



**THE DATASHEET OF
D5V0L2B3SO-7**

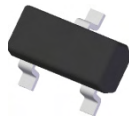


2 CHANNEL LOW CAPACITANCE BI-DIRECTIONAL TVS ARRAY
Features

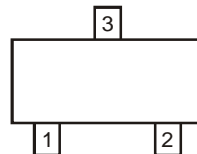
- Provides ESD Protection per IEC 61000-4-2 Standard: Air – ±30kV, Contact – ±30kV
- 2 Channels of Bi-Directional ESD Protection
- Low Channel Input Capacitance
- Typically Used in Cellular Handsets, Portable Electronics, Communication Systems, Computers and Peripherals
- **Lead Free/RoHS Compliant (Note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

Mechanical Data

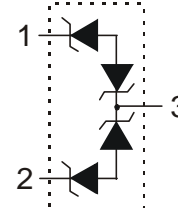
- Case: SOT23
- Case Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Weight: 0.0089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



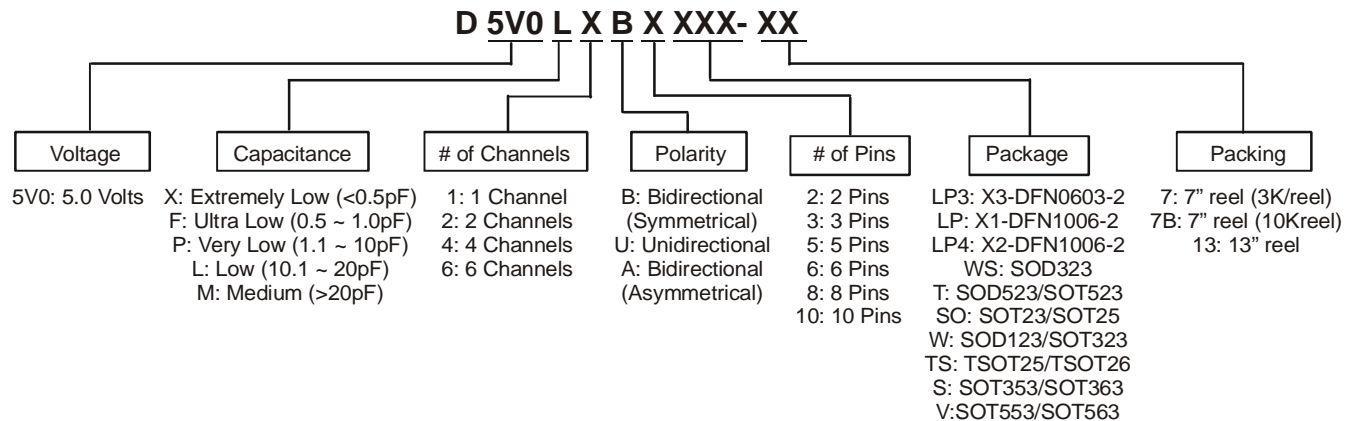
Top View



Pin Configuration

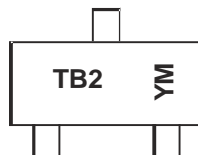


Device Schematic

Ordering Information (Note 3)


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

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. No purposely added lead. Halogen and Antimony free.
 2. Diodes Inc.'s "Green" policy can be found on our website at <http://www.diodes.com>.
 3. 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 @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P_{PP}	84	W	8/20 μs , Per in Fig. 1
Peak Pulse Current	I_{PP}	6	A	8/20 μs , 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)	$R_{\theta JA}$	417	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	-65 to +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65 to +150	$^\circ\text{C}$

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ 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	$I_R = 1.0\text{mA}$
Reverse Leakage Current (Note 6)	I_R	-	10	100	nA	$V_{RWM} = 5\text{V}$
Clamping Voltage (Note 4)	V_{CL}	-	7.0	9.0	V	$I_{PP} = 1\text{A}$, $t_p = 8/20\mu\text{s}$
		-	8.7	10.7	V	$I_{PP} = 3\text{A}$, $t_p = 8/20\mu\text{s}$
		-	10.5	12.0	V	$I_{PP} = 5\text{A}$, $t_p = 8/20\mu\text{s}$
		-	11.5	14.0	V	$I_{PP} = 6\text{A}$, $t_p = 8/20\mu\text{s}$
Differential Resistance	R_{DIF}	-	0.2	-	Ω	$I_R = 1.0\text{A}$, $t_p = 8/20\mu\text{s}$
Channel Input Capacitance	C_T	-	15	20	pF	$V_{IN} = 0\text{V}$, $f = 1\text{MHz}$ (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.

