


## Features

- Provides ESD Protection per IEC 61000-4-2 Standard:  
Air – ±16kV, Contact – ±9kV
- 2 Channels of ESD Protection
- 300 W Peak Pulse Power
- Typically Used at Computers, Printers and Communication Systems
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

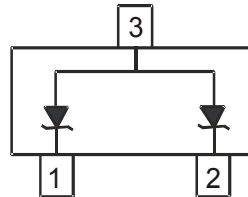
## Mechanical Data

- Case: SOT23
- Case Material: Molded Plastic, "Green" Molding Compound.  
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe  
(Lead Free Plating). Solderable per MIL-STD-202, Method 208 
- Weight: 0.0089 grams (approximate)

SOT23



Top View



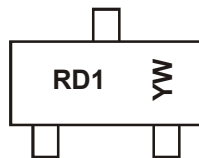
Device Schematic

## Ordering Information (Note 4)

Part Number	Case	Packaging
DESDA5V3L-7	SOT23	3000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See <http://www.diodes.com> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <http://www.diodes.com>.

## Marking Information



RD1 = Product Type Marking Code  
YM = Date Code Marking  
Y = Year (ex: Z = 2012)  
M = Month (ex: 9 = September)

### Date Code Key

Year	2012	2013	2014	2015	2016	2017	2018
Code	Z	A	B	C	D	E	F

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P <sub>PP</sub>	300	W	8/20μs, Fig 2
Peak Pulse Current	I <sub>PP</sub>	20	A	8/20μs, Fig 2
ESD Protection – Contact Discharge	V <sub>ESD_Contact</sub>	±9	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	V <sub>ESD_Air</sub>	±16	kV	Standard IEC 61000-4-2
ESD Protection – Human Body Model	V <sub>HBM</sub>	±25	kV	MIL STD 883C – Method 3015-6

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	250	mW
Thermal Resistance, Junction to Ambient (Note 5)	R <sub>θJA</sub>	500	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Breakdown Voltage	V <sub>BR</sub>	5.3	–	5.9	V	I <sub>R</sub> = 1mA
Reverse Current (Note 6)	I <sub>RM</sub>	–	–	2	μA	V <sub>RM</sub> = 3V
Forward Voltage	V <sub>F</sub>	–	–	1.25	V	I <sub>F</sub> = 200mA
Dynamic Resistance	R <sub>D</sub>	–	0.28	–	Ω	I <sub>pp</sub> = 15A, t <sub>p</sub> = 2.5μs
Channel Input Capacitance	C <sub>IN</sub>	–	–	220	pF	V <sub>IN</sub> = 0V, f = 1MHz

- Notes:
- 5. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes, Inc. suggested pad layout AP02001, which can be found on our website at <http://www.diodes.com>.
  - 6. Short duration pulse test used to minimize self-heating effect.

