Absolute Maximum Rating

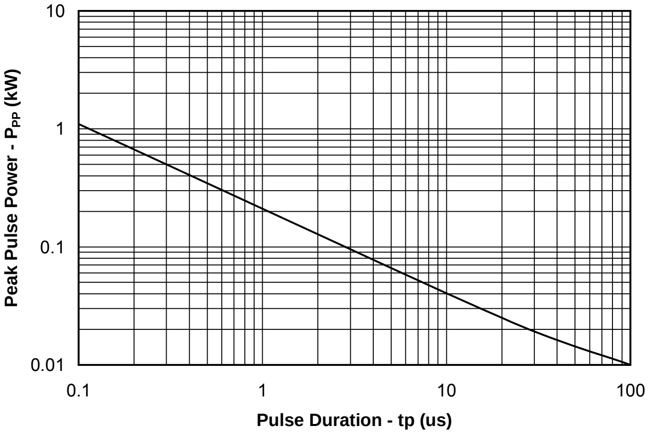
Rating	Symbol	Value	Units
Peak Pulse Power (tp = 8/20μs)	P_{pk}	25	Watts
Maximum Peak Pulse Current (tp = 8/20μs)	I_{pp}	2	Amps
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	+/- 20 +/- 15	kV
Operating Temperature	T_J	-55 to +125	°C
Storage Temperature	T_{STG}	-55 to +150	°C

Electrical Characteristics (T=25°C)

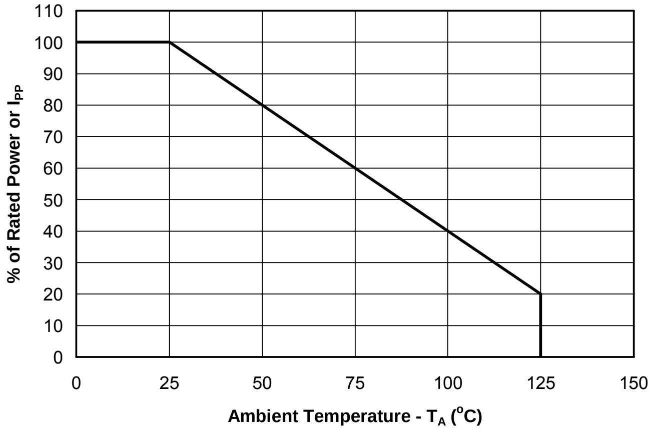
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	I_t = 1mA	6			V
Reverse Leakage Current	I_R	V_{RWM} = 5V, T=25°C			0.25	μA
Forward Voltage	V_F	I_F = 10mA		1	1.2	V
Clamping Voltage	V_C	I_{PP} = 2A, t_p = 8/20μs			12.5	V
Junction Capacitance	C_j	V_R = 0V, f = 1MHz			10	pF
Junction Capacitance	C_j	V_R = 3.3V, f = 1MHz		4.5		pF

Typical Characteristics

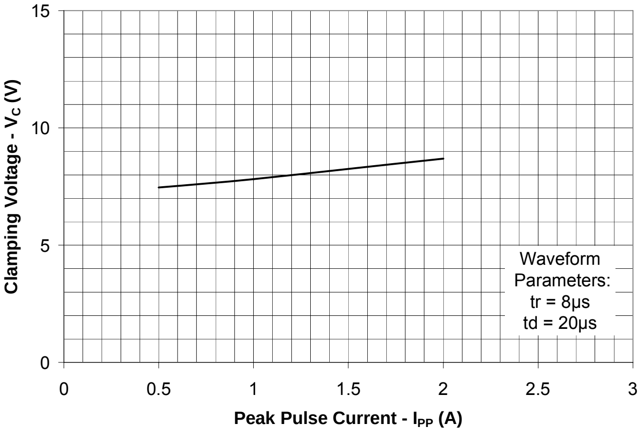
Non-Repetitive Peak Pulse Power vs. Pulse Time



