

## Description

The DCSMS03-5L are monolithic voltage suppressors designed to protect components which are connected to data and transmission lines against ESD.

These devices will also provide protection in accordance with IEC 61000-4-2 and IEC 61000-4-4 requirements. These devices are available in a SOT23-5L package configuration and is rated at 300W peak pulse power(8/20µs) per line.

## Features

- ◆ 4 unidirectional ESD protection
- ◆ Low operating voltage: 3.3V
- ◆ 300 W peak pulse power (8/20 µs)
- ◆ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30kV
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) : 27A(8/20µs)
- ◆ ROHS Compliant

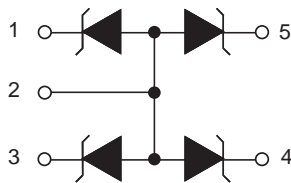
## Mechanical Characteristics

- ◆ Package: SOT23-5L
- ◆ UL Flammability Classification Rating 94V-0
- ◆ Case Material: “Green” Molding Compound
- ◆ Moisture Sensitivity: Level 3 per J-STD-020
- ◆ Terminal Connections: See Diagram Below
- ◆ Marking Information: See Below

## Applications

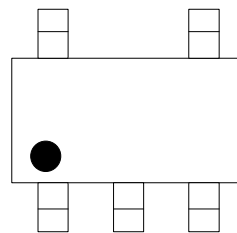
- ◆ Computers
- ◆ Printers
- ◆ Communication systems
- ◆ Cellular phone handsets and accessories
- ◆ Other telephone set
- ◆ Set top boxes

## Dimensions and Pin Configuration



Circuit and Pin Schematic

## Marking Information



Dot denotes Pin1

## Ordering Information

Part Number	Marking	Packaging	Reel Size
DCSMS03-5L		3000/Tape & Reel	7 inch

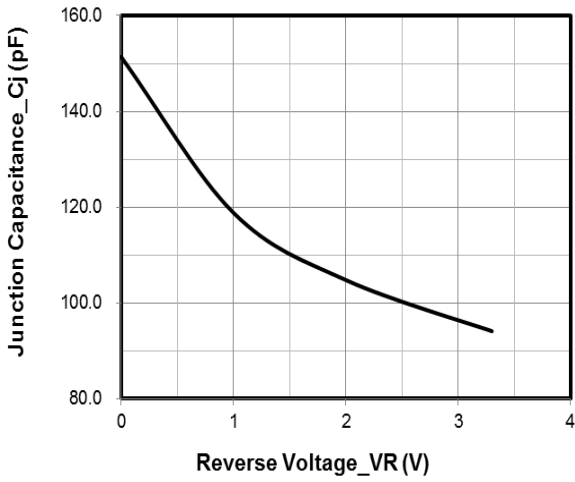
### Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs)	PPP	300	W
Peak Pulse Current (tp=8/20μs)	I <sub>PP</sub>	27	A
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	±30	kV
ESD per IEC 61000-4-2 (Contact)		±30	
Operating Temperature Range	T <sub>J</sub>	-55 to +125	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C

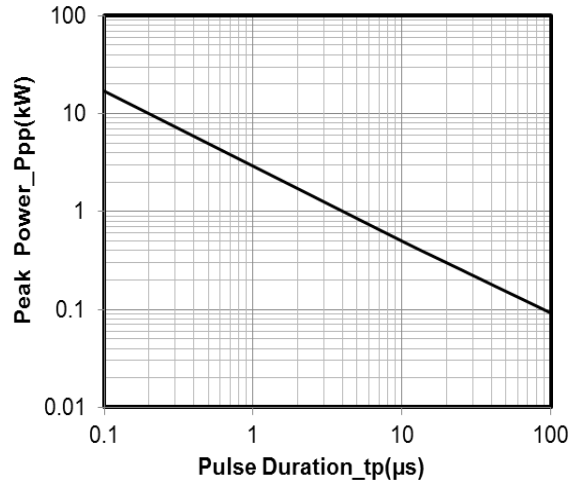
### Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			3.3	V	
Breakdown Voltage	V <sub>BR</sub>	4.8		6	V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>			0.5	μA	V <sub>RWM</sub> = 3.3V
Clamping Voltage	V <sub>C</sub>			7	V	I <sub>PP</sub> = 1A (8 x 20μs pulse) any I/O pin to ground
Clamping Voltage	V <sub>C</sub>			11	V	I <sub>PP</sub> = 27A (8 x 20μs pulse) any I/O pin to ground
Forward Voltage	V <sub>F</sub>		0.8	1.2	V	I <sub>F</sub> = 10mA
Junction Capacitance	C <sub>J</sub>		75		pF	V <sub>R</sub> = 0V, f = 1MHz, between I/O pins
Junction Capacitance	C <sub>J</sub>		150		pF	V <sub>R</sub> = 0V, f = 1MHz, any I/O pin to ground

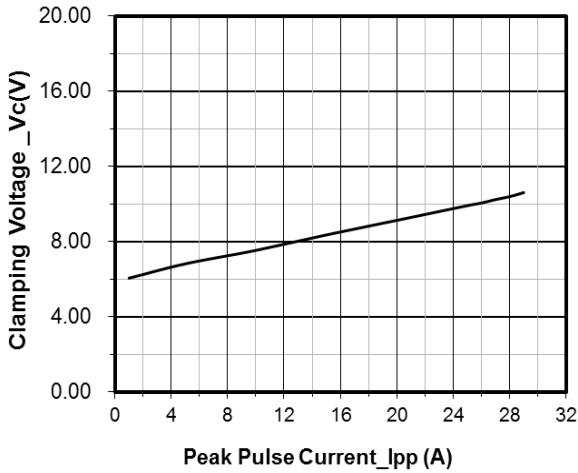
**Typical Performance Characteristics (TA=25°C unless otherwise Specified)**



