

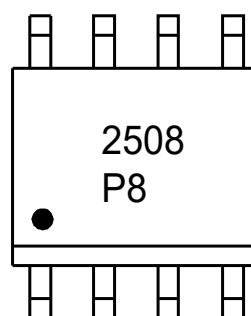
## Description

The DL2508P8 is a low capacitance high power TVS, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The DL2508P8 complies with the IEC 61000-4-2 (ESD) standard with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  contact discharge. It is assembled into a 8-pin SOP-8 lead-free package. Each device will protect two line pairs high-speed lines. The combination of small size, low capacitance, and high surge capability makes them ideal for use in applications such as Gigabit Ethernet, telecommunication lines, and LVDS interfaces.

## Features

- ◆ Low capacitance: 3pF typical
- ◆ Ultra low leakage: nA level
- ◆ Operating voltage: 2.5V
- ◆ Ultra low clamping voltage
- ◆ Protects up to eight lines
- ◆ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 30\text{kV}$
    - Contact discharge:  $\pm 30\text{kV}$
  - IEC 61000-4-5 (Lightning) 49A (8/20 $\mu\text{s}$ )
- ◆ RoHS Compliant

## Marking Information



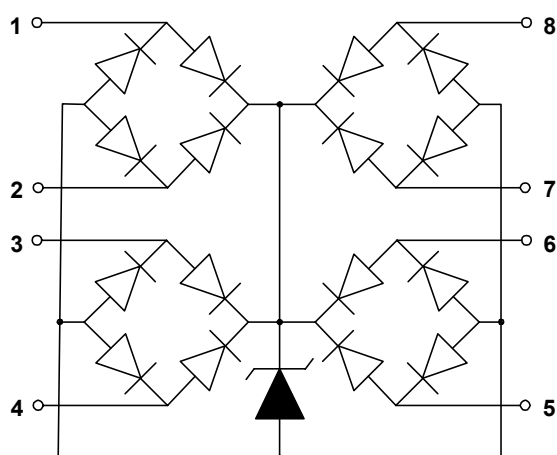
2508 P8= Device Marking Code

Dot denotes pin1

## Mechanical Characteristics

- ◆ Package: SOP-8
- ◆ Case Material: "Green" Molding Compound.
- ◆ Moisture Sensitivity: Level 3 per J-STD-020
- ◆ Terminal Connections: See Diagram Below
- ◆ Marking Information: See Below

## Dimensions and Pin Configuration



## Applications

- ◆ LVDS Interfaces
- ◆ 10/100/1000 Ethernet
- ◆ Notebooks, Desktops, Servers
- ◆ Networking Equipment
- ◆ Switching Systems
- ◆ Audio/Video Inputs

## Ordering Information

Part Number	Marking	Packaging	Reel Size
DL2508P8	2508 P8	2500/Tape & Reel	13 inch

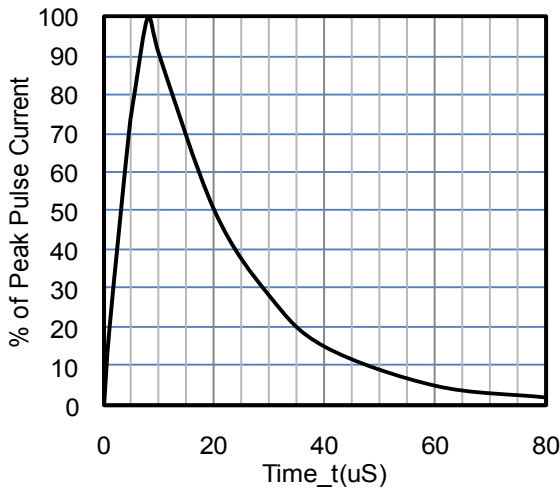
### **Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power(8/20 $\mu\text{s}$ )	Ppk	1225	W
Peak Pulse Current(8/20 $\mu\text{s}$ )	Ipp	49	A
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

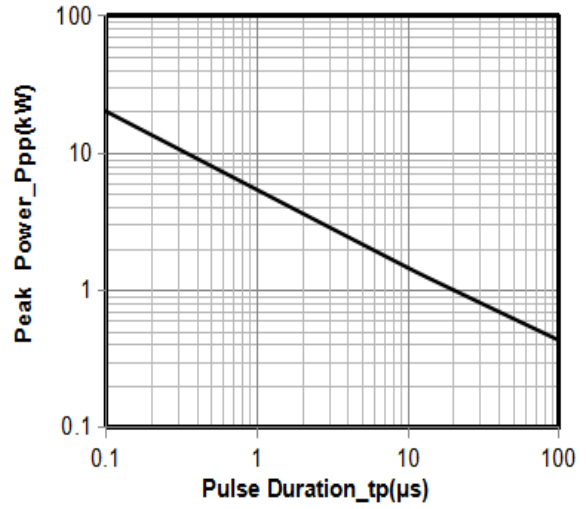
### **Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			2.5	V	
Punch-Through Voltage	VPT	3.0			V	IT = 2 $\mu\text{A}$
Snap-Back Voltage	VSB	3.0			V	ISB = 50mA
Reverse Leakage Current	IR			0.1	$\mu\text{A}$	VRWM = 2.5V
Clamping Voltage	VC			7	V	I <sub>PP</sub> = 1A (8 x 20 $\mu\text{s}$ pulse), I/O to I/O
Clamping Voltage	VC			13	V	I <sub>PP</sub> = 10A (8 x 20 $\mu\text{s}$ pulse), I/O to I/O
Clamping Voltage	VC			24	V	I <sub>PP</sub> = 25A (8 x 20 $\mu\text{s}$ pulse), I/O to I/O
Clamping Voltage	VC			25	V	I <sub>PP</sub> = 49A (8 x 20 $\mu\text{s}$ pulse), line to line ( two I/O pins connected to-gether on each line)
Junction Capacitance	CJ			3.0	pF	VR = 0V, f = 1MHz, between I/O pins
Junction Capacitance	CJ			3.0	pF	VR = 0V, f = 1MHz, any line to line

