

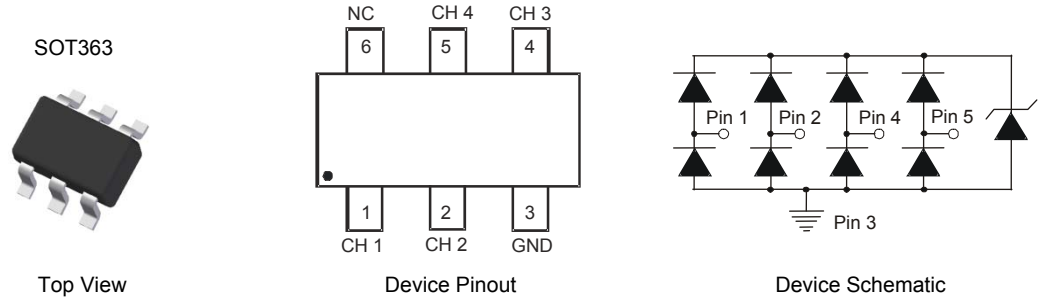
**4 CHANNEL LOW CAPACITANCE TVS DIODE ARRAY**

**Features**

- IEC 61000-4-2 (ESD): Air ±20kV, Contact ±18kV
- 4 Channels of ESD Protection
- Low Channel Input Capacitance of 0.65pF Typical
- Typically Used at High Speed Ports such as USB 2.0, IEEE1394, Serial ATA, DVI, HDMI, PCI
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

**Mechanical Data**

- Case: SOT363
- 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: 0.006 grams (approximate)

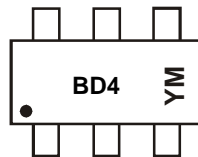


**Ordering Information** (Note 4)

Part Number	Case	Packaging
DT2636-04S-7	SOT363	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/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) 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/products/packages.html>.

**Marking Information**



BD4 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: A = 2013)  
 M = Month (ex: 9 = September)

Date Code Key

Year	2013	2014	2015	2016	2017	2018	2019
Code	A	B	C	D	E	F	G

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 Current	I <sub>PP</sub>	6.5	A	8/20μs, From CH to GND
Peak Pulse Current	I <sub>PP</sub>	6.5	A	8/20μs, From GND to CH
Peak Pulse Power	P <sub>PP</sub>	60	W	8/20μs, From CH to GND
ESD Protection – Contact Discharge	V <sub>ESD_Contact</sub>	±18	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	V <sub>ESD_Air</sub>	±20	kV	Standard IEC 61000-4-2
Operating Temperature	T <sub>OP</sub>	-55 to +85	°C	—
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C	—

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation Typical (Note 5)	P <sub>D</sub>	200	mW
Thermal Resistance, Junction to Ambient Typical (Note 5)	R <sub>θJA</sub>	625	°C/W

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Standoff Voltage	V <sub>RWM</sub>	—	—	5.5	V	—
Channel Leakage Current (Note 6, 7)	I <sub>R</sub>	—	1	10	nA	V <sub>R</sub> = 2.5V
Reverse Breakdown Voltage	V <sub>BR</sub>	7.0	—	9.5	V	I <sub>R</sub> = 1mA, from CH to GND
Clamping Voltage, Positive Transients	V <sub>CL1</sub>	—	6.8	—	V	I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20μs
Clamping Voltage, Positive Transients	V <sub>CL1</sub>	—	9	—	V	I <sub>PP</sub> = 5A, t <sub>p</sub> = 8/20μs
Clamping Voltage, Negative Transients	V <sub>CL2</sub>	—	1.5	—	V	I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20μs
Forward Voltage	V <sub>F</sub>	—	0.7	—	V	I <sub>F</sub> = 1mA, GND to CH
Dynamic Resistance	R <sub>DIFF</sub>	—	0.4	—	Ω	I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20μs, CH to GND
Dynamic Resistance	R <sub>DIFF-R</sub>	—	0.45	—	Ω	TLP, 20A, t <sub>p</sub> = 100 ns, CH to GND
Dynamic Resistance	R <sub>DIFF-F</sub>	—	0.2	—	Ω	TLP, 20A, t <sub>p</sub> = 100 ns, GND to CH
CH to GND Capacitance	C <sub>(CH-GND)</sub>	—	0.75	—	pF	V <sub>(CH-GND)</sub> = 0V, f = 1MHz
		—	0.65	0.9	pF	V <sub>(CH-GND)</sub> = 2.5V, f = 1MHz
Delta C <sub>CH</sub>	C <sub>CHMAX-CCHMIN</sub>	—	0.04	—	pF	C <sub>CHMAX</sub> -C <sub>CHMIN</sub>

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.