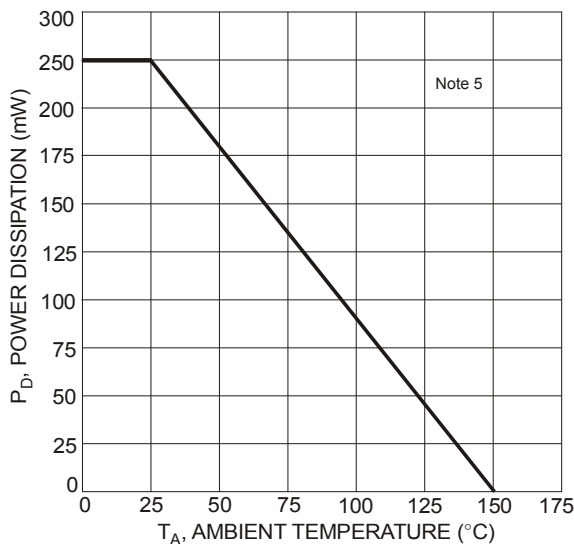


Figure 1 Power Derating Curve

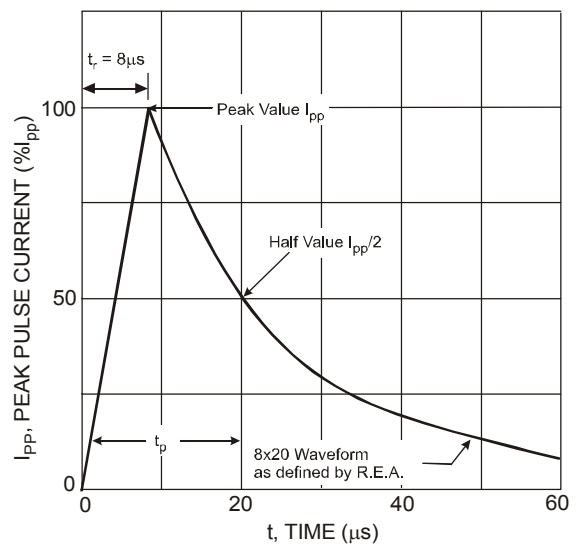


Figure 2 Typical 8 x 20μs Pulse Waveform

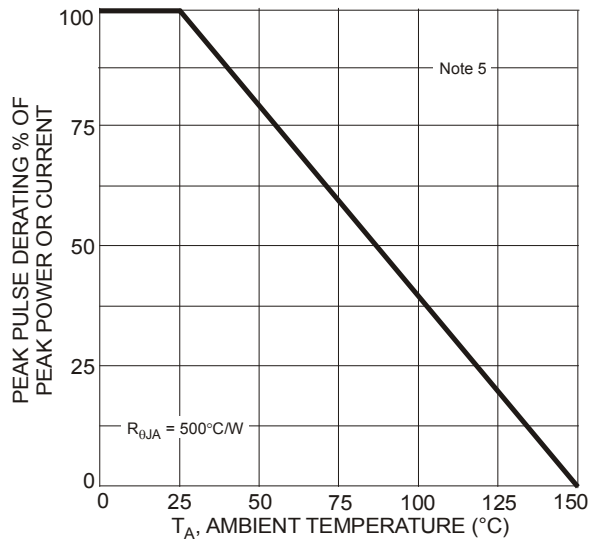


Figure 3 Power Dissipation vs. Ambient Temperature

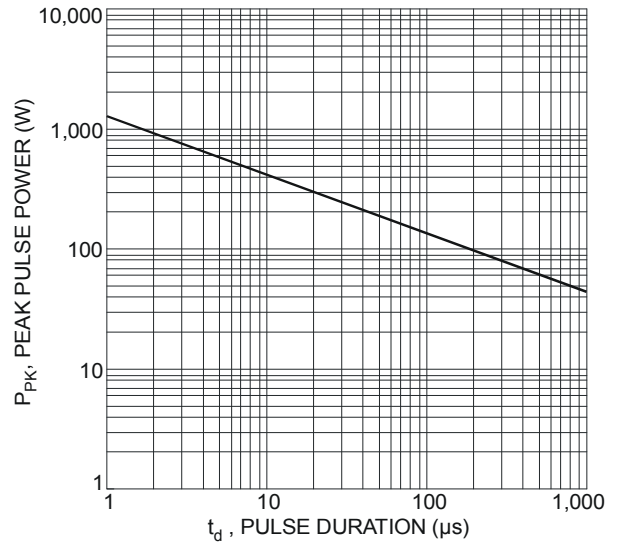


Figure 4 Max. Peak Pulse Power vs. Pulse Duration

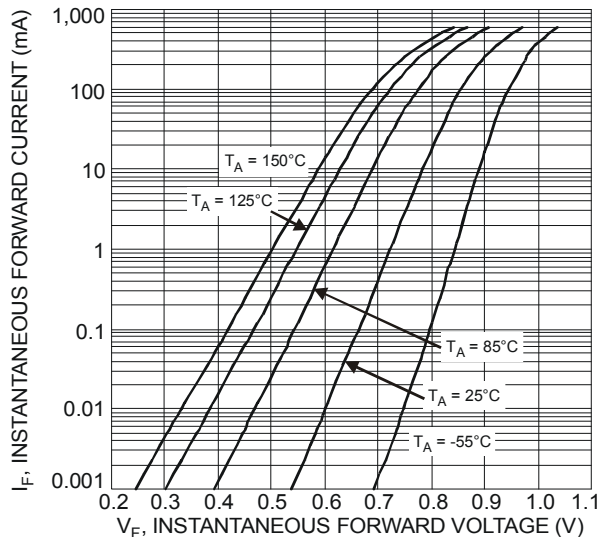


Figure 5 Typical Forward Characteristics

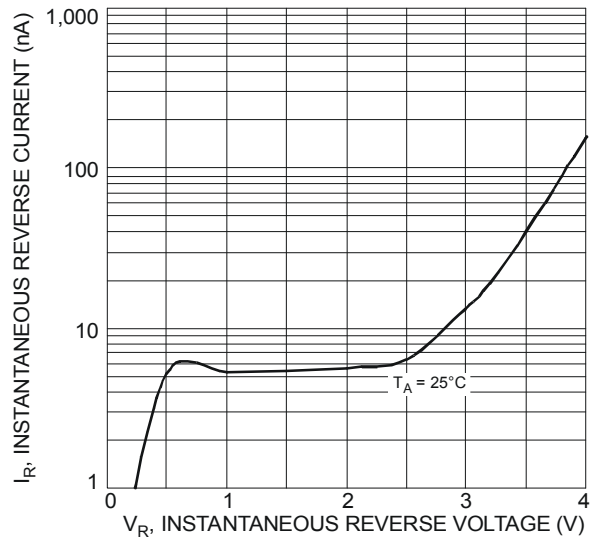


Figure 6 Typical Reverse Characteristics

