

PROTECTION PRODUCTS

Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu s$)	P_{pk}	25	Watts
Maximum Peak Pulse Current ($t_p = 8/20\mu s$)	I_{pp}	2	Amps
ESD per IEC 61000-4-2 (Air) ¹ ESD per IEC 61000-4-2 (Contact) ¹	V_{ESD}	+/- 17 +/- 15	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}	Any I/O Pin to GND			5	V
Reverse Breakdown Voltage	V_{BR}	$I_t = 1mA$ Any I/O Pin to GND	6	8.2	9.5	V
Reverse Leakage Current	I_R	$V_{RWM} = 5V, T=25^\circ C$ Any I/O Pin to GND		3	50	nA
Clamping Voltage	V_C	$I_{pp} = 2A, t_p = 8/20\mu s$ Any I/O Pin to GND			12.5	V
ESD Clamping Voltage ²	V_C	$IPP = 4A,$ $t_{lp} = 0.2/100ns$		12		V
ESD Clamping Voltage ²	V_C	$IPP = 16A,$ $t_{lp} = 0.2/100ns$		20.5		V
Dynamic Resistance ^{2,3}	R_{Dyn}	$t_p = 100ns$		0.70		Ohms
Junction Capacitance	C_j	$V_R = 0V, f = 1MHz$ Any I/O Pin to GND		4.5	7	pF

Notes

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

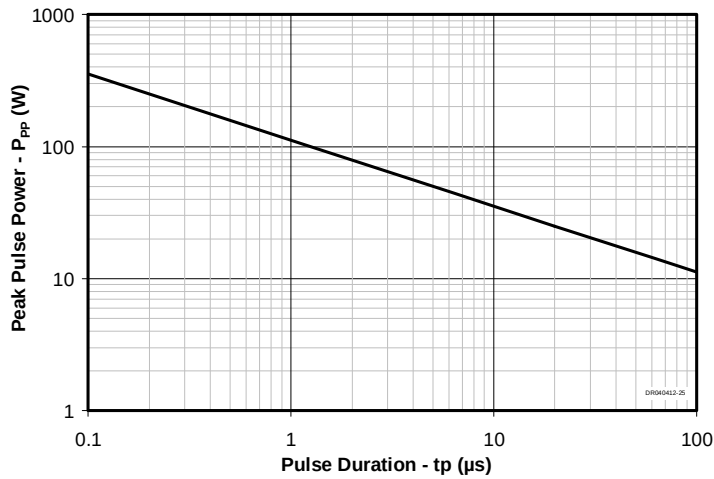
2)Transmission Line Pulse Test (TLP) Settings: $t_p = 100ns$, $t_r = 0.2ns$, I_{TLP} and V_{TLP} averaging window: $t_1 = 70ns$ to $t_2 = 90ns$.

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

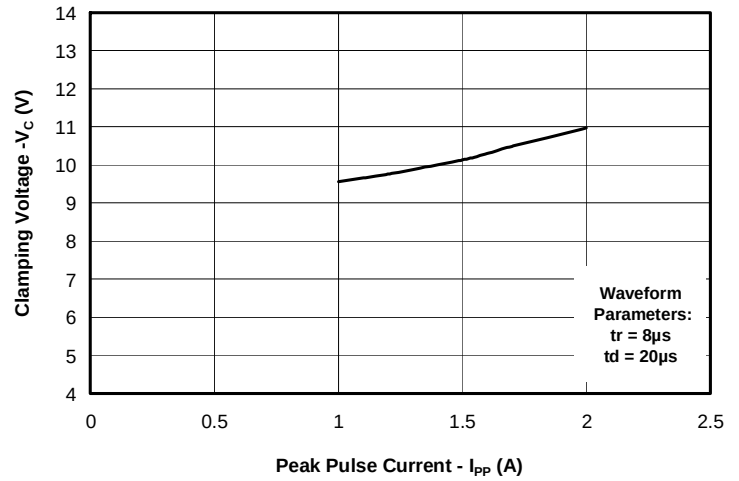
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Typical Characteristics

