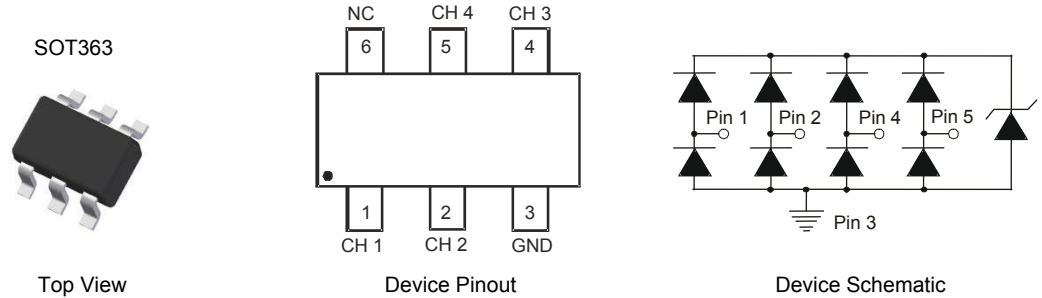


**4 CHANNEL LOW CAPACITANCE TVS DIODE ARRAY**
**Features**

- 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)**

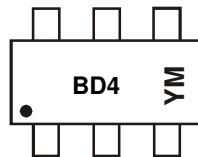
**Mechanical Data**

- 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** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified)

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Current	$I_{PP}$	6.5	A	8/20 $\mu\text{s}$ , From CH to GND
Peak Pulse Current	$I_{PP}$	6.5	A	8/20 $\mu\text{s}$ , From GND to CH
Peak Pulse Power	$P_{PP}$	60	W	8/20 $\mu\text{s}$ , From CH to GND
ESD Protection – Contact Discharge	$V_{ESD\_Contact}$	$\pm 18$	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	$V_{ESD\_Air}$	$\pm 20$	kV	Standard IEC 61000-4-2
Operating Temperature	$T_{OP}$	-55 to +85	$^\circ\text{C}$	—
Storage Temperature	$T_{STG}$	-55 to +150	$^\circ\text{C}$	—

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation Typical (Note 5)	$P_D$	200	mW
Thermal Resistance, Junction to Ambient Typical (Note 5)	$R_{\theta JA}$	625	$^\circ\text{C/W}$

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Standoff Voltage	$V_{RWM}$	—	—	5.5	V	—
Channel Leakage Current (Note 6, 7)	$I_R$	—	1	10	nA	$V_R = 2.5\text{V}$
Reverse Breakdown Voltage	$V_{BR}$	7.0	—	9.5	V	$I_R = 1\text{mA}$ , from CH to GND
Clamping Voltage, Positive Transients	$V_{CL1}$	—	6.8	—	V	$I_{PP} = 1\text{A}$ , $t_p = 8/20\mu\text{s}$
Clamping Voltage, Positive Transients	$V_{CL1}$	—	9	—	V	$I_{PP} = 5\text{A}$ , $t_p = 8/20\mu\text{s}$
Clamping Voltage, Negative Transients	$V_{CL2}$	—	1.5	—	V	$I_{PP} = 1\text{A}$ , $t_p = 8/20\mu\text{s}$
Forward Voltage	$V_F$	—	0.7	—	V	$I_F = 1\text{mA}$ , GND to CH
Dynamic Resistance	$R_{DIFF}$	—	0.4	—	$\Omega$	$I_{PP} = 1\text{A}$ , $t_p = 8/20\mu\text{s}$ , CH to GND
Dynamic Resistance	$R_{DIFF-R}$	—	0.45	—	$\Omega$	TLP, 20A, $t_p = 100\text{ns}$ , CH to GND
Dynamic Resistance	$R_{DIFF-F}$	—	0.2	—	$\Omega$	TLP, 20A, $t_p = 100\text{ns}$ , GND to CH
CH to GND Capacitance	$C_{(CH-GND)}$	—	0.75	—	pF	$V_{(CH-GND)} = 0\text{V}$ , $f = 1\text{MHz}$
		—	0.65	0.9	pF	$V_{(CH-GND)} = 2.5\text{V}$ , $f = 1\text{MHz}$
Delta $C_{CH}$	$C_{CHMAX} - C_{CHMIN}$	—	0.04	—	pF	$C_{CHMAX} - C_{CHMIN}$

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.

