4 CHANNEL LOW CAPACITANCE BI-DIRECTIONAL TVS ARRAY

Features

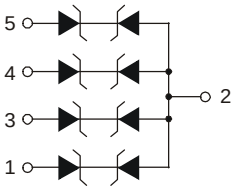
- Provides ESD Protection per IEC 61000-4-2 Standard: Air – ±30kV, Contact – ±30kV
- 4 Channels of Bi-directional ESD Protection
- Low Channel Input Capacitance
- Typically Used at Portable Electronics, Cellular Handsets and Communication Systems
- **Lead Free/RoHS Compliant (Note 1)**
- **"Green" Device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

Mechanical Data

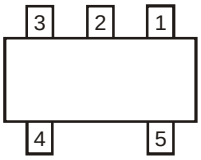
- Case: SOT25
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Copper leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Weight: 0.016 grams (approximate)

SOT25

Top View



Device Schematic



Top View
Pin Configuration

Ordering Information (Note 3)

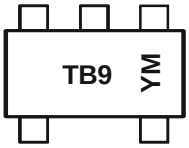
D 5V0 L X B X XXX- XX

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 (10Kreel) 13: 13" reel

Part Number	Case	Packaging
D5V0L4B5SO-7	SOT25	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



TB9 = 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 Fig. 2
Peak Pulse Current	I_{PP}	6	A	8/20µs, Per Fig. 2
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	°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 2)

Notes:
4. Measured from channel to pin 2; Non-repetitive current pulse per Fig. 2.
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