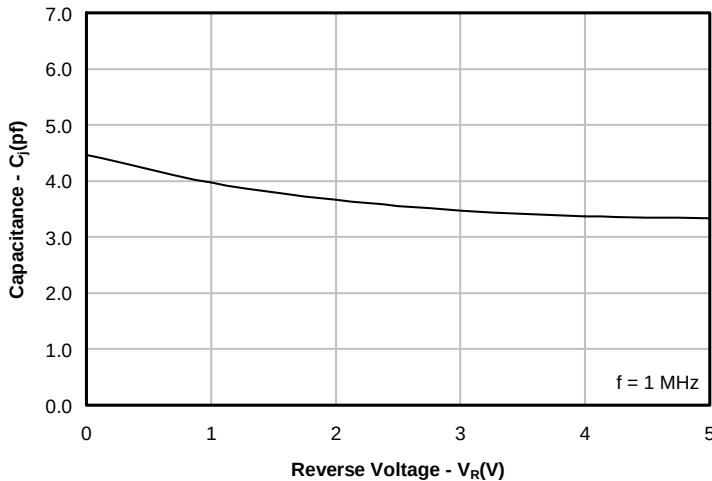
Non-Repetitive Peak Pulse Power vs. Pulse Time



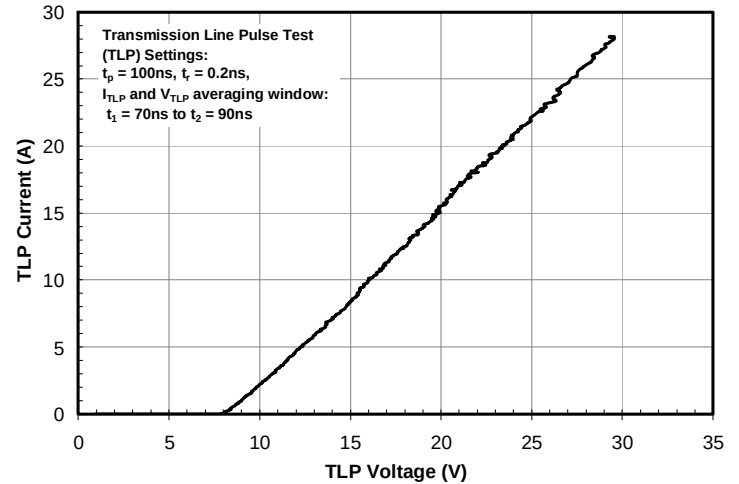
Clamping Voltage vs. Peak Pulse Current ($t_p=8/20\mu$ s)



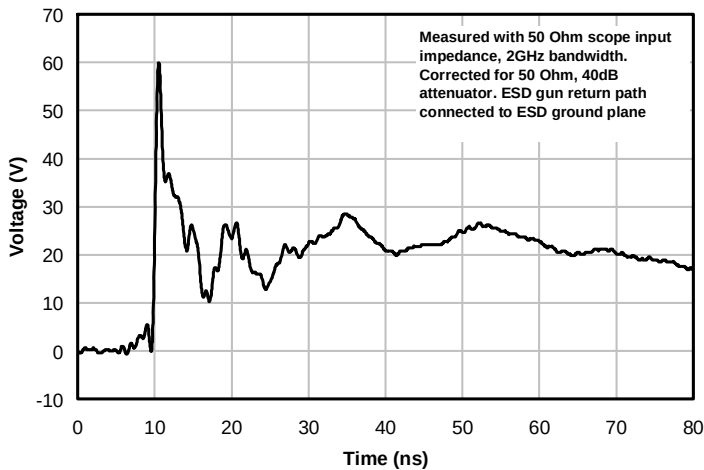
Junction Capacitance vs. Reverse Voltage