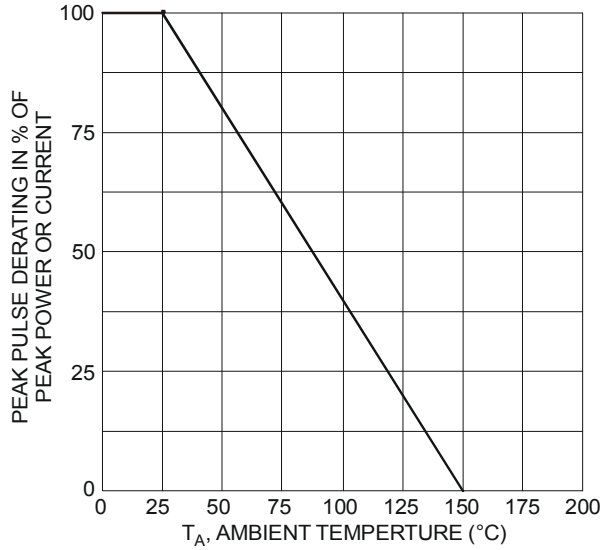


Figure 1 Pulse Derating Curve

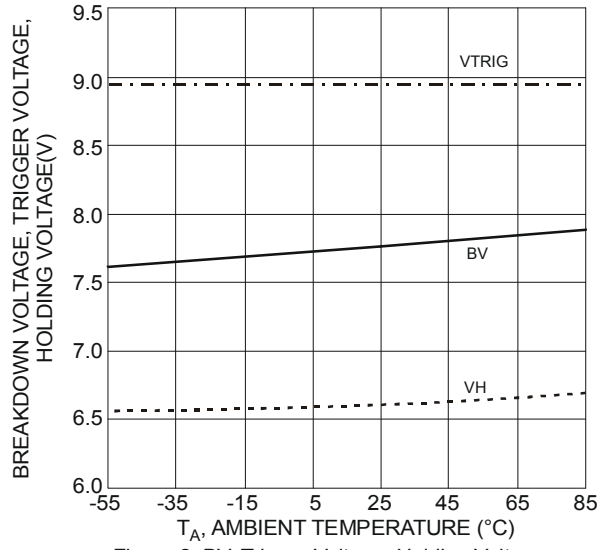


Figure 2 BV, Trigger Voltage, Holding Voltage vs. Ambient Temperature

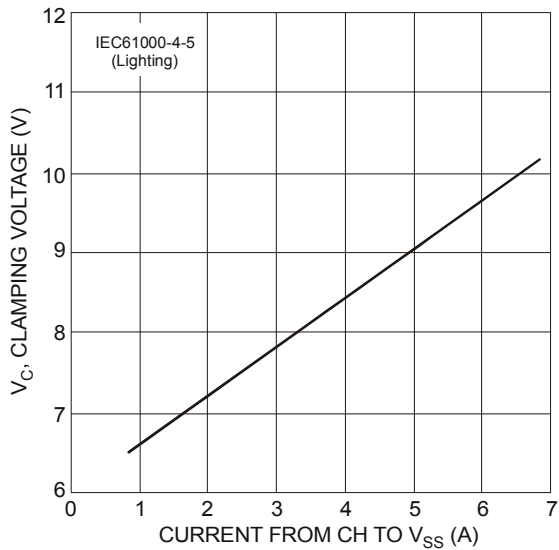


Figure 3 Clamping Voltage Characteristic

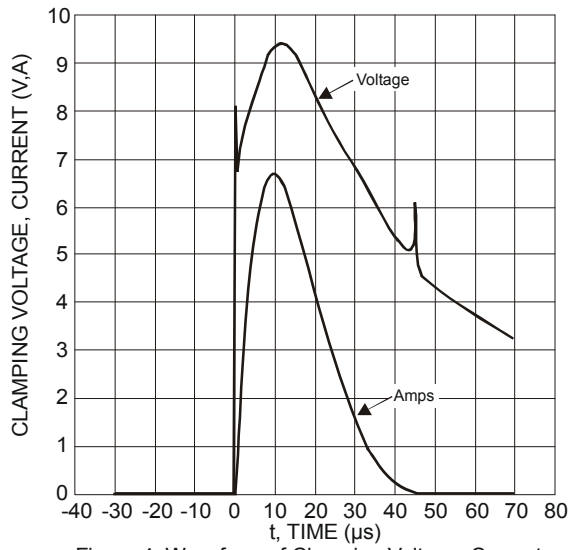


Figure 4 Waveform of Clamping Voltage, Current vs. Time (8/20µs, CH to VSS)

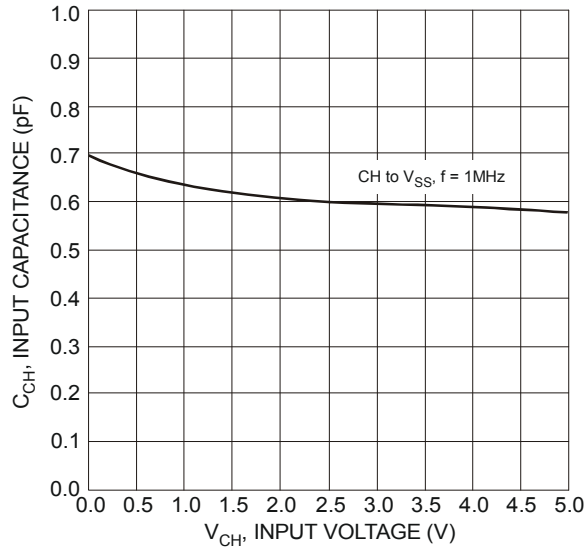