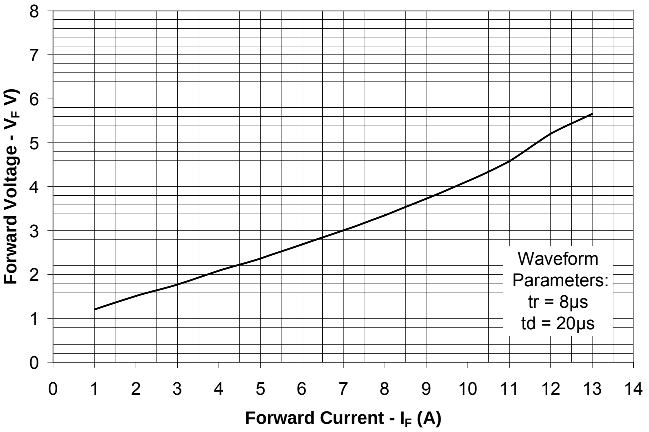
Power Derating Curve



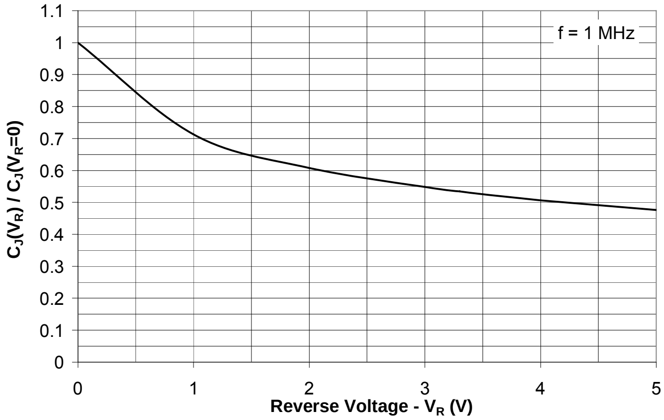
Clamping Voltage vs. Peak Pulse Current



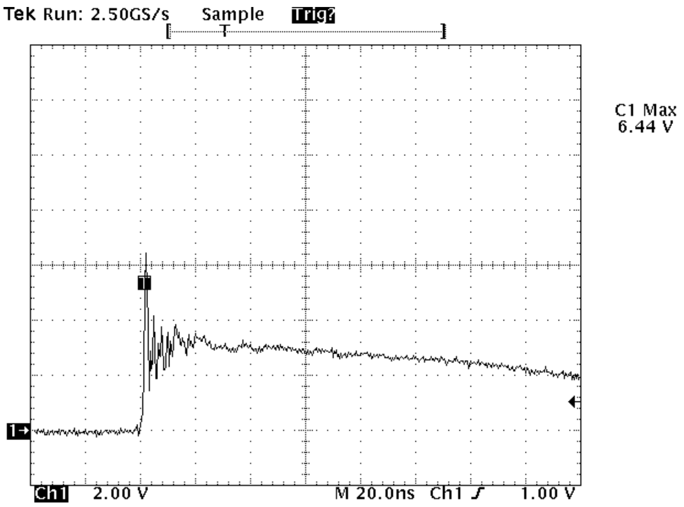
Forward Voltage vs. Forward Current



Junction Capacitance vs. Reverse Voltage



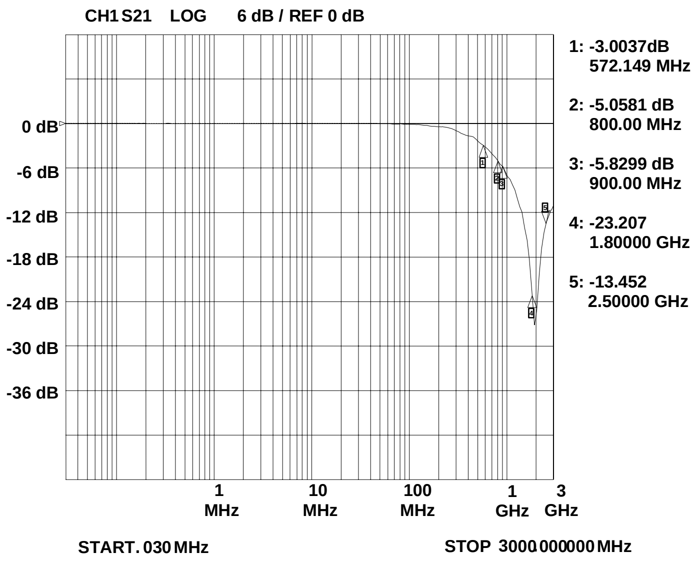
ESD Clamping
(8kV Contact per IEC 61000-4-2)



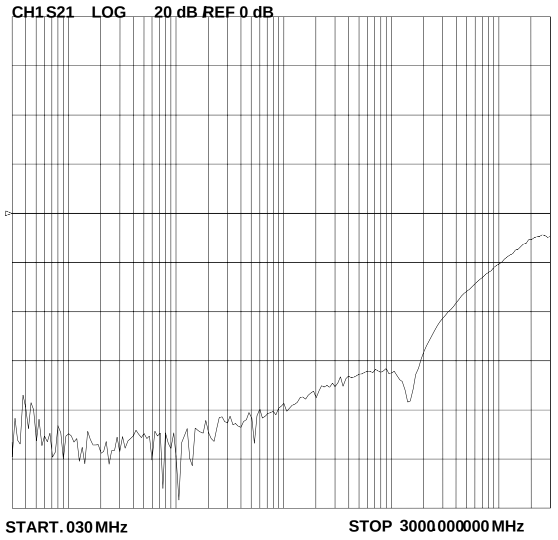
Note: Data is taken with a 10x attenuator

Typical Characteristics

Insertion Loss S21



Analog Crosstalk



Applications Information

Device Connection Options

This device is designed to protect eight data lines. The device is unidirectional and may be used on lines where the signal polarity is above ground.

