4 CHANNEL LOW CAPACITANCE TVS DIODE ARRAY

Features

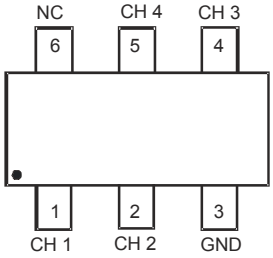
- IEC 61000-4-2 (ESD): Air ±20kV, Contact ±18kV
- 4 Channels of ESD Protection
- Low Channel Input Capacitance of 0.65pF Typical
- Typically Used at High Speed Ports such as USB 2.0, IEEE1394, Serial ATA, DVI, HDMI, PCI
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony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

Mechanical Data

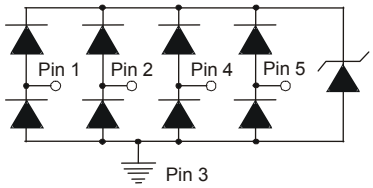
- Case: SOT363
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.006 grams (approximate)

SOT363

Top View



Device Pinout



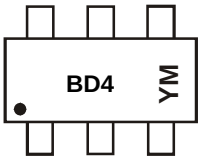
Device Schematic

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 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°C, unless otherwise specified)

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

Electrical Characteristics (@T_A = +25°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 = 2.5V
Reverse Breakdown Voltage	V_{BR}	7.0	—	9.5	V	I_R = 1mA, from CH to GND
Clamping Voltage, Positive Transients	V_{CL1}	—	6.8	—	V	I_{PP} = 1A, t_p = 8/20μs
Clamping Voltage, Positive Transients	V_{CL1}	—	9	—	V	I_{PP} = 5A, t_p = 8/20μs
Clamping Voltage, Negative Transients	V_{CL2}	—	1.5	—	V	I_{PP} = 1A, t_p = 8/20μs
Forward Voltage	V_F	—	0.7	—	V	I_F = 1mA, GND to CH
Dynamic Resistance	R_{DIFF}	—	0.4	—	Ω	I_{PP} = 1A, t_p = 8/20μs, CH to GND
Dynamic Resistance	R_{DIFF-R}	—	0.45	—	Ω	TLP, 20A, tp = 100 ns, CH to GND
Dynamic Resistance	R_{DIFF-F}	—	0.2	—	Ω	TLP, 20A, tp = 100 ns, GND to CH
CH to GND Capacitance	$C_{(CH-GND)}$	—	0.75	—	pF	$V_{(CH-GND)}$ = 0V, f = 1MHz
		—	0.65	0.9	pF	$V_{(CH-GND)}$ = 2.5V, f = 1MHz
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.

