

Description

The DC0505S6 is a TVS array, utilizing leading monolithic silicon technology to provide fast response time and ultra low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive portable electronics. The DC0505S6 complies with the IEC61000-4-2(ESD) standard with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into a 6-lead SOT-563 lead-free package. The leads are finished with lead-free matte tin. Each device will protect up to 5 lines.

Features

- ◆ Protects up to 5 lines
- ◆ Low leakage: nA level
- ◆ Low clamping voltage
- ◆ Excellent surge protection(100W at 8/20 μs)
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-5 (Lightning) 8A (8/20 μs)
- ◆ RoHS Compliant

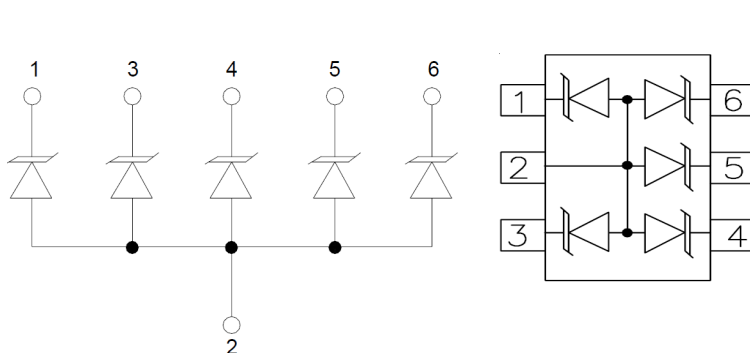
Mechanical Characteristics

- ◆ Package: SOT-563
- ◆ Lead Finish: Matte Tin
- ◆ Case Material: “Green” Molding Compound.
- ◆ Moisture Sensitivity: Level 3 per J-STD-020
- ◆ Terminal Connections: See Diagram Below
- ◆ Marking Information: See Below

Applications

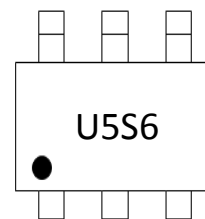
- ◆ Microprocessor Based Equipment
- ◆ Cell Phone Handsets and Accessories
- ◆ Set Top Box
- ◆ Desktops PC, Laptops and Servers
- ◆ Printers
- ◆ Peripherals
- ◆ Audio Players

Dimensions and Pin Configuration



Circuit and Pin Schematic

Marking Information



U5S6 = Device Marking Code
Dot indicates pin1

Ordering Information

Part Number	Marking	Packaging	Reel Size
DC0505S6	U5S6	3000/Tape & Reel	7 inch

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

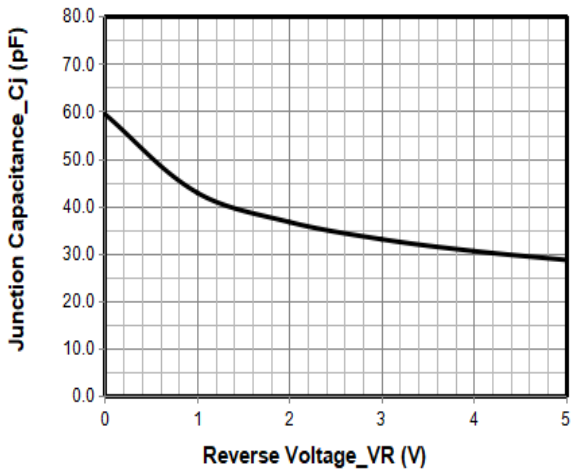
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	100	W
Peak Pulse Current (8/20 μs)	I _{PP}	8	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	T _J	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T _{stg}	-55 to +150	$^{\circ}\text{C}$

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

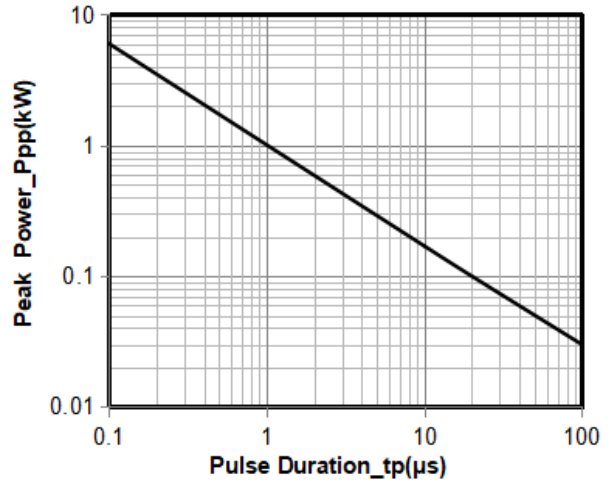
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			5	V	Any I/O Pin to ground
Breakdown Voltage	V _{BR}	6	7.2	8.5	V	I _T = 1mA, any I/O Pin to ground
Reverse Leakage Current	I _R			0.2	μA	V _{RWM} = 5V, any I/O Pin to ground
Forward Voltage	V _F		0.8	1.2	V	I _F = 15mA, ground to Pin 1,3,4,5,6
Clamping Voltage	V _C		7.7	8	V	I _{PP} = 1A (8 x 20 μs pulse), any I/O pin to ground
Clamping Voltage	V _C		10.5	12	V	I _{PP} = 8A (8 x 20 μs pulse), any I/O pin to ground
Junction Capacitance	C _J		60	80	pF	V _R = 0V, f = 1MHz, any I/O pin to ground