7. Measured from pin 1, 2, 4 and 5 to GND.

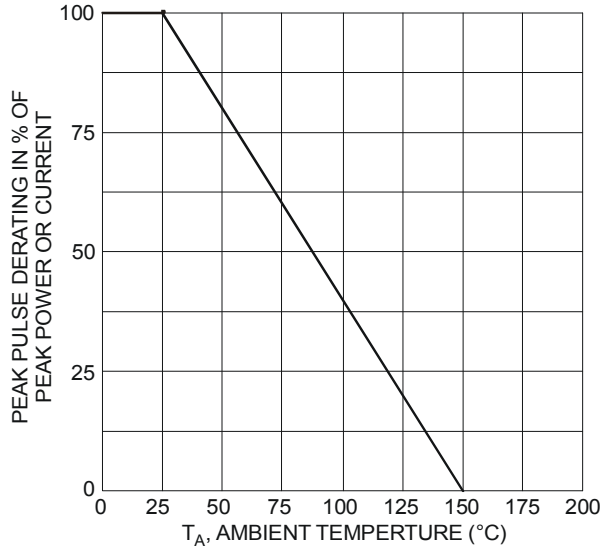


Figure 1 Pulse Derating Curve

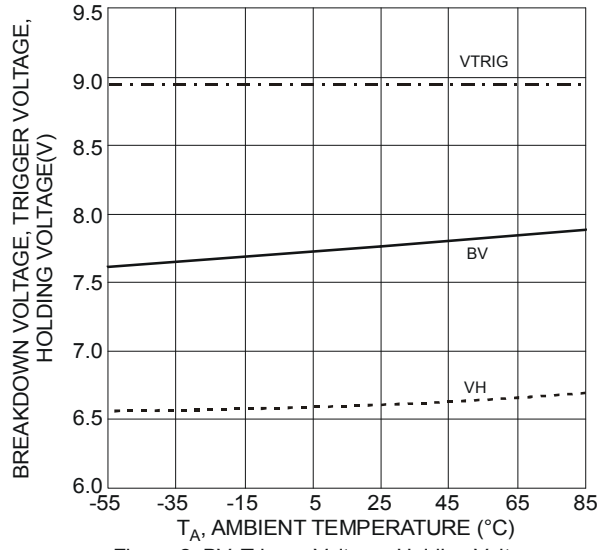


Figure 2 BV, Trigger Voltage, Holding Voltage vs. Ambient Temperature

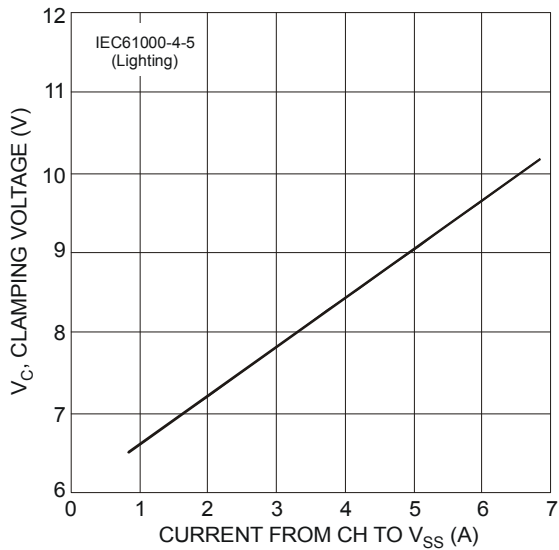


Figure 3 Clamping Voltage Characteristic

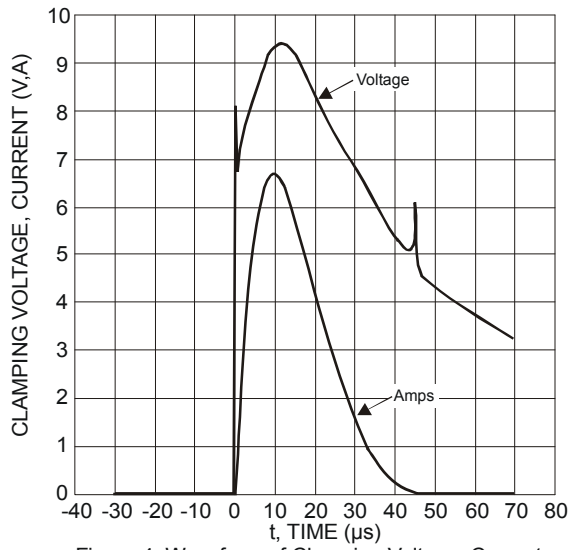


Figure 4 Waveform of Clamping Voltage, Current vs. Time (8/20μs, CH to VSS)