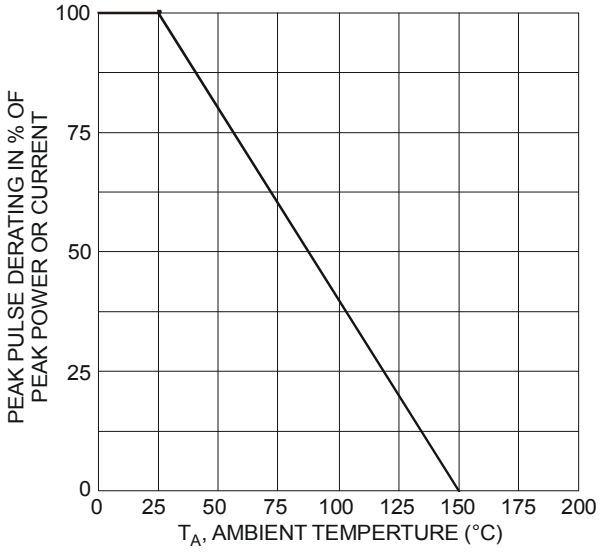


Figure 1 Pulse Derating Curve

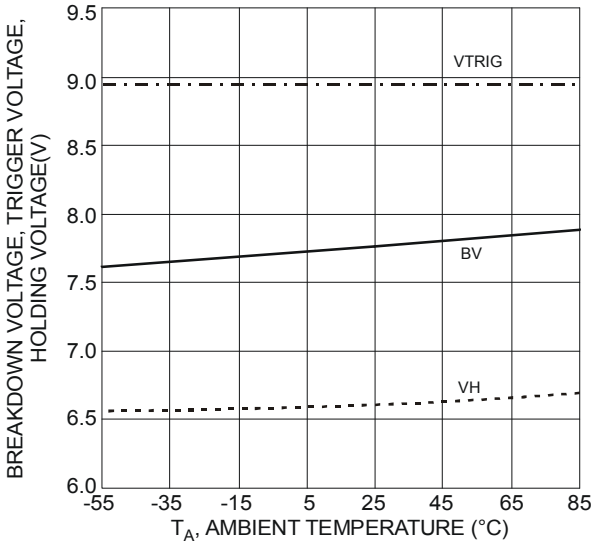


Figure 2 BV, Trigger Voltage, Holding Voltage vs. Ambient Temperature

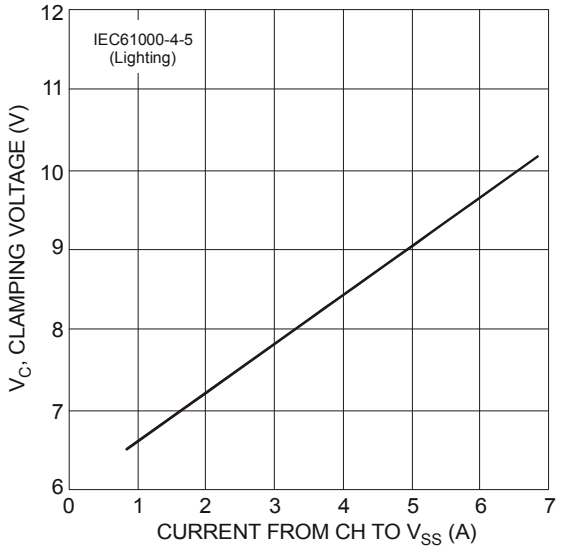


Figure 3 Clamping Voltage Characteristic

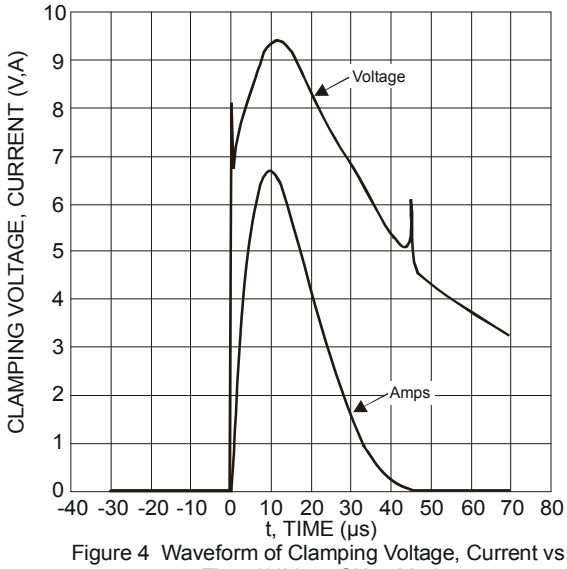


Figure 4 Waveform of Clamping Voltage, Current vs. Time (8/20µs, CH to V_{SS})

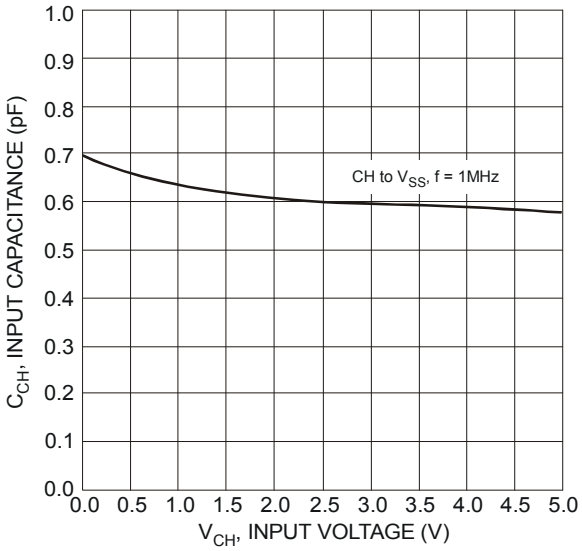


Figure 5 Input Capacitance vs. Input Voltage

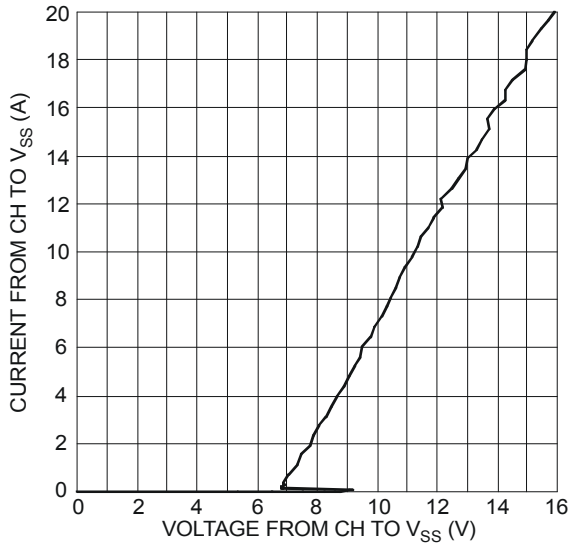
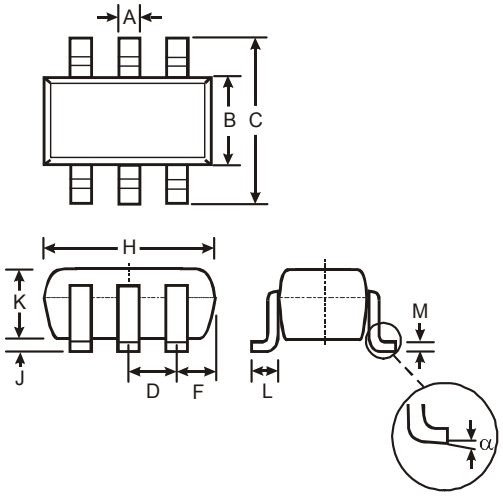


Figure 6 Current vs. Voltage

Package Outline Dimensions

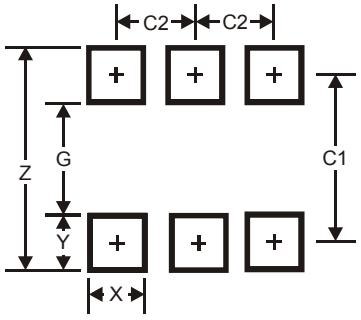
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



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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