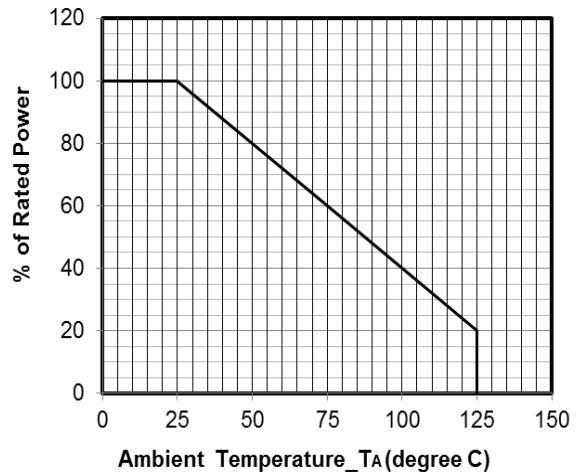
**Junction Capacitance vs. Reverse Voltage**



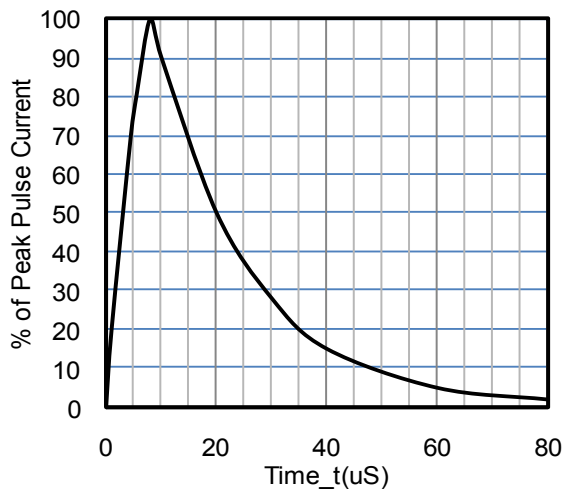
**Peak Pulse Power vs. Pulse Time**



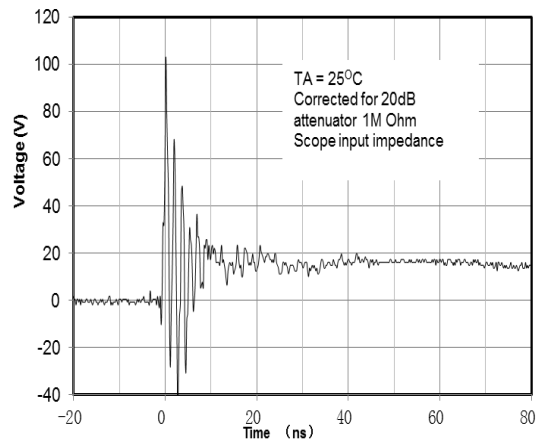
**Clamping Voltage vs. Peak Pulse Current**



**Power Derating Curve**



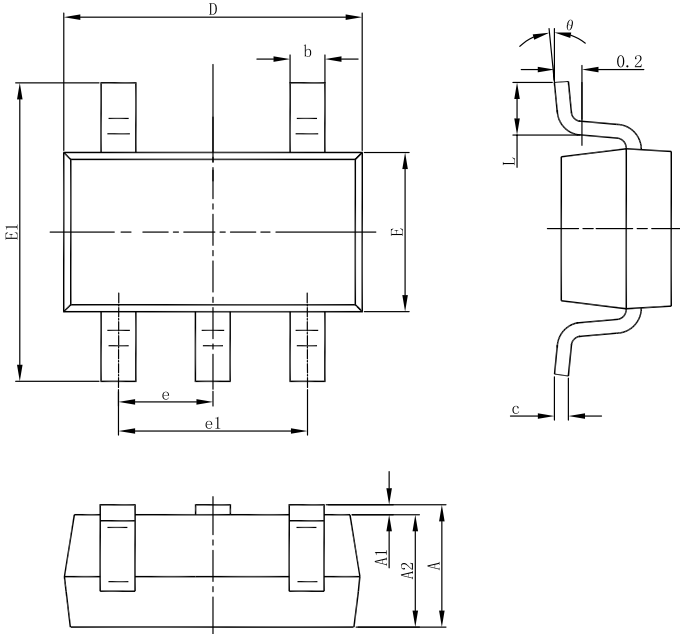
**8 X 20μs Pulse Waveform**



**ESD Clamping Voltage**

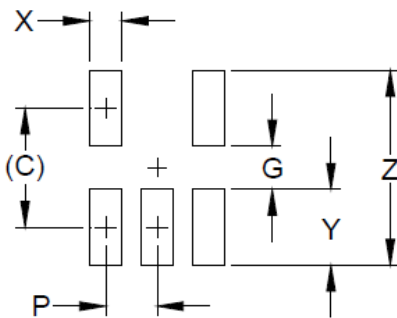
**8 kV Contact per IEC61000-4-2**

## SOT23-5L Package Outline Drawing



Symbol	Dimensions			
	Millimeters		Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

## Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	2.50	0.098
G	1.40	0.055
P	0.95	0.037
X	0.60	0.024
Y	1.10	0.043
Z	3.60	0.141

## Contact Information

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