Description

The DL0522S3 is a Bi-directional TVS diode array, utiliz-ing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting sensitive semi-conductor components from damage. The DL0522S3 complies with the IEC 61000-4-2 (ESD) with ±15kV air and ±8kV contact discharge. It is assembled into a lead-free SOT-323 package. It is designed to protect components which are connected to data and transmission lines from voltage surges.

Applications

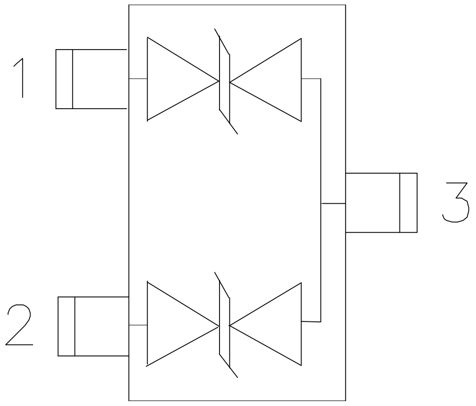
- Cellular Handsets and Accessories
- Notebooks and Handhelds
- Portable Instrumentation
- Set Top Box
- Industrial Controls
- Server and Desktop PC

Mechanical Characteristics

- Package: SOT-323
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below

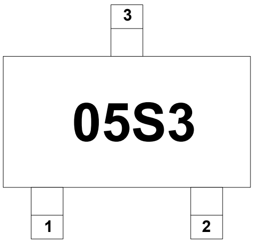
- Protects two Bi-directional lines
- Ultra low leakage: nA level
- Operating voltage: 5V
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±15kV
    Contact discharge: ±8kV
  - IEC61000-4-5 (Lightning) 2A (8/20μs)
- RoHS Compliant

Dimensions and Pin Configuration



Circuit and Pin Schematic

Marking Information



05S3= Device Marking Code

Ordering Information

Part Number	Marking	Packaging	Reel Size
DL0522S3	05S3	3000/Tape & Reel	7 inch

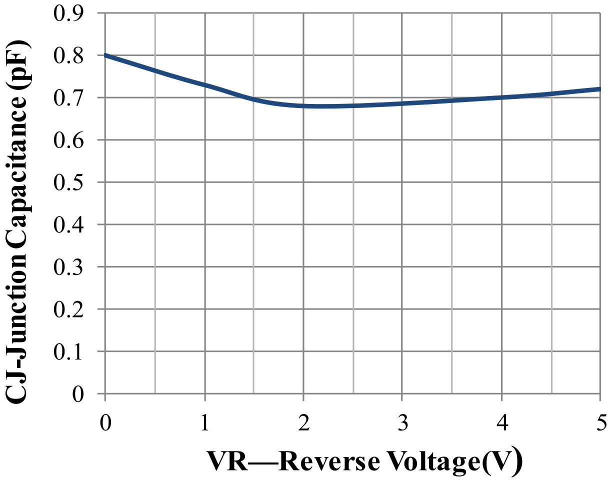
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	**Symbol**	**Value**	**Unit**
Peak Pulse Power (8/20μs)	Ppk	40	W
Peak Pulse Current (8/20μs)	I_{PP}	2	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±15 ±8	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

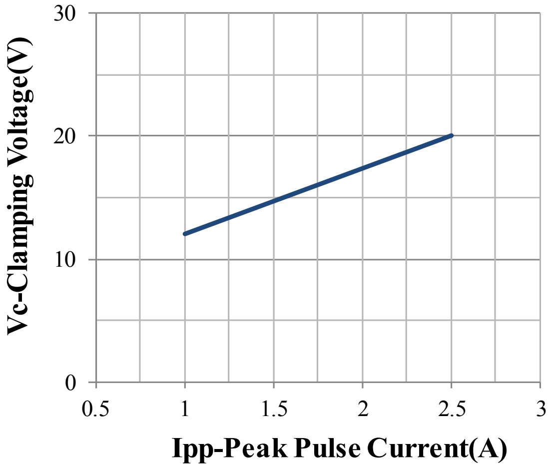
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**	**Test Condition**
Reverse Working Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	6			V	I_T = 1mA
Reverse Leakage Current	I_R			0.2	μA	V_{RWM} = 5V
Clamping Voltage	V_C			12	V	I_{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V_C			20	V	I_{PP} = 2A (8 x 20μs pulse)
Junction Capacitance	C_J		0.8	0.9	pF	VR = 0V, f = 1MHz, Pin 1 to Pin 3 or Pin 2 to Pin 3
Junction Capacitance	C_J		0.4	0.5	pF	VR = 0V, f = 1MHz, Pin 1 to Pin 2

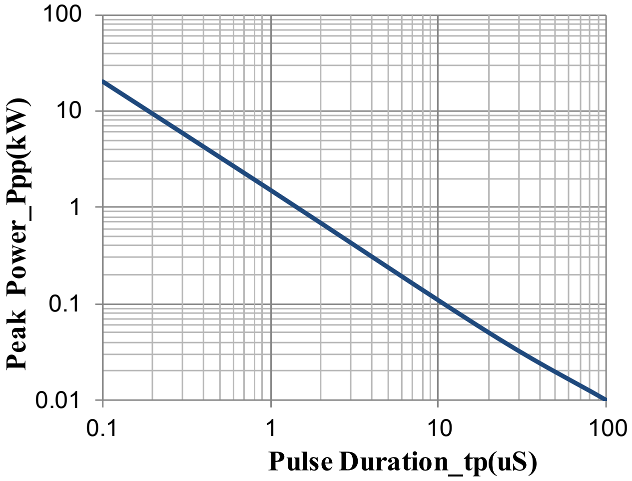
Typical Performance Characteristics (TA=25℃ unless otherwise Specified)