Ground Connection Recommendation

Parasitic inductance present in the board layout will affect the filtering and ESD performance of the device. Ground loop inductance can be reduced by using multiple vias to make the connection to the ground plane. Figure 2 shows the recommended device layout. The ground pad vias have a diameter of 0.008 inches (0.20 mm) while the two external vias have a diameter of 0.010 inches (0.250mm). The internal vias are spacedapproximately evenly from the center of the pad. The designer may choose to use more vias with a smaller diameter (such as 0.005 inches or 0.125mm) since changing the diameter of the via will result in little change in inductance.

Circuit Board Layout Recommendations for Suppression of ESD.

Good circuit board layout is critical for the suppression of ESD induced transients. The following guidelines are recommended:

- Place the TVS near the input terminals or connectors to restrict transient coupling.
- Minimize the path length between the TVS and the protected line.
- Minimize all conductive loops including power and ground loops.
- The ESD transient return path to ground should be kept as short as possible.
- Never run critical signals near board edges.
- Use ground planes whenever possible.

Figure 1 - Circuit Diagram (Eight Each)

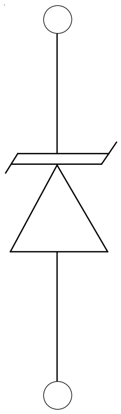
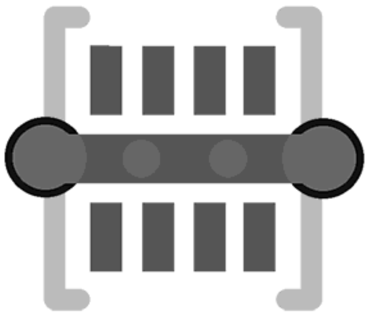
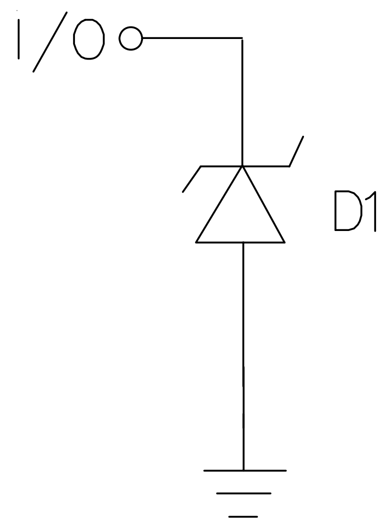


Figure 2 - Recommended Layout using Ground Vias



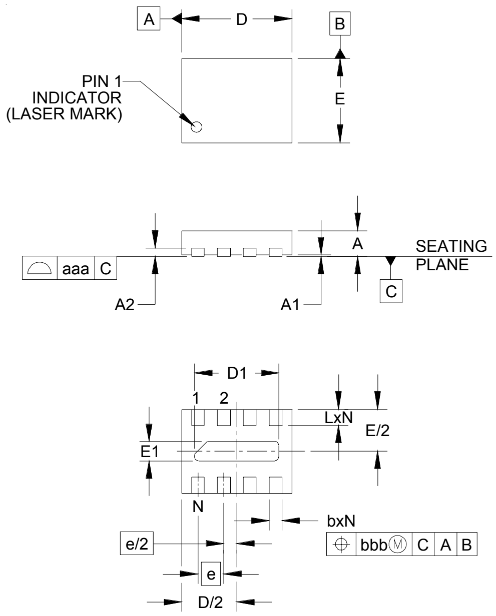
Applications Information - Spice Model



uClamp0508T Spice Model

uClamp0508T Spice Parameters		
Parameter	**Unit**	**D1 (TVS)**
IS	Amp	2.05e-15
BV	Volt	7.0
VJ	Volt	0.80
RS	Ohm	0.75
IBV	Amp	1.0E-3
CJO	Farad	9e-12
TT	sec	2.541E-9
M	--	0.25
N	--	1.1
EG	eV	1.11

