

2 CHANNEL LOW CAPACITANCE BI-DIRECTIONAL TVS ARRAY

Features

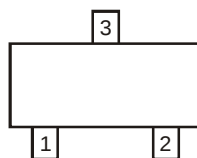
- Provides ESD Protection per IEC 61000-4-2 Standard:
Air – $\pm 30\text{kV}$, Contact – $\pm 30\text{kV}$
- 2 Channels of Bi-Directional ESD Protection
- Low Channel Input Capacitance
- Typically Used in Cellular Handsets, Portable Electronics, Communication Systems, Computers and Peripherals
- Lead Free/RoHS Compliant (Note 1)**
- “Green” Device (Note 2)**

Mechanical Data

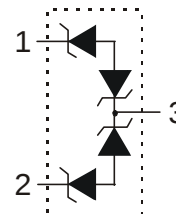
- Case: SOT23
- Case Material: Molded Plastic, “Green” Molding Compound.
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Weight: 0.0089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



Top View

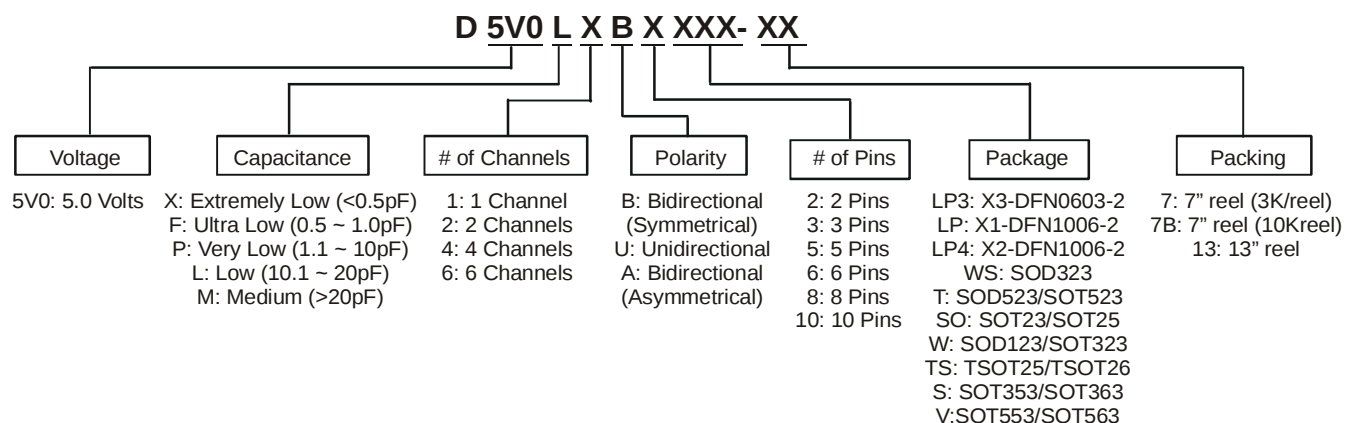


Pin Configuration



Device Schematic

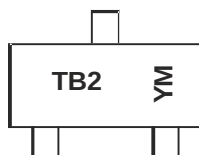
Ordering Information (Note 3)



Part Number	Case	Packaging
D5V0L2B3SO-7	SOT23	3000/Tape & Reel

- Notes:
- EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. No purposely added lead. Halogen and Antimony free.
 - Diodes Inc.'s "Green" policy can be found on our website at <http://www.diodes.com>.
 - For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



TB2 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: Z = 2012)
M = Month (ex: 9 = September)

Date Code Key

Year	2011	2012	2013	2014	2015	2016	2017
Code	Y	Z	A	B	C	D	E

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 Power Dissipation	P _{PP}	84	W	8/20μs, Per in Fig. 1
Peak Pulse Current	I _{PP}	6	A	8/20μs, Per in Fig. 1
ESD Protection – Contact Discharge	V _{ESD Contact}	±30	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	V _{ESD Air}	±30	kV	Standard IEC 61000-4-2

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	P _D	300	mW
Thermal Resistance, Junction to Ambient (Note 5)	R _{θJA}	417	°C/W
Operating Junction Temperature Range	T _J	-65 to +150	°C
Storage Temperature Range	T _{STG}	-65 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Working Voltage	V _{RWM}	-	-	5.0	V	-
Breakdown Voltage	V _{BR}	6	7	8	V	I _R = 1.0mA
Reverse Leakage Current (Note 6)	I _R	-	10	100	nA	V _{RWM} = 5V
Clamping Voltage (Note 4)	V _{CL}	-	7.0	9.0	V	I _{PP} = 1A, t _p = 8/20μs
		-	8.7	10.7	V	I _{PP} = 3A, t _p = 8/20μs
		-	10.5	12.0	V	I _{PP} = 5A, t _p = 8/20μs
		-	11.5	14.0	V	I _{PP} = 6A, t _p = 8/20μs
Differential Resistance	R _{DIF}	-	0.2	-	Ω	I _R = 1.0A, t _p = 8/20μs
Channel Input Capacitance	C _T	-	15	20	pF	V _{IN} = 0V, f = 1MHz (Channel to Pin 3)

- Notes:
4. Measured from channel to pin 3; Non-repetitive current pulse per Fig. 1.
 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.

