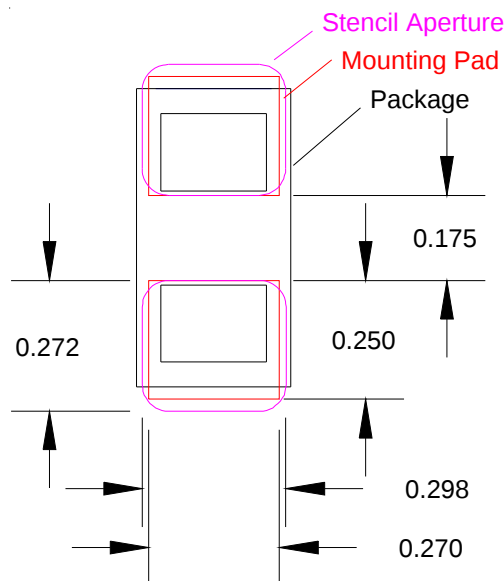
PROTECTION PRODUCTS

Applications Information

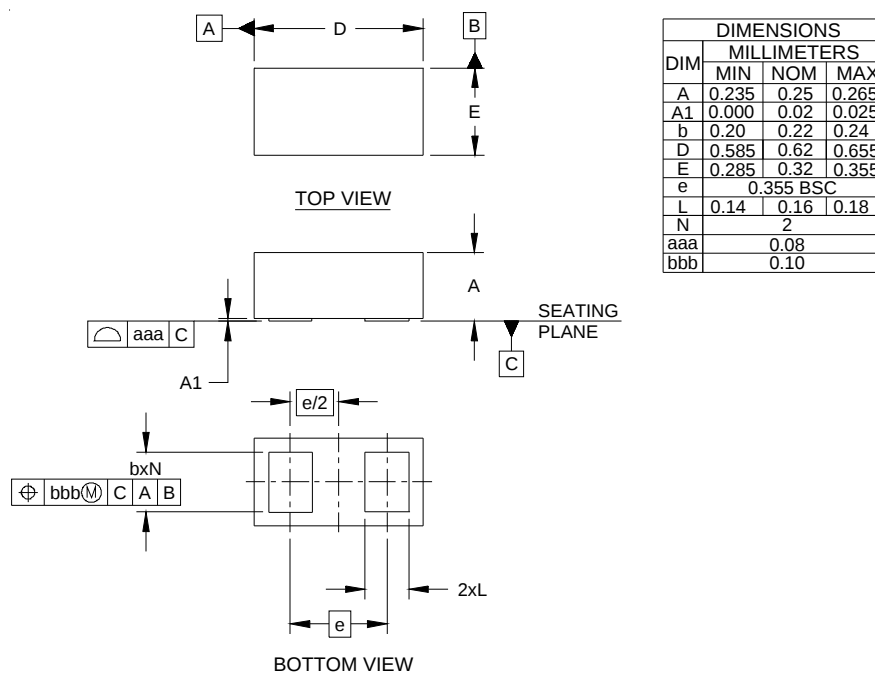
Assembly Guidelines

The small size of this device means that some care must be taken during the mounting process to insure reliable solder joint. The table below provides Semtech's recommended assembly guidelines for mounting this device. The figure at the right details Semtech's recommended aperture based on the below recommendations. Note that these are only recommendations and should serve only as a starting point for design since there are many factors that affect the assembly process. The exact manufacturing parameters will require some experimentation to get the desired solder application.

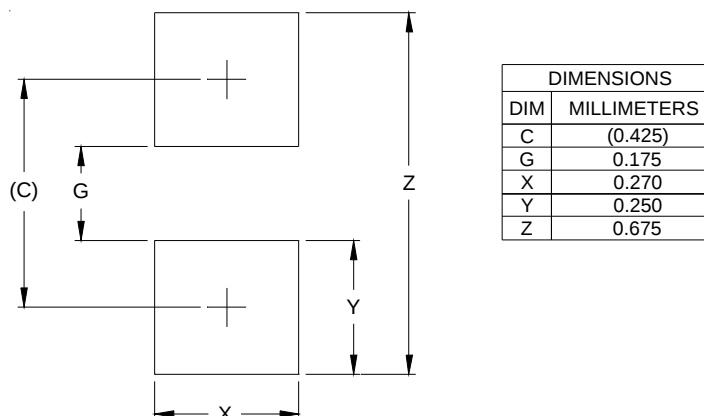
Assembly Parameter	Recommendation
Solder Stencil Design	Laser cut, Electro-polished
Aperture shape	Rectangular with rounded corners
Solder Stencil Thickness	0.100 mm (0.004")
Solder Paste Type	Type 4 size sphere or smaller
Solder Reflow Profile	Per JEDEC J-STD-020
PCB Solder Pad Design	Non-Solder mask defined
PCB Pad Finish	OSP OR NiAu



Recommended Mounting Pattern

PROTECTION PRODUCTS
Outline Drawing - SLP0603P2X3

NOTES:

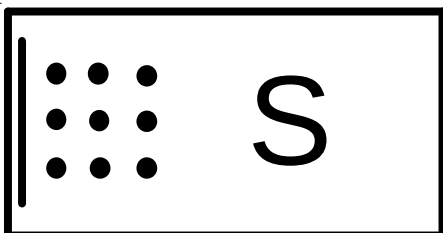
1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).