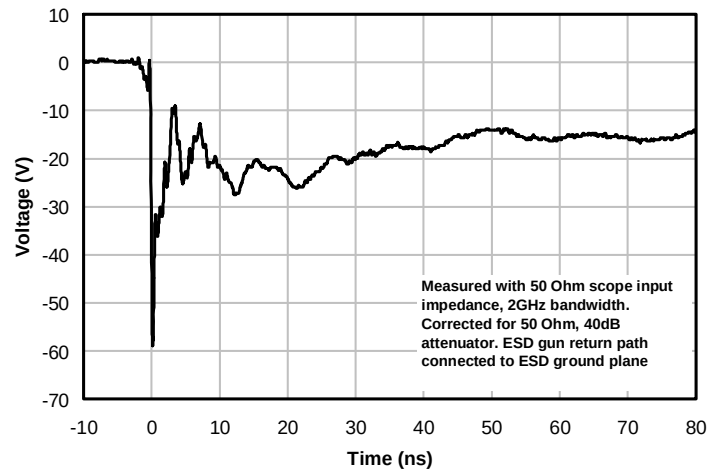
TLP Characteristic



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



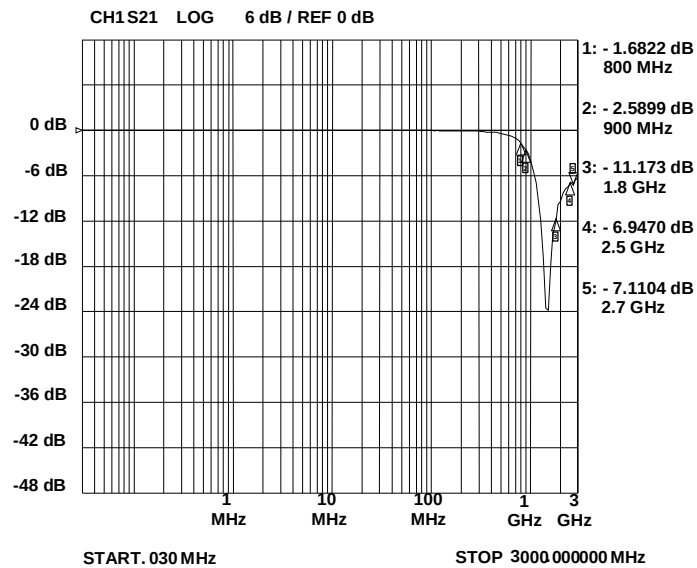
ESD Clamping (-8kV Contact per IEC 61000-4-2)



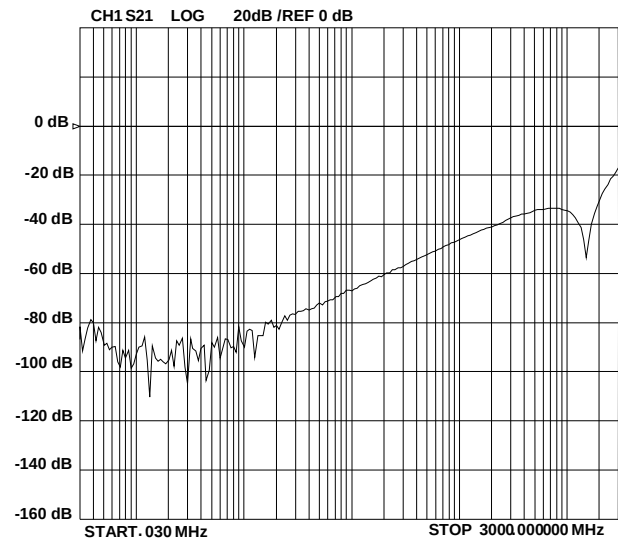
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Typical Characteristics

Typical Insertion Loss S21



Analog Crosstalk



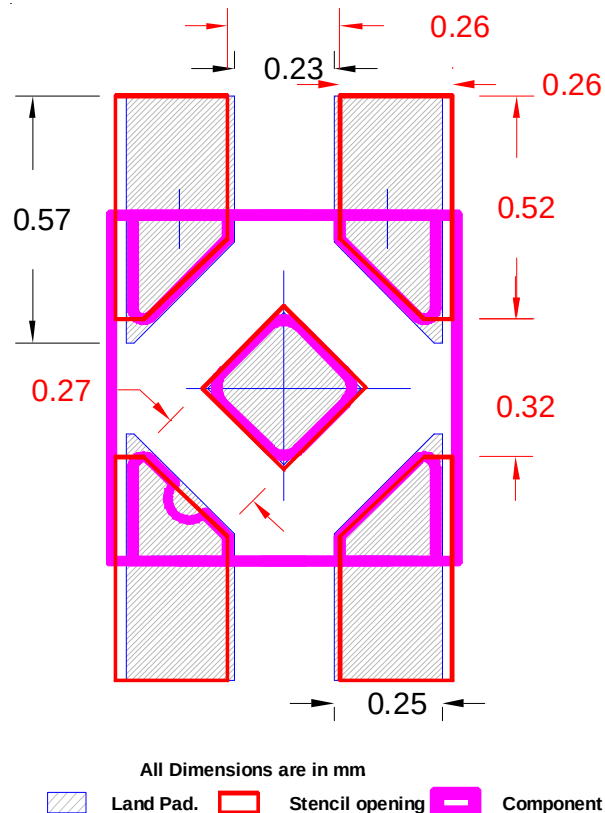
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Recommended Assembly Parameters