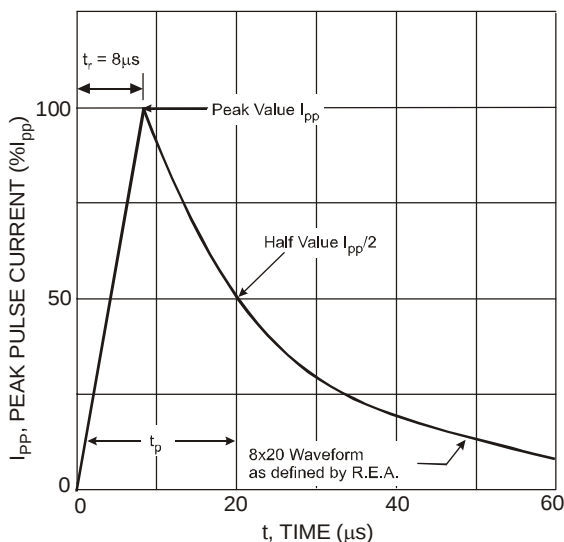


Fig. 1 Typical 8 x 20μs Pulse Waveform

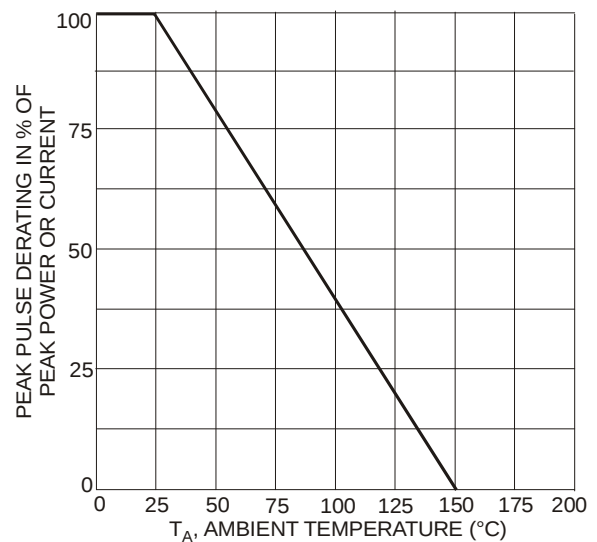


Fig. 2 Pulse Derating Curve

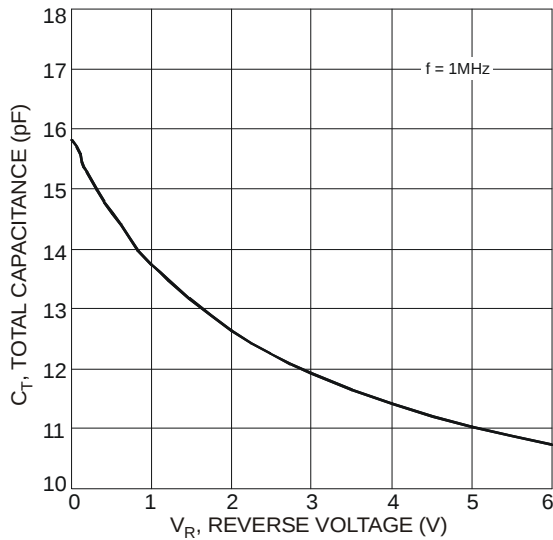


Fig. 3 Typical Total Capacitance vs. Reverse Voltage

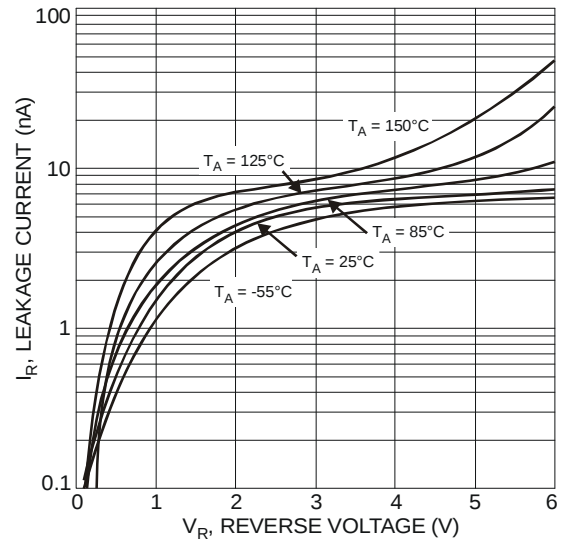
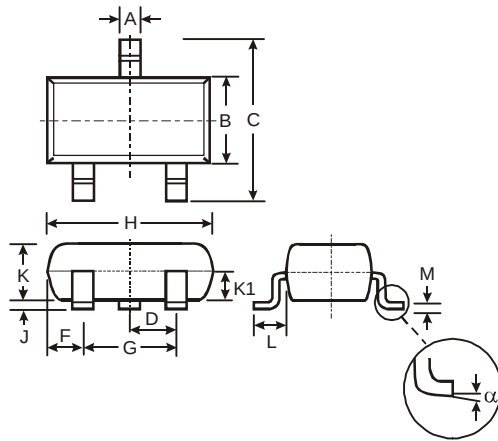


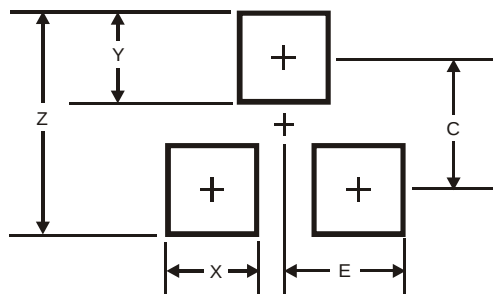
Fig. 4 Typical Reverse Characteristics

Package Outline Dimensions



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



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

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