Land Pattern - SLP0603P2X3

NOTES:

1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY. CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR COMPANY'S MANUFACTURING GUIDELINES ARE MET.

PROTECTION PRODUCTS

Marking Code



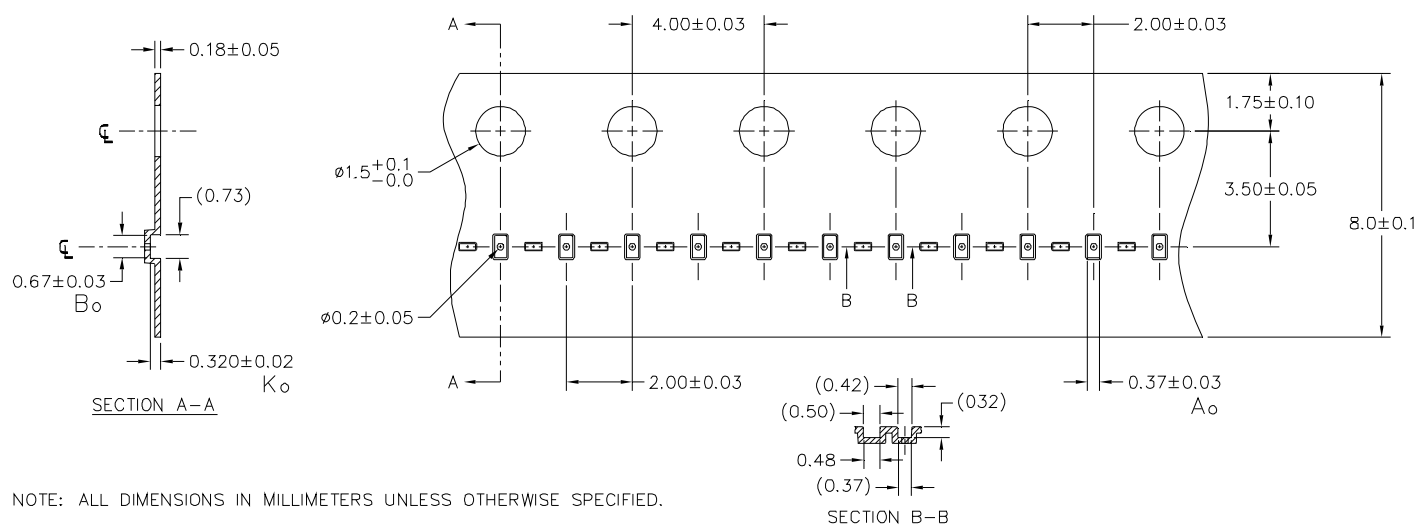
Notes:
Marking will also include dot matrix date code

Ordering Information

Part Number	Qty per Reel	Reel Size
uClamp1211Z.TNT	10,000	7 Inch

Notes:
MicroClamp, uClamp and μ Clamp are trademarks of Semtech Corporation

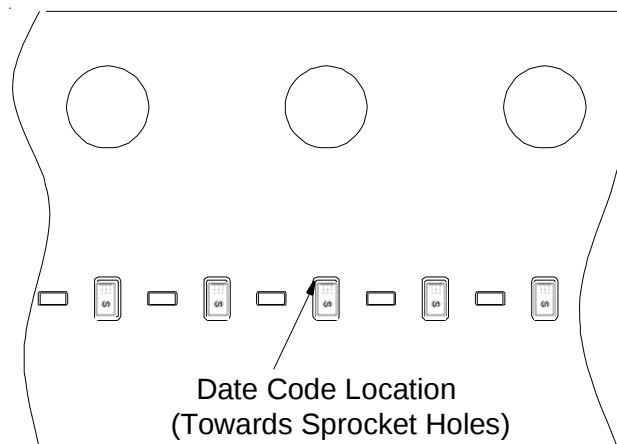
Carrier Tape Specification



A0	B0	K0
0.37 +/-0.03 mm	0.67 +/-0.03 mm	0.32 +/-0.02 mm

Note: All dimensions in mm unless otherwise specified

Device Orientation in Tape



Contact Information

Semtech Corporation
Protection Products Division
200 Flynn Rd., Camarillo, CA 93012
Phone: (805)498-2111 FAX (805)498-3804