Outline Drawing - SLP1713P8T

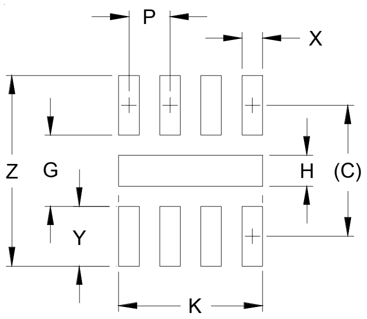


DIM	DIMENSIONS					
	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.015	.016	.017	0.37	0.40	0.43
A1	.000	.001	.002	0.00	0.02	0.05
A2		(.005)			(0.13)	
b	.006	.008	.010	0.15	0.20	0.25
D	.065	.067	.070	1.65	1.70	1.78
D1	.047	.051	.055	1.20	1.30	1.40
E	.049	.051	.054	1.25	1.30	1.38
E1	.008	.012	.016	0.20	0.30	0.40
e		.016 BSC			0.40 BSC	
L	.008	.010	.012	0.20	0.25	0.30
N		8			8	
aaa		.003			0.08	
bbb		.004			0.10	

NOTES:

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

Land Pattern - SLP1713P8T

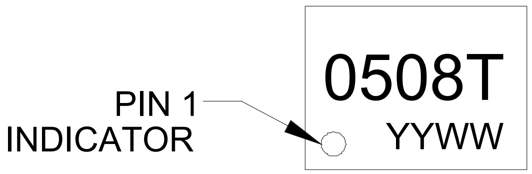


DIMENSIONS		
DIM	INCHES	MILLIMETERS
C	(.050)	(1.27)
G	.027	0.69
H	.012	0.30
K	.055	1.40
P	.016	0.40
X	.008	0.20
Y	.023	0.58
Z	.073	1.85

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.

Marking Code



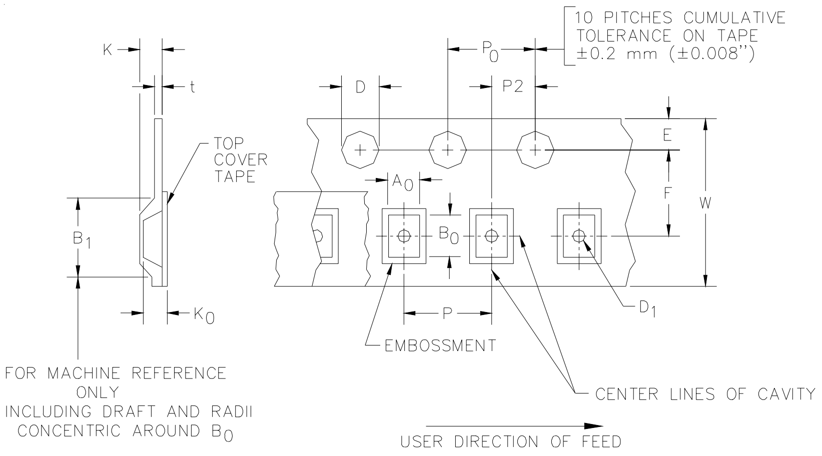
Note: YYWW = Date Code

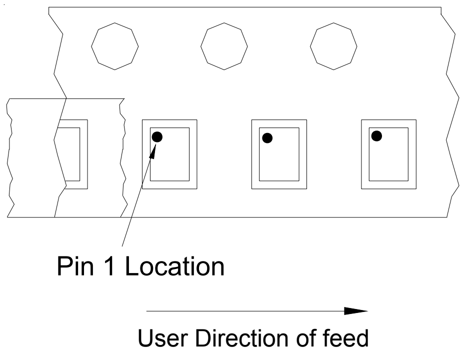
Ordering Information

Part Number	Working Voltage	Qty per Reel	Reel Size
uClamp0508T.TCT	5V	3,000	7 Inch

Notes:
1) This is a lead-free, RoHS/WEEE compliant product
MicroClamp, uClamp and μClamp are marks of Semtech Corporation

Tape and Reel Specification





Device Orientation in Tape

A0	B0	K0
1.51 +/-0.10 mm	1.91 +/-0.10 mm	0.66 +/-0.10 mm

Tape Width	B, (Max)	D	D1	E	F	K (MAX)	P	P0	P2	T(MAX)	W
8 mm	4.2 mm (.165)	1.5 + 0.1 mm - 0.0 mm (0.59 +.005 - .000)	0.8 mm ±0.05 (.031)	1.750±.10 mm (.069±.004)	3.5±0.05 mm (.138±.002)	2.4 mm (.094)	4.0±0.1 mm (.157±.004)	4.0±0.1 mm (.157±.004)	2.0±0.05mm (.079±.002)	0.4 mm (.016)	8.0 mm + 0.3 mm - 0.1 mm (.312±.012)

Contact Information

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