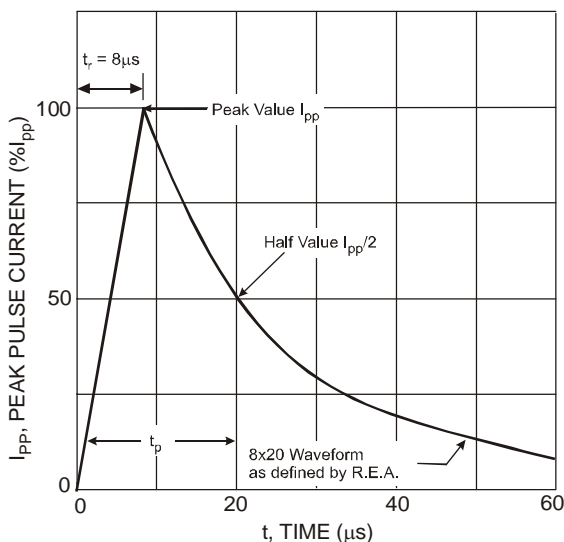
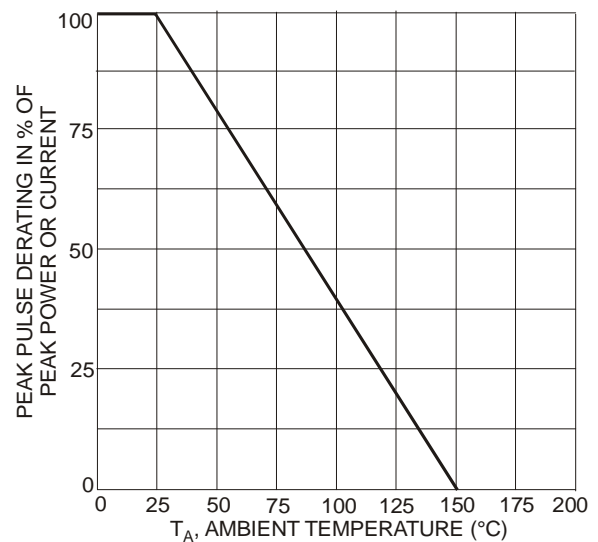

 Fig. 1 Typical 8 x 20 μs Pulse Waveform


Fig. 2 Pulse Derating Curve

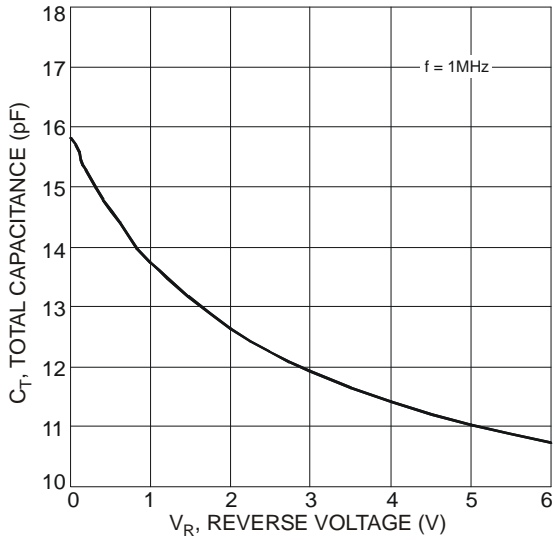


Fig. 3 Typical Total Capacitance vs. Reverse Voltage

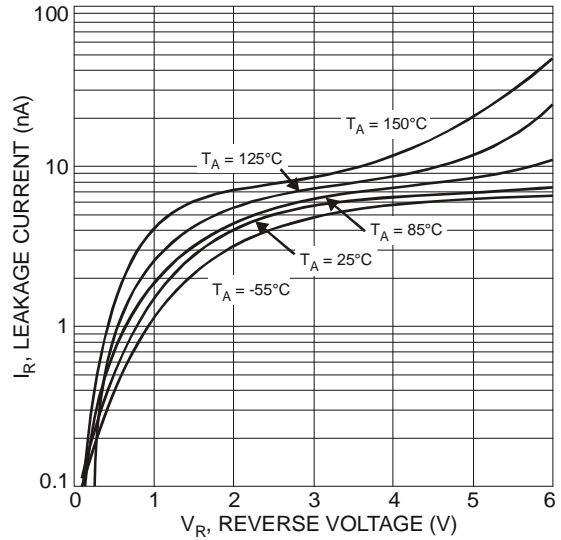
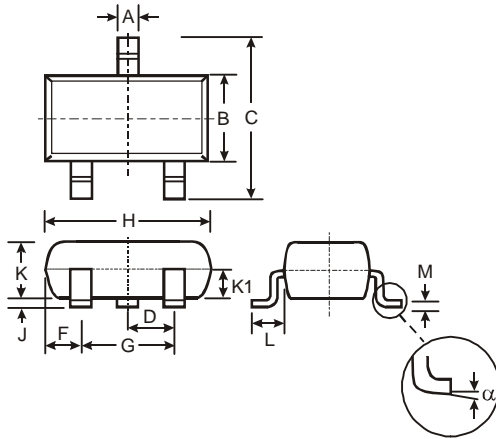


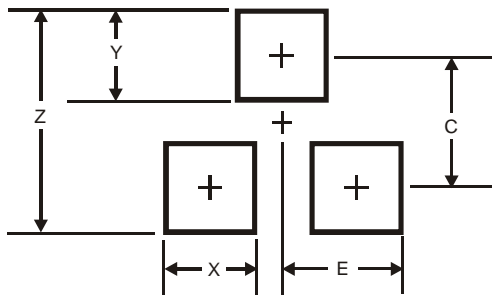
Fig. 4 Typical Reverse Characteristics

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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