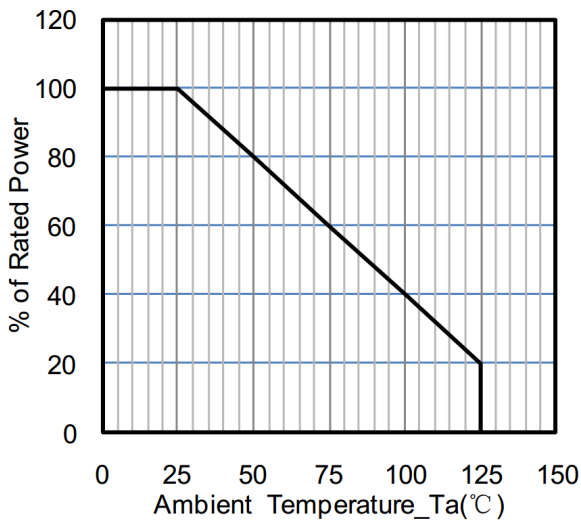
**Typical Performance Characteristics (TA=25°C unless otherwise Specified)**



8 X 20 s Pulse Waveform

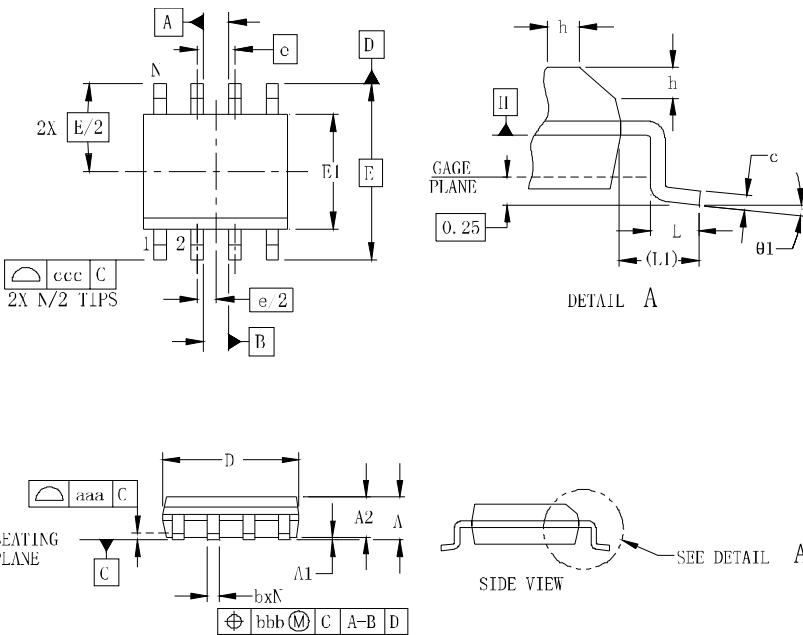


Peak Pulse Power vs. Pulse Time



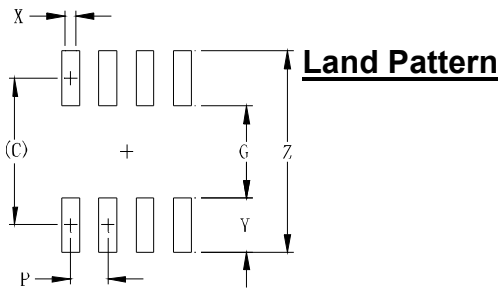
Power Derating Curve

## SO-8 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.35		1.75	0.053		0.069
A1	0.10		0.25	0.004		0.010
A2	1.25		1.65	0.049		0.065
b	0.31		0.51	0.012		0.020
c	0.17		0.25	0.007		0.010
D	4.80	4.90	5.00	0.189	0.193	0.197
E1	3.80	3.90	4.00	0.150	0.154	0.157
E	6.00 BSC			0.236 BSC		
e	1.27 BSC			0.050 BSC		
h	0.25		0.50	0.010		0.020
L	0.40	0.72	1.04	0.016	0.028	0.041
L1	(1.04)			(0.041)		
N	8			8		
$\theta 1$	0°		8°	0°		8°
aaa	0.10			0.004		
bbb	0.25			0.010		
ccc	0.20			0.008		

### Suggested



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	(5.20)	0.205
G	3.00	0.118
P	1.27	0.050
X	0.60	0.024
Y	2.20	0.087
Z	7.40	0.291

## Contact Information

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