Note 1: I/O pins are Pin 1, 3, 4, 5, 6

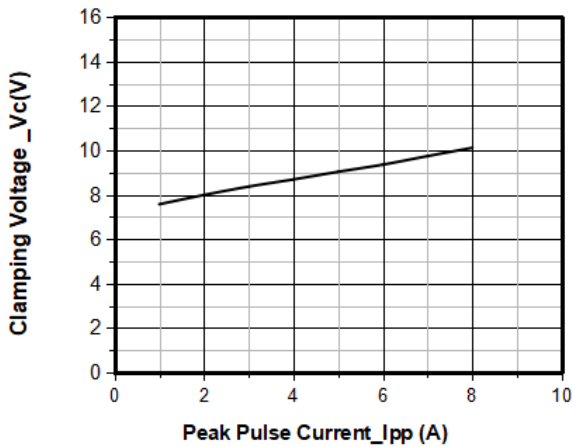
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



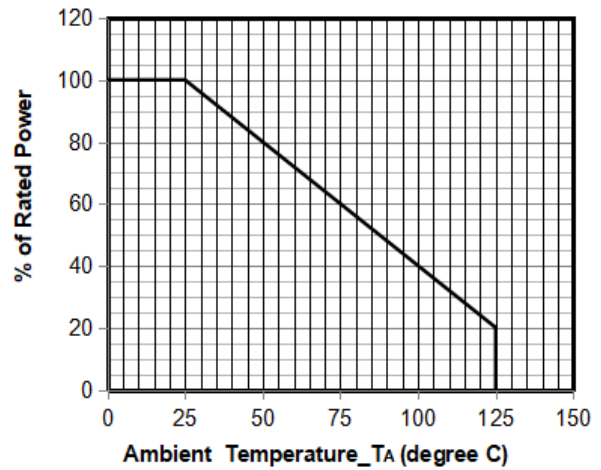
Junction Capacitance vs. Reverse Voltage



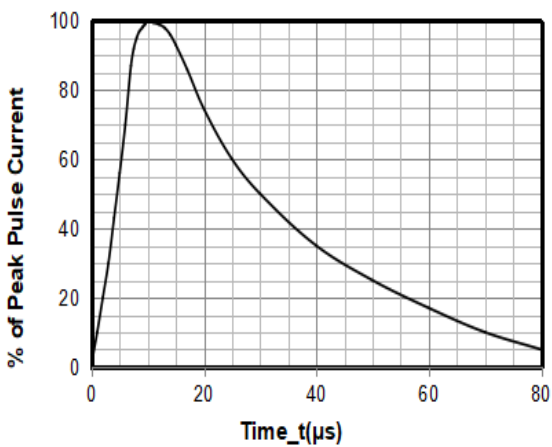
Peak Pulse Power vs. Pulse Time



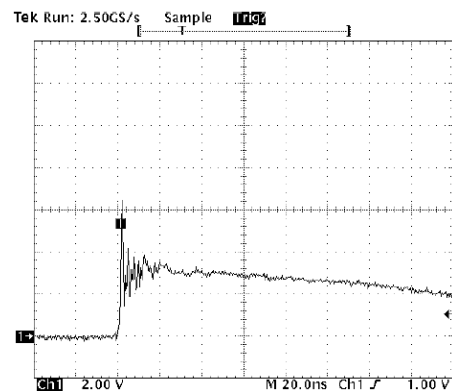
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform

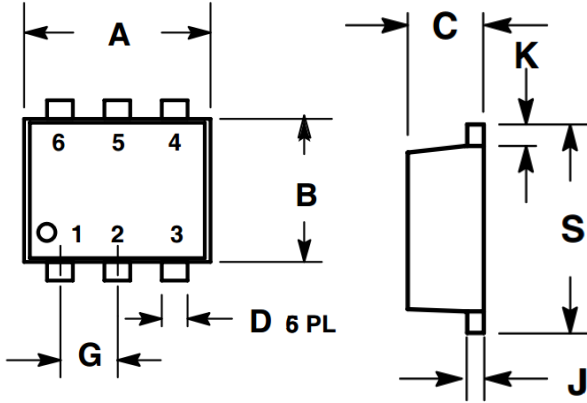


Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

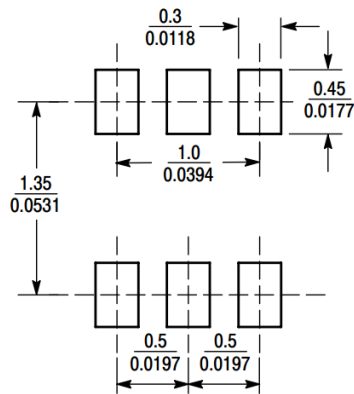
8 kV Contact per IEC61000-4-2

SOT-563 Package Outline Drawing



SYM	DIMENSIONS			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.50	1.70	0.059	0.067
B	1.10	1.30	0.043	0.051
C	0.50	0.60	0.020	0.024
D	0.17	0.27	0.007	0.011
G	0.50 BSC		0.020 BSC	
J	0.08	0.18	0.003	0.007
K	0.10	0.30	0.004	0.012
S	1.50	1.70	0.059	0.067

Suggested Land Patter



Unit: (mm)

Contact Information

Changzhou D-first Electronics CO.,Ltd.

www.first-electronic.com

Email: xhf@first-electronic.cn

Phone: +86 (0519) 8817 1671