Product Summary

$V_{BR\ MIN}$	$I_{PP\ MAX}$	$C_{IN\ TYP}$
7.5V	90A	750pF

Description

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 cellular phones, digital cameras, and MP3 players.

Applications

- Cellular Handsets
- Portable Electronics
- Computers and Peripheral

Features

- Provides ESD Protection per IEC 61000-4-2 Standard: Air ±30kV, Contact ±30kV