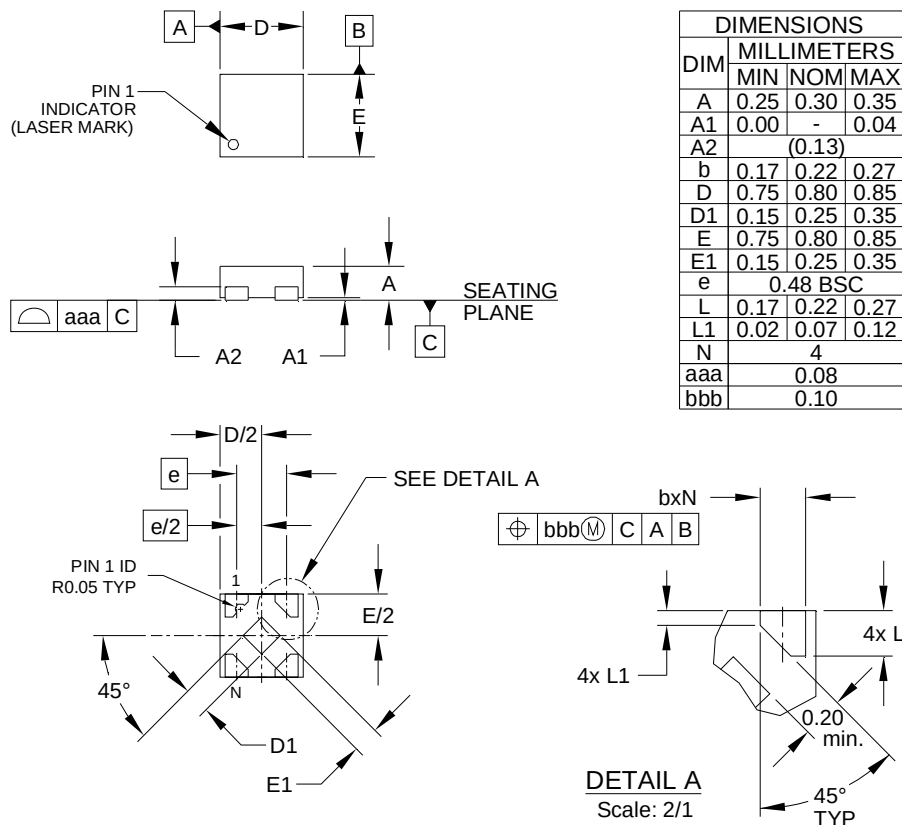
Assembly Guidelines

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.

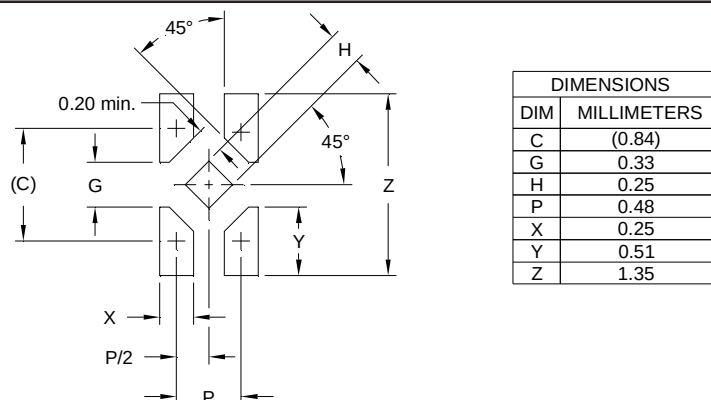
Assembly Parameter	Recommendation
Solder Stencil Design	Laser cut, Electro-polished
Aperture shape	Rectangular
Solder Stencil Thickness	0.100 mm (0.004")
Solder Paste Type	Type 4 size sphere or smaller
Solder Reflow Profile	Per JEDEC J-STD-020
PCB Solder Pad Design	Non-Solder mask defined
PCB Pad Finish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



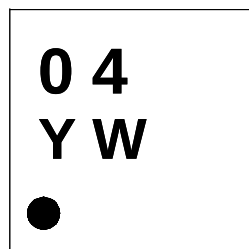
Recommended Mounting Pattern

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Outline Drawing - SLP0808P4T

NOTES:

1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.

