Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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LOW CAPACITANCE BIDIRECTIONAL TVS DIODE

Features

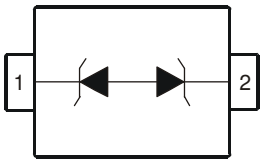
- Provides ESD Protection per IEC 61000-4-2 Standard: Air ±30kV, Contact ±30kV
- 1 Channel of ESD Protection
- Low Channel Input Capacitance
- Typically used in Cellular Handsets, Portable Electronics, Communication Systems, Computers and Peripherals
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: SOD523
- 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 e3
- Weight: 0.001 grams (Approximate)

SOD523

Top View



Device Schematic

Ordering Information (Note 4)

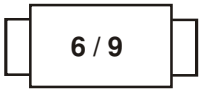
D 5V0 L X B X XXX- XX

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 7B: 7" reel (DFN1006 Package Only) 13: 13" reel

Part Number	Case	Packaging
D5V0L1B2T-7 (Note 5)	SOD523	3000/Tape & Reel

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at http"//www.diodes.com/products/packages.html
5. Dispensed every other cavity of the carrier tape.

Marking Information



6 / 9 = Product Type Marking Code

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 Figure 2
Peak Pulse Current	I_{PP}	6	A	8/20µs, per Figure 2
ESD Protection – Contact Discharge	$V_{ESD\ Contact}$	±30	kV	IEC 61000-4-2 Standard
ESD Protection – Air Discharge	$V_{ESD\ Air}$	±30	kV	IEC 61000-4-2 Standard

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 6)	P_D	275	mW
Thermal Resistance, Junction to Ambient (Note 6)	$R_{\theta JA}$	454	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Standoff Voltage	V_{RWM}	-	-	5	V	-
Channel Leakage Current (Note 7)	I_{RM}	-	10	100	nA	V_{RWM} = 5V
Clamping Voltage, Positive Transients	V_{CL}	- - - -	7.0 8.7 10.5 11.5	9.0 10.7 12.0 14.0	V	I_{PP} = 1A, tp = 8/20µS I_{PP} = 3A, tp = 8/20µS I_{PP} = 5A, tp = 8/20µS I_{PP} = 6A, tp = 8/20µS
Breakdown Voltage	V_{BR}	6	7	8	V	I_R = 1mA
Differential Resistance	R_{DIF}	-	0.2	-	Ω	I_R = 1A, tp = 8/20µS
Channel Input Capacitance	C_{IN}	-	15	20	pF	V_R = 0V, f = 1MHz

