

# Lead-free Green D5V0L2B3SO 2 CHANNEL LOW CAPACITANCE BI-DIRECTIONAL TVS ARRAY

#### Features

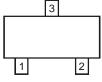
- Provides ESD Protection per IEC 61000-4-2 Standard: Air – ±30kV, Contact – ±30kV
- 2 Channels of Bi-Directional ESD Protection
- Low Channel Input Capacitance
- Typically Used in Cellular Handsets, Portable Electronics, Communication Systems, Computers and Peripherals
- Lead Free/RoHS Compliant (Note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

#### **Mechanical Data**

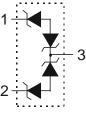
- Case: SOT23
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Weight: 0.0089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





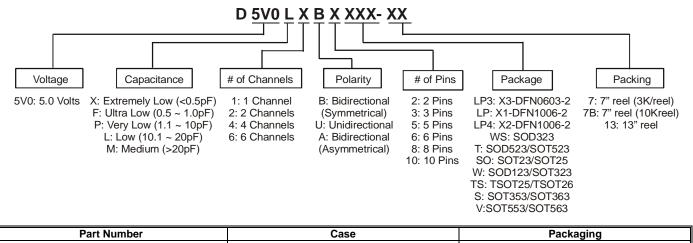


Pin Configuration



**Device Schematic** 

#### Ordering Information (Note 3)

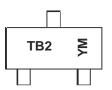


	Part Number	Case	Packaging			
	D5V0L2B3SO-7	SOT23	3000/Tape & Reel			
Notes:	Notes: 1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. No purposely added lead. Halogen and Antimony free.					

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	Kev
Date	COUC	1100

Year	201	1	2012		2013	20	14	2015		2016	2	2017
Code	Y		Z		А	E	3	С		D		E
Month	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D



# Maximum Ratings @TA = 25°C unless otherwise specified

Characteristic	Currada a l	Value	11	Conditions
Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P <sub>PP</sub>	84	W	8/20μs, Per in Fig. 1
Peak Pulse Current	IPP	6	А	8/20μs, Per in Fig. 1
ESD Protection – Contact Discharge	V <sub>ESD_Contact</sub>	±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)	PD	300	mW
Thermal Resistance, Junction to Ambient (Note 5)	R <sub>0JA</sub>	417	°C/W
Operating Junction Temperature Range	TJ	-65 to +150	°C
Storage Temperature Range	T <sub>STG</sub>	-65 to +150	°C

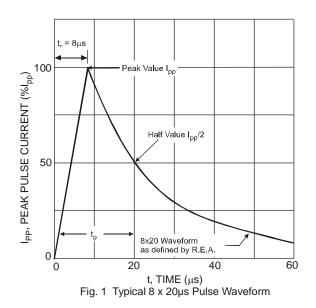
### Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

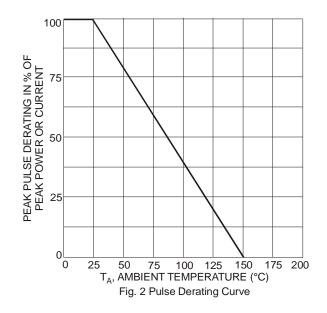
Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
Reverse Working Voltage	V <sub>RWM</sub>	-	-	5.0	V	-
Breakdown Voltage	V <sub>BR</sub>	6	7	8	V	I <sub>R</sub> = 1.0mA
Reverse Leakage Current (Note 6)	IR	-	10	100	nA	V <sub>RWM</sub> = 5V
		-	7.0	9.0	V	$I_{PP} = 1A, t_p = 8/20 \mu s$
Clamping Voltage (Note 4)	Vcl	-	8.7	10.7	V	I <sub>PP</sub> = 3A, t <sub>p</sub> = 8/20μs
Clamping Voltage (Note 4)	VCL	-	10.5	12.0	V	$I_{PP} = 5A, t_p = 8/20 \mu s$
		-	11.5	14.0	V	$I_{PP} = 6A, t_p = 8/20\mu s$
Differential Resistance	R <sub>DIF</sub>	-	0.2	-	Ω	$I_R = 1.0A, t_p = 8/20\mu s$
Channel Input Capacitance	Ст	-	15	20	pF	$V_{IN} = 0V$ , f = 1MHz (Channel to Pin 3)

Notes:

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

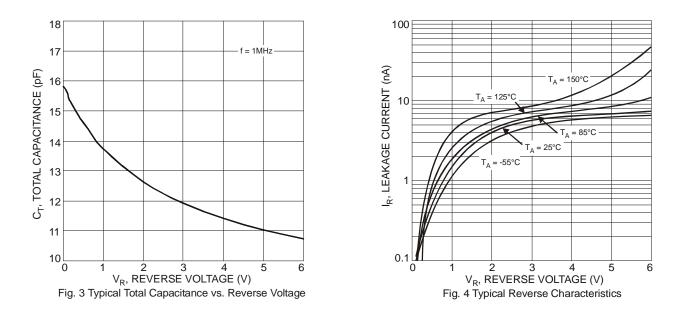
6. Short duration pulse test used to minimize self-heating effect.



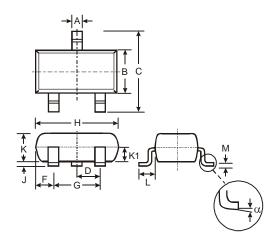




## D5V0L2B3SO

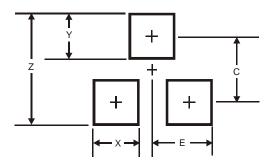


# Package Outline Dimensions



SOT23						
Dim	Min	Max	Тур			
Α	0.37	0.51	0.40			
В	1.20	1.40	1.30			
С	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			
Н	2.80	3.00	2.90			
J	0.013	0.10	0.05			
κ	0.903	1.10	1.00			
K1	-	-	0.400			
L	0.45	0.61	0.55			
М	0.085	0.18	0.11			
α	0°	8°	-			
All	Dimens	ions in	mm			

# Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.9
Х	0.8
Y	0.9
С	2.0
E	1.35



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  - 2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.
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