

Product Summary

VBR (Min)	IPP (Max)	CT (Typ)
27V	6A	35pF

Description And Applications

This new generation TVS is designed to protect sensitive electronics from the damage due to ESD. The combination of small size and high ESD surge capability makes it ideal for use in portable applications such as:

- USB modules
- HDMI ports
- LVDS

Features and Benefits

- Provides ESD Protection per IEC 61000-4-2 Standard: Air $\pm 15\text{kV}$, Contact $\pm 15\text{kV}$
- One Channel of ESD Protection
- Low Channel Input Capacitance
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- An automotive-compliant part is available under separate datasheet ([D24V0S1U2TQ](#))

Mechanical Data

- Package: SOD523
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin over Copper Leadframe, per MIL-STD-202, Method 208 
- Weight: 0.001 grams (Approximate)

SOD523



Top View



Device Schematic

Ordering Information (Note 4)

Part Number	Package	Marking	Reel Size (inches)	Tape Width (mm)	Packing	
					Qty.	Carrier
D24V0S1U2T-7	SOD523	ZG	7	8	3000	Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



ZG = Product Type Marking Code
Bar Denotes Pin 1 or Cathode

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P _{PP}	360	W	8/20μs, per Figure 1
Peak Pulse Current	I _{PP}	6	A	8/20μs, per Figure 1
ESD Protection – Contact Discharge	V _{ESD_CONTACT}	±15	kV	IEC 61000-4-2 Standard
ESD Protection – Air Discharge	V _{ESD_AIR}	±15	kV	IEC 61000-4-2 Standard

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	P _D	250	mW
Thermal Resistance, Junction to Ambient (Note 5)	R _{θJA}	500	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 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}	—	—	24	V	—
Channel Leakage Current (Note 6)	I _{RM}	—	—	200	nA	V _{RWM} = 24V
Clamping Voltage, IEC 61000-4-5	V _{CL}	—	—	36	V	I _{PP} = 1A, t _P = 8/20μs
		—	—	60	V	I _{PP} = 6A, t _P = 8/20μs
Breakdown Voltage	V _{BR}	27	—	34	V	I _R = 1mA
Channel Input Capacitance	C _T	—	35	—	pF	V _R = 0, f = 1MHz

Notes: 5. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes Incorporated's suggested pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>.
6. Short duration pulse test used to minimize self-heating effect.

