

Product Summary

V_{BR} (Min)	I_{PP} (Max)	C_T (Typ)
57V	2A	14pF

Description & 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 Automotive Infotainment systems.

- USB Modules
- HDMI Inputs
- LVDS

Features and Benefits

- Provides ESD Protection per IEC 61000-4-2 Standard: Air ±30kV, Contact ±25kV
- 1 Channel of ESD Protection
- Ideal for 60V MOSFET Protection
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **PPAP Capable (Note 4)**

Mechanical Data

- Case: SOD323
- 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: 0.004 grams (Approximate)

SOD323



Bottom View



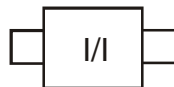
Device Schematic

Ordering Information (Note 5)

Part Number	Compliance	Marking	Reel Size(inches)	Tape Width(mm)	Quantity Per Reel
D55V0M1B2WSQ-7	Automotive	I/I	7	8	3,000/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. Automotive products are AEC-Q101 qualified and are PPAP capable. Please refer to <https://www.diodes.com/quality/product-compliance-definitions/>.
 5. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



I/I = Product Type Marking Code

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

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P _{PP}	200	W	8/20μs, Per Figure 2
Peak Pulse Current	I _{PP}	2	A	8/20μs, Per Figure 2
ESD Protection – Contact Discharge	V _{ESD_Contact}	±25	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	250	mW
Thermal Resistance, Junction to Ambient (Note 6)	R _{θJA}	500	°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}	—	—	55	V	—
Channel Leakage Current (Note 7)	I _{RM}	—	—	100	nA	V _{RWM} = 55V
Clamping Voltage	V _{CL}	—	—	86 100	V	I _{PP} = 1A, t _p = 8/20μs I _{PP} = 2A, t _p = 8/20μs
Breakdown Voltage	V _{BR}	57	—	—	V	I _R = 1mA
Channel Input Capacitance	C _T	—	14	25	pF	V _R = 0V, f = 1MHz