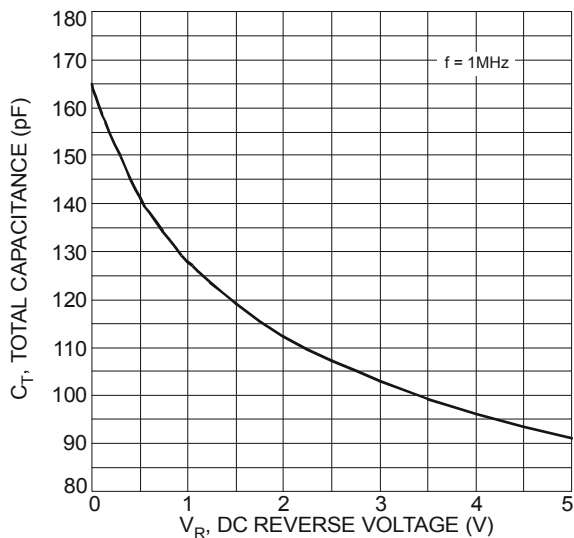
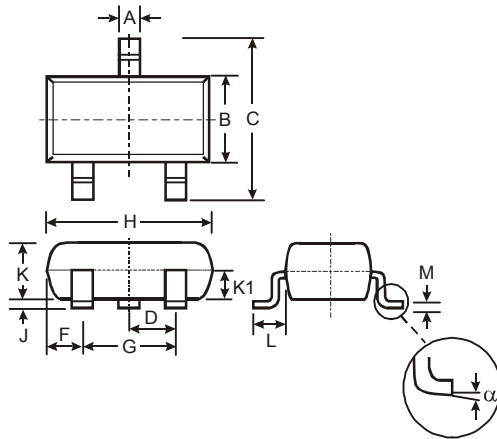


Figure 7 Total Capacitance vs. Reverse Voltage

**Package Outline Dimensions**

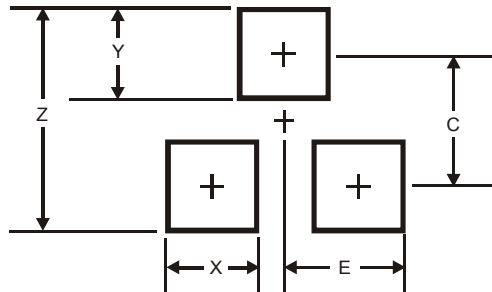
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.903	1.10	1.00
K1	-	-	0.400
L	0.45	0.61	0.55
M	0.085	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

**Suggested Pad Layout**

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

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