Land Pattern - SLP0808P4T

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.
3. THERMAL VIAS IN THE LAND PATTERN OF THE EXPOSED PAD SHALL BE CONNECTED TO A SYSTEM GROUND PLANE. FAILURE TO DO SO MAY COMPROMISE THE THERMAL AND/OR FUNCTIONAL PERFORMANCE OF THE DEVICE.

PROTECTION PRODUCTS
Marking Code


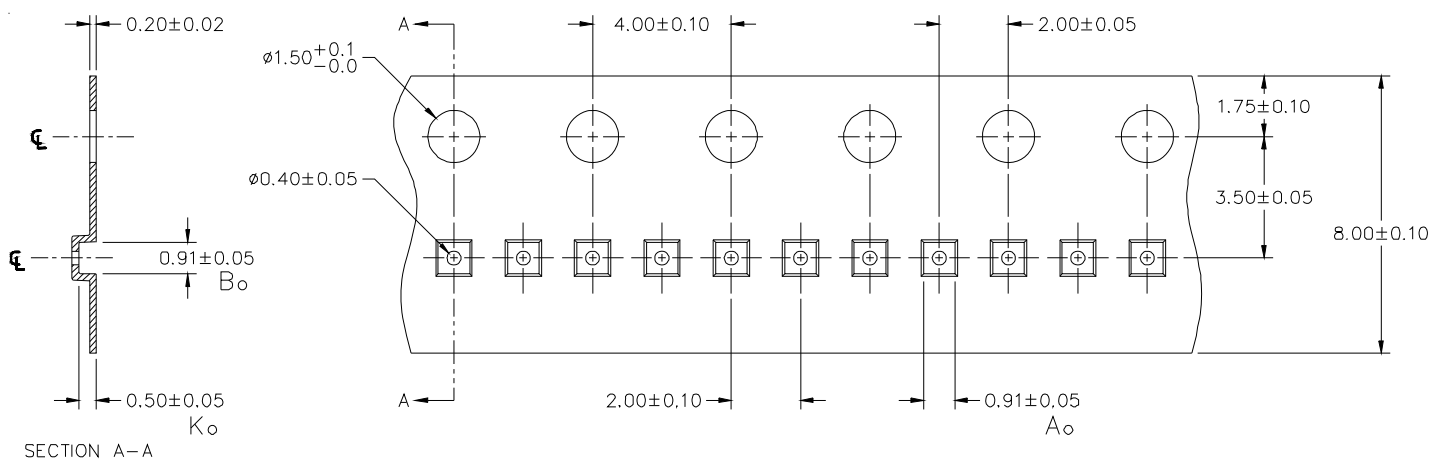
YW = Date Code

Ordering Information

Part Number	Qty per Reel	Reel Size
uClamp0554T.TNT	10,000	7 Inch

Notes:

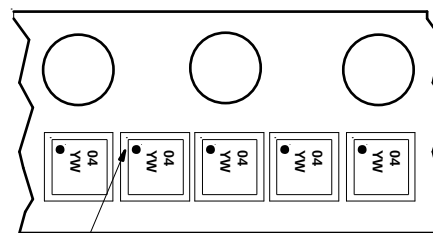
MicroClamp, uClamp and μ Clamp are trademarks of Semtech Corporation

Carrier Tape Specification


ESTIMATED MAX. LENGTH: 500 METER/13x6.

CUMULATIVE TOLERANCE OF 10 SPROCKET HOLES IS $\pm 0.20\text{mm}$.

NOTES: ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.

Device Orientation in Tape


Pin 1 Location
(Towards Sprocket Holes)

Contact Information

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