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

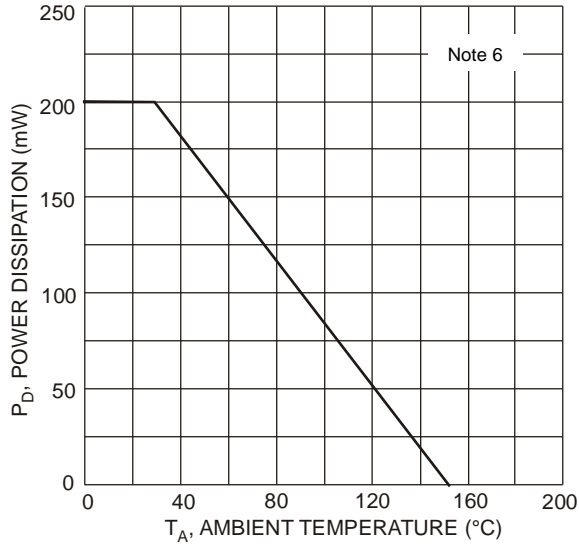


Figure 1 Power Derating Curve

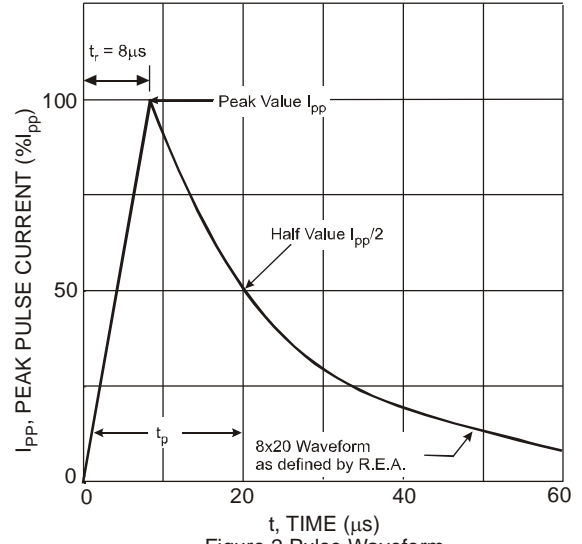


Figure 2 Pulse Waveform

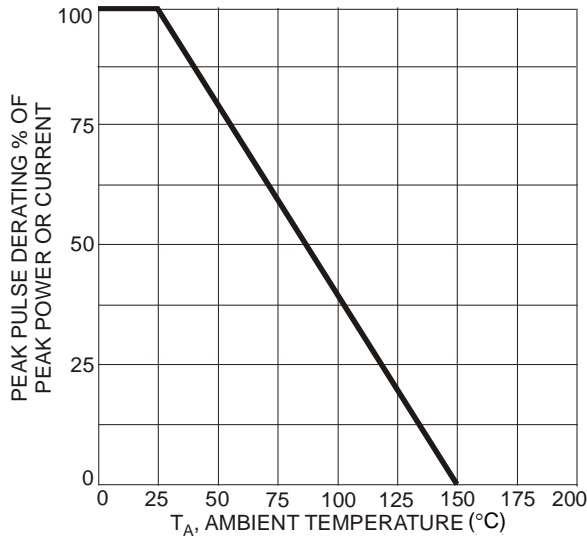


Figure 3 Power Dissipation vs. Ambient Temperature

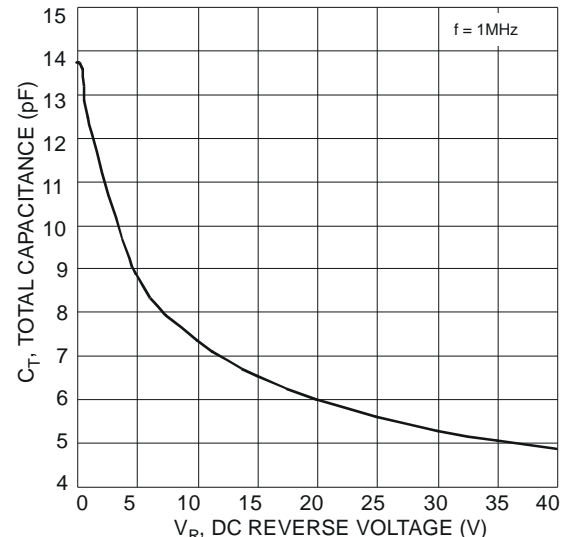


Figure 4 Total Capacitance vs. Reverse Voltage

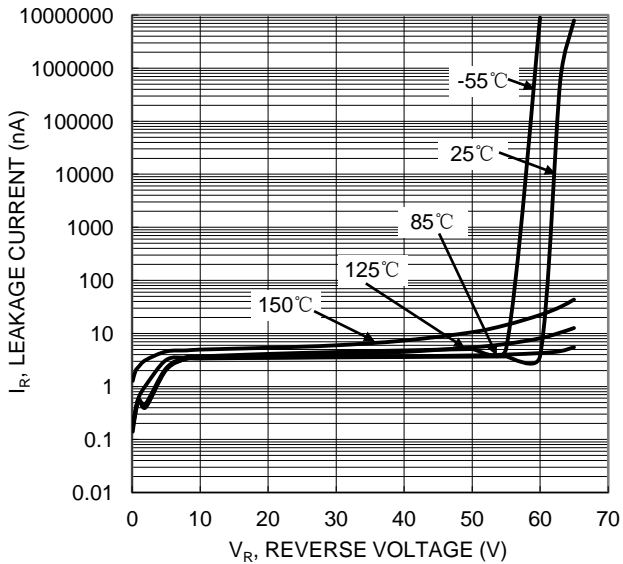
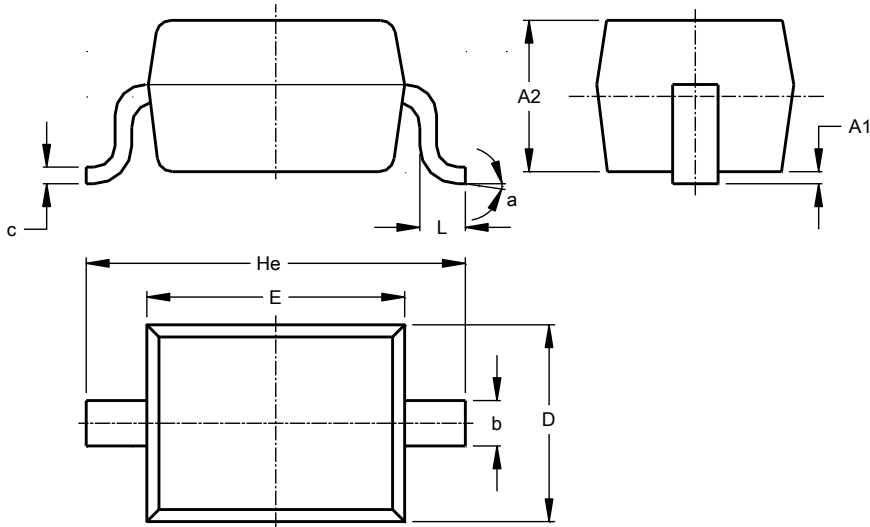


Figure 5 Typical Reverse Characteristics

Package Outline Dimensions

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

SOD323

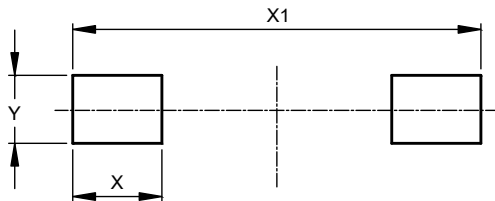


SOD323			
Dim	Min	Max	Typ
A1	--	0.10	0.05
A2	1.00	1.10	1.05
b	0.25	0.35	0.30
c	0.10	0.15	0.11
D	1.20	1.40	1.30
E	1.60	1.80	1.70
He	2.30	2.70	2.50
L	0.20	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

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

SOD323



Dimensions	Value (in mm)
X	0.590
X1	2.700
Y	0.450

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