Figure 5 Input Capacitance vs. Input Voltage

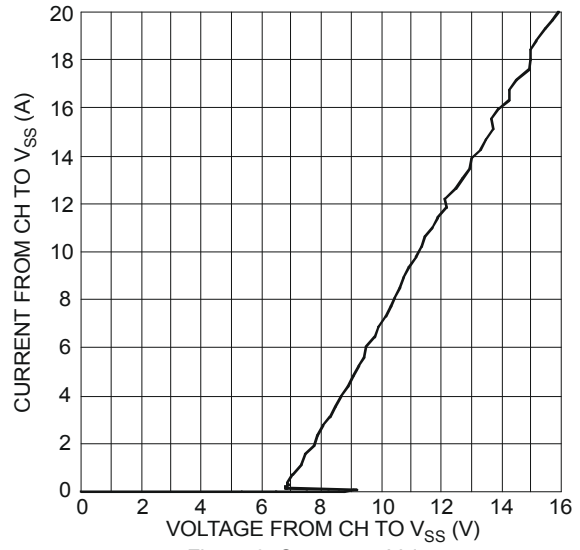
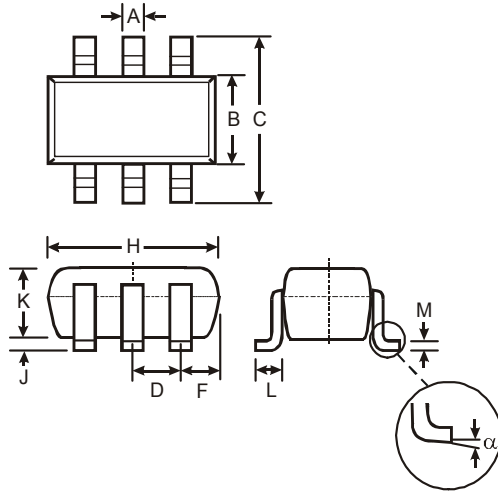


Figure 6 Current vs. Voltage

**Package Outline Dimensions**

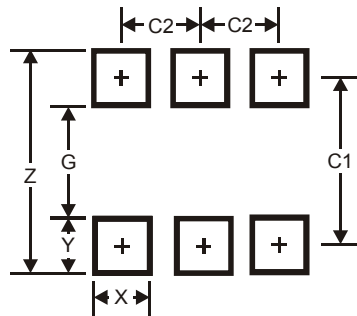
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



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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