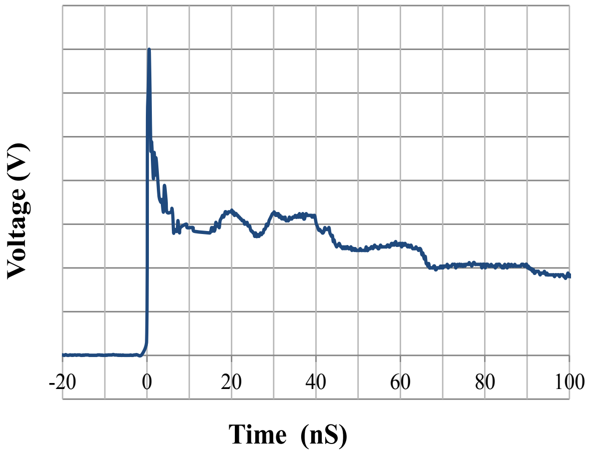
Junction Capacitance vs. Reverse Voltage



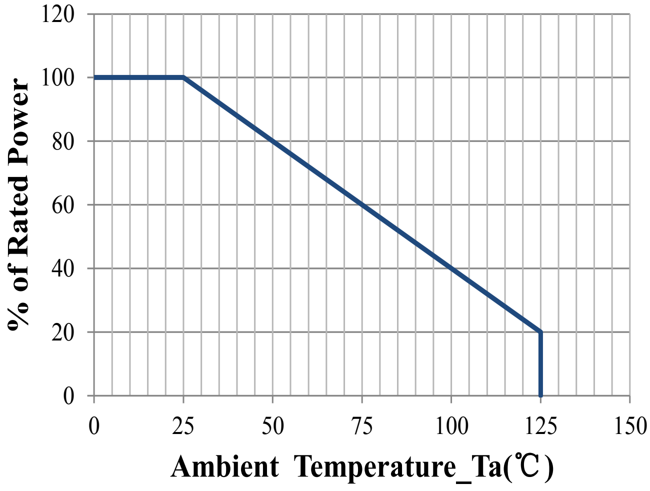
Clamping Voltage vs. Peak Pulse Current



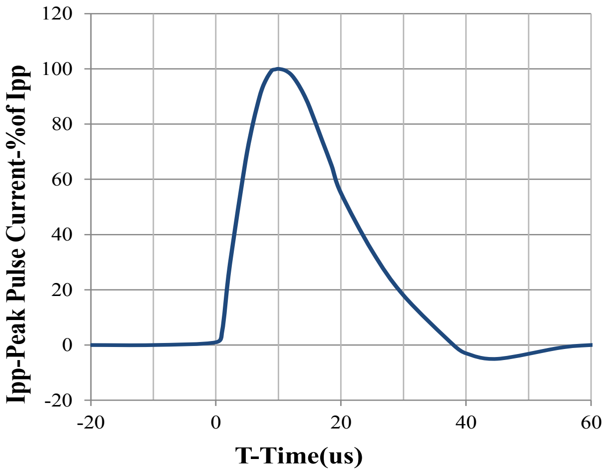
Peak Pulse Power vs. Pulse Time



IEC61000−4−2 Pulse Waveform

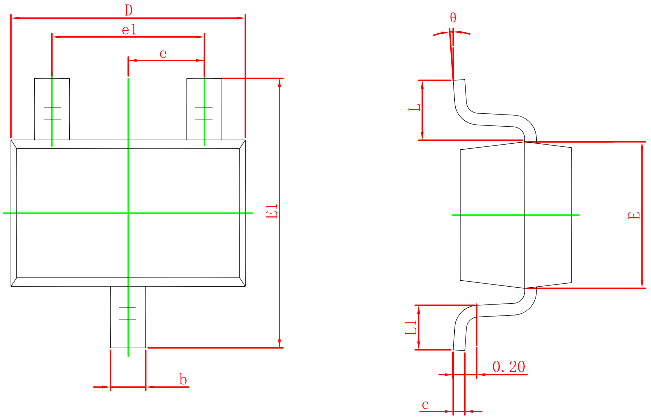


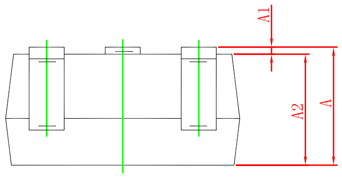
Power Derating Curve



8 X 20us Pulse Waveform

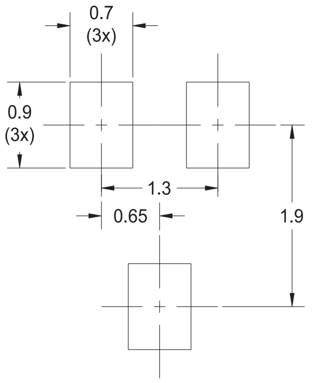
SOT-323 Package Outline Drawing





Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP.		0.026 TYP.	
e1	1.200	1.400	0.047	0.055
L	0.525 REF.		0.021 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Suggested Land Pattern



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