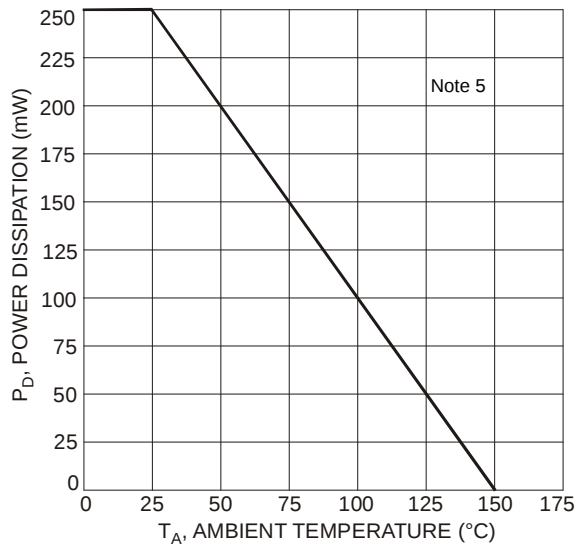


Figure 1 Power Derating Curve

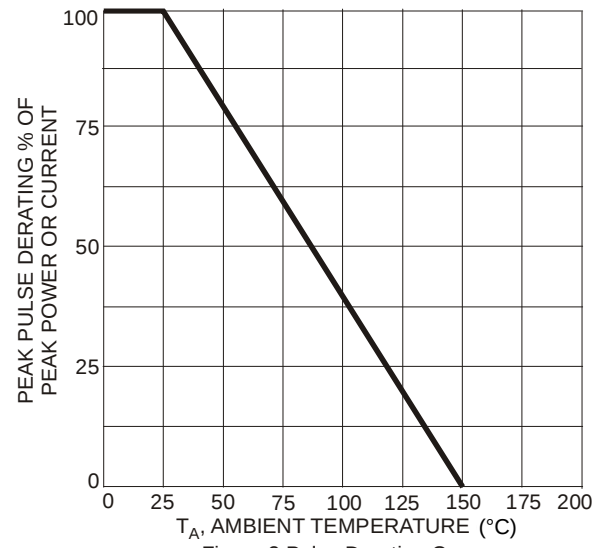


Figure 2 Pulse Derating Curve

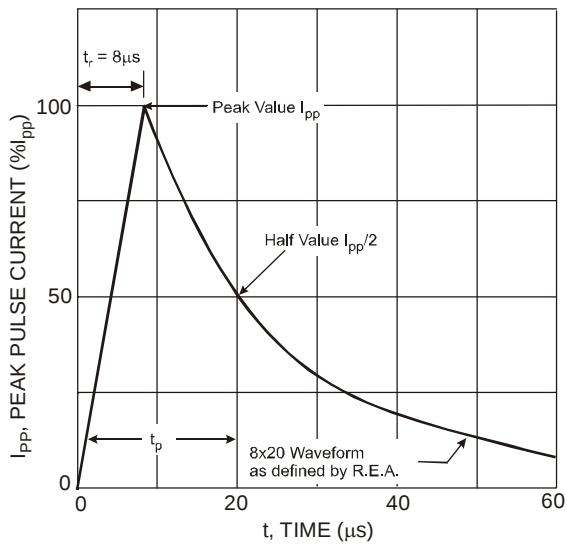


Figure 3 Pulse Waveform

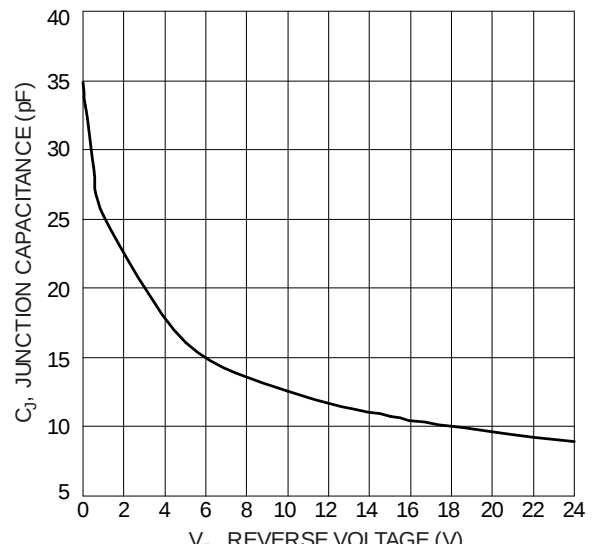


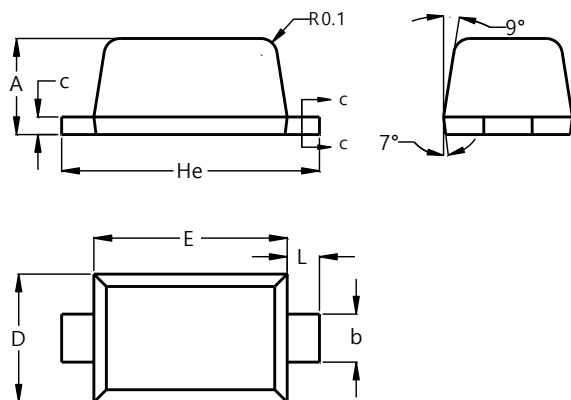
Figure 4 Typical Junction Capacitance

Note: 5. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes Incorporated's suggested pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>.

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOD523

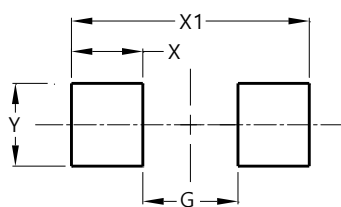


SOD523		
Dim	Min	Max
A	0.55	0.65
b	0.26	0.34
c	0.11	0.17
D	0.75	0.85
E	1.15	1.25
He	1.55	1.65
L	0.10	0.30
All Dimensions in mm		

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOD523



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

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