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

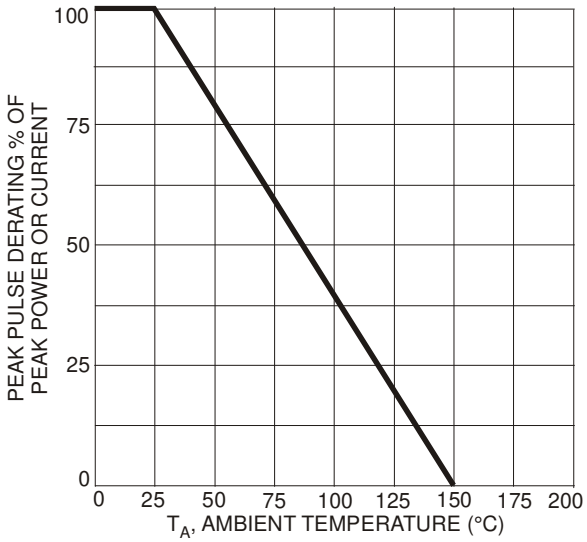


Fig. 1 Power Dissipation vs. Ambient Temperature

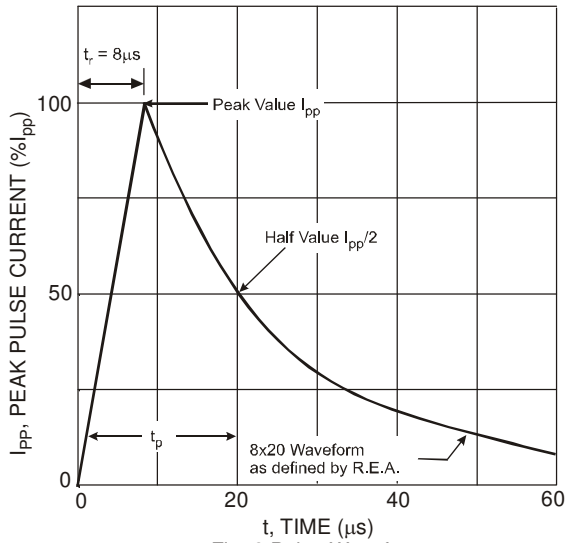


Fig. 2 Pulse Waveform

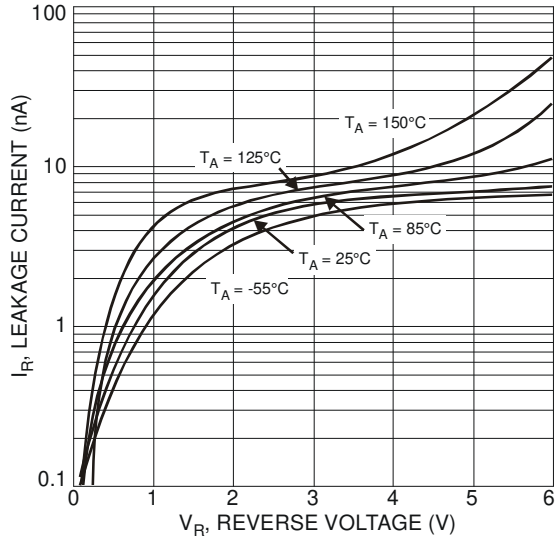


Fig. 3 Typical Reverse Characteristics

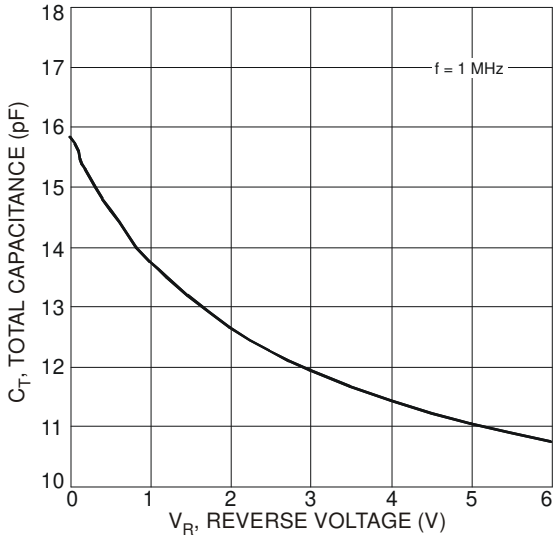


Fig. 4 Typical Total Capacitance vs. Reverse Voltage

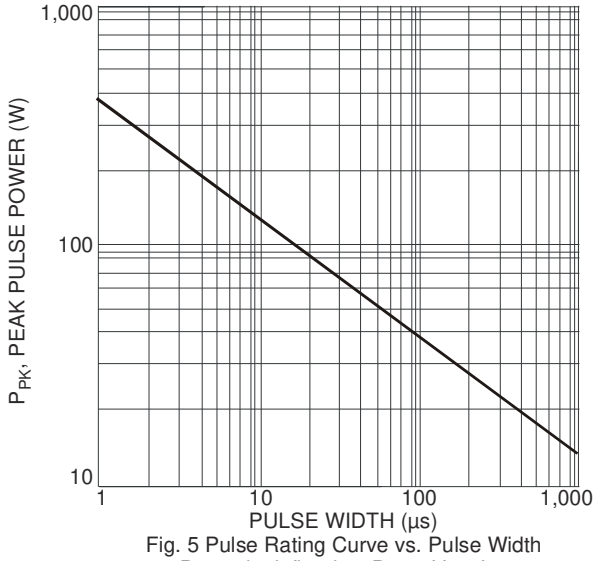
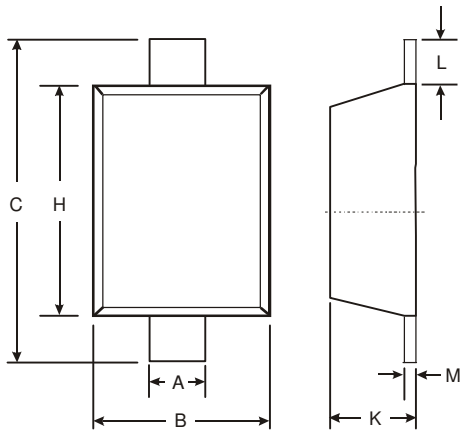


Fig. 5 Pulse Rating Curve vs. Pulse Width
Power is defined as $P_{PK} = V_C \times I_{PP}$

Package Outline Dimensions

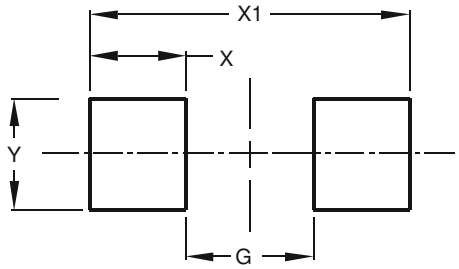
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



SOD523		
Dim	**Min**	**Max**
A	0.25	0.35
B	0.70	0.90
C	1.50	1.70
H	1.10	1.30
K	0.55	0.65
L	0.10	0.30
M	0.10	0.12
All Dimensions in mm		

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
G	0.80
X	0.60
X1	2.00
Y	0.70