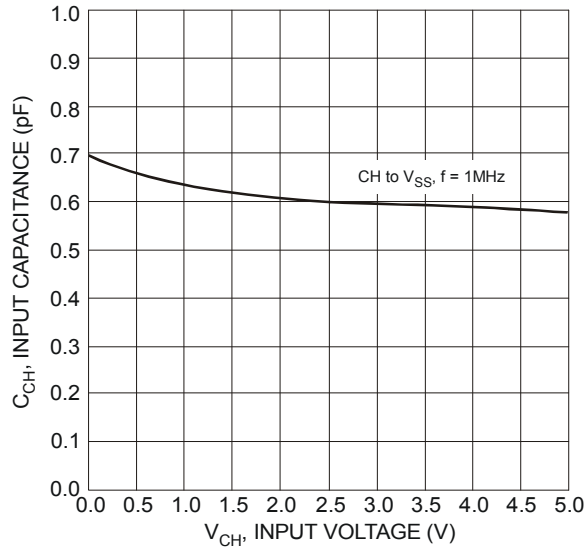


Figure 5 Input Capacitance vs. Input Voltage

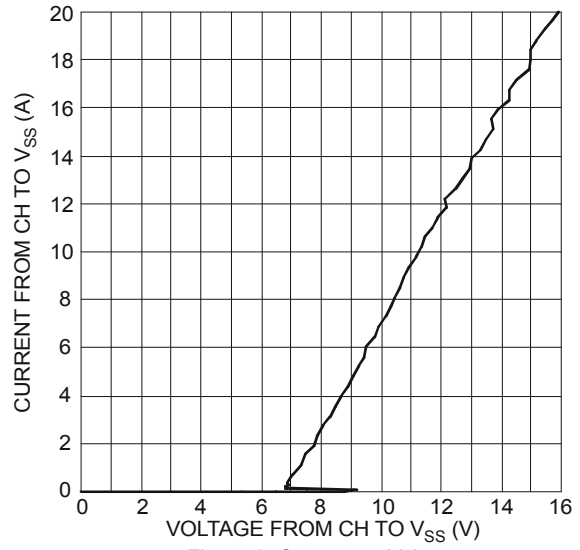
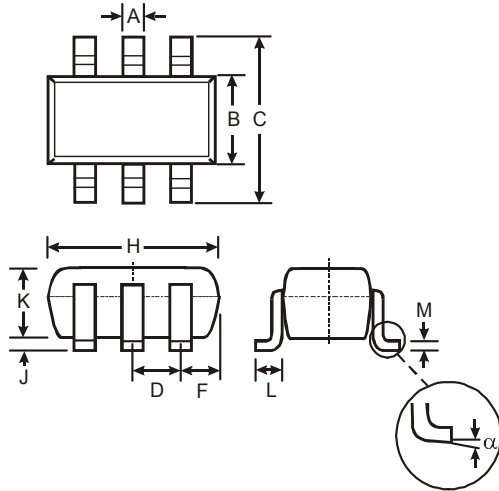


Figure 6 Current vs. Voltage

**Package Outline Dimensions**

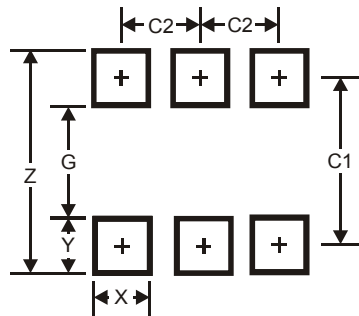
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



SOT363			
Dim	Min	Max	Typ
A	0.10	0.30	0.25
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	0.65 Typ		
F	0.40	0.45	0.425
H	1.80	2.20	2.15
J	0	0.10	0.05
K	0.90	1.00	1.00
L	0.25	0.40	0.30
M	0.10	0.22	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	2.5
G	1.3
X	0.42
Y	0.6
C1	1.9
C2	0.65

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