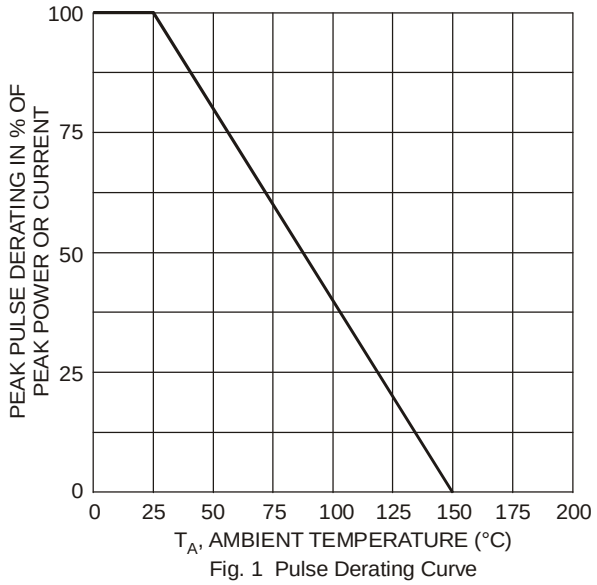


Fig. 1 Pulse Derating Curve

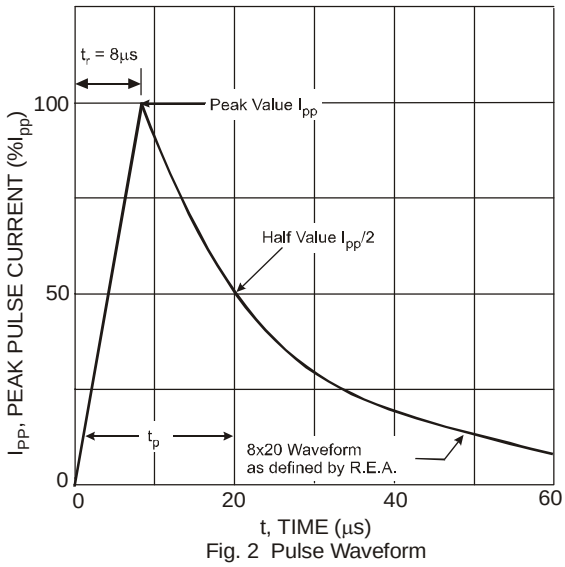


Fig. 2 Pulse Waveform

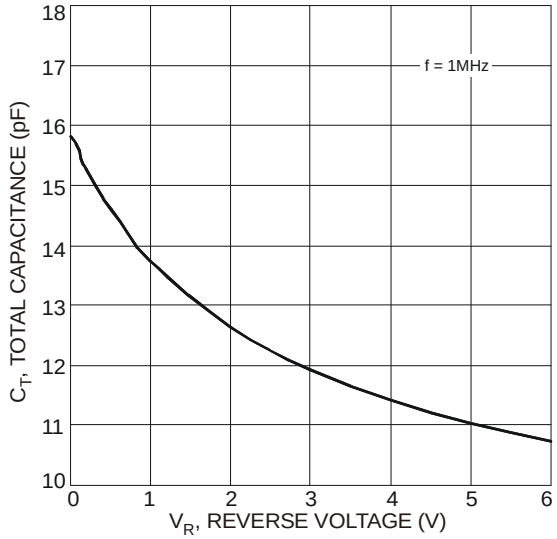


Fig. 3 Typical Total Capacitance vs. Reverse Voltage

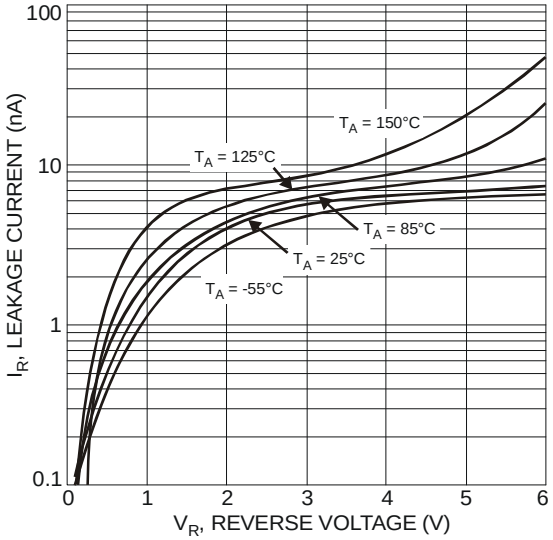
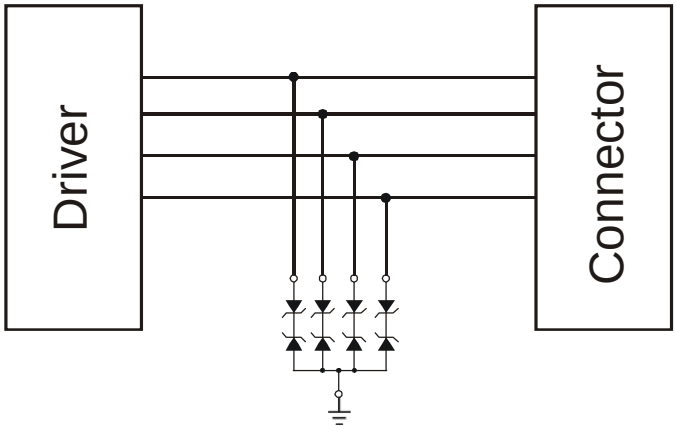


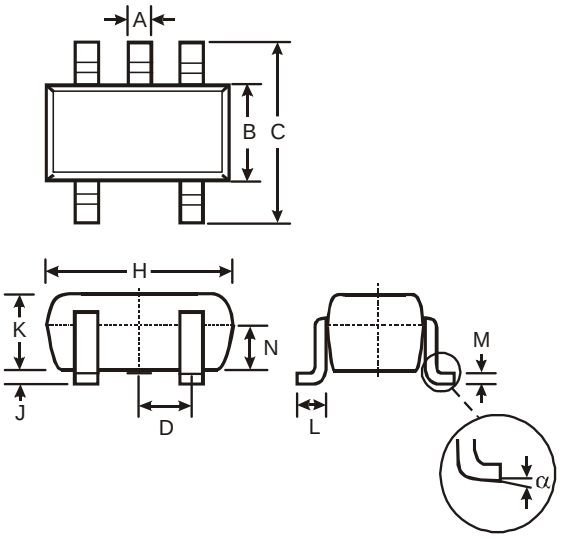
Fig. 4 Typical Reverse Characteristics

Typical Applications



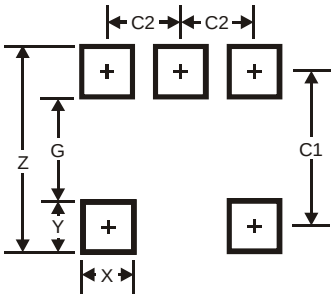
D5V0L4B5SO

Package Outline Dimensions



SOT25			
Dim	Min	Max	Typ
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	—	—	0.95
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
N	0.70	0.80	0.75
α	0°	8°	—
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.20
G	1.60
X	0.55
Y	0.80
C1	2.40
C2	0.95

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