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[D5V0L2B3W-7](#)

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D5V0L2B3W

2 CHANNEL LOW CAPACITANCE BI-DIRECTIONAL TVS ARRAY

Features

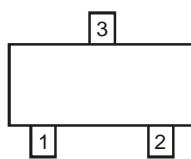
- Provides ESD Protection per IEC 61000-4-2 Standard: Air – $\pm 30\text{kV}$, Contact – $\pm 30\text{kV}$
- 2 Channels of Bi-Directional ESD Protection
- Low Channel Input Capacitance
- Typically Used at Portable Electronics, Cellular Handsets and Communication Systems
- Lead Free/RoHS Compliant (Note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

Mechanical Data

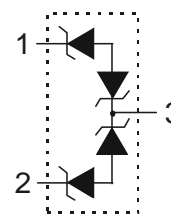
- Case: SOT323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Weight: 0.006 grams (approximate)



Top View



Pin Configuration



Device Schematic

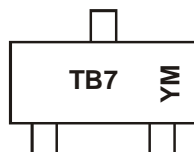
Ordering Information (Note 3)

D 5V0 L X B X XXX- XX						
Voltage	Capacitance	# of Channels	Polarity	# of Pins	Package	Packing
5V0: 5.0 Volts	X: Extremely Low (<0.5pF) F: Ultra Low (0.5 ~ 1.0pF) P: Very Low (1.1 ~ 10pF) L: Low (10.1 ~ 20pF) M: Medium (>20pF)	1: 1 Channel 2: 2 Channels 4: 4 Channels 6: 6 Channels	B: Bidirectional (Symmetrical) U: Unidirectional A: Bidirectional (Asymmetrical)	2: 2 Pins 3: 3 Pins 5: 5 Pins 6: 6 Pins 8: 8 Pins 10: 10 Pins	LP3: X3-DFN0603-2 LP: X1-DFN1006-2 LP4: X2-DFN1006-2 WS: SOD323 T: SOD523/SOT523 SO: SOT23/SOT25 W: SOD123/SOT323 TS: TSOT25/TSOT26 S: SOT353/SOT363 V: SOT553/SOT563	7: 7" reel (3K/reel) 7B: 7" reel (10K/reel) 13: 13" reel

Part Number	Case	Packaging
D5V0L2B3W-7	SOT323	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



TB7 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: Z = 2012)
M = Month (ex: 9 = September)

Date Code Key

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



D5V0L2B3W

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 Fig. 1
Peak Pulse Current	I_{PP}	6	A	8/20 μs , Per 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	200	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	625	$^\circ\text{C/W}$
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 pin 1 to 3 or pin 2 to 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.

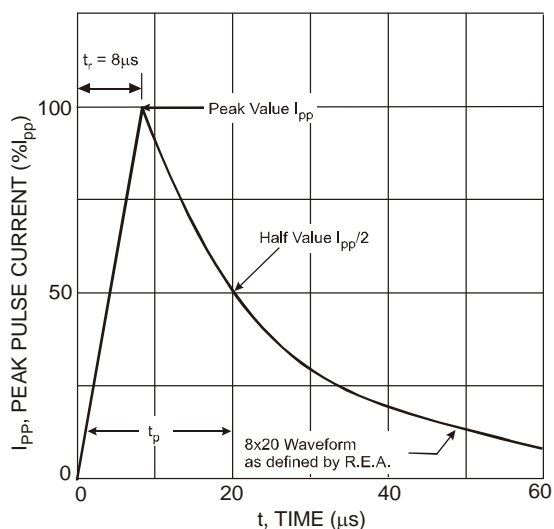


Fig. 1 Typical 8 x 20 μs Pulse Waveform

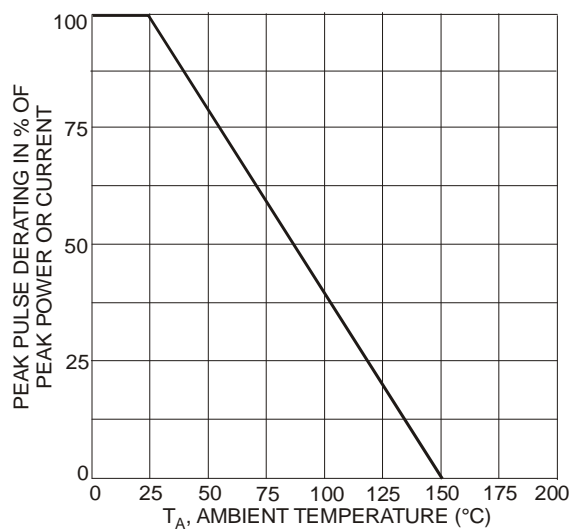


Fig. 2 Pulse Derating Curve



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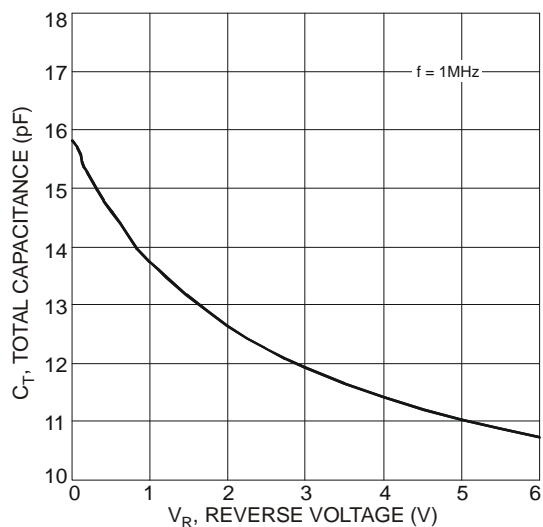


Fig. 3 Typical Total Capacitance vs. Reverse Voltage

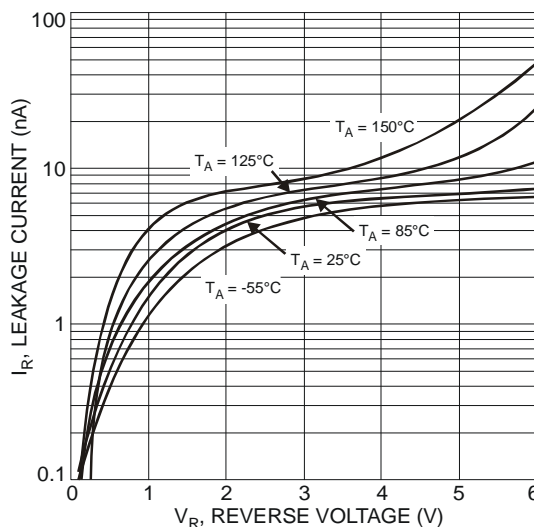
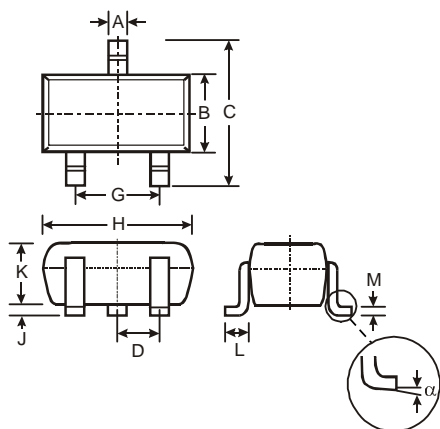


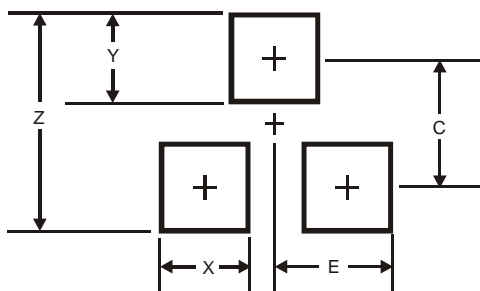
Fig. 4 Typical Reverse Characteristics

Package Outline Dimensions



SOT323			
Dim	Min	Max	Typ
A	0.25	0.40	0.30
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	-	-	0.65
G	1.20	1.40	1.30
H	1.80	2.20	2.15
J	0.0	0.10	0.05
K	0.90	1.00	1.00
L	0.25	0.40	0.30
M	0.10	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.8
X	0.7
Y	0.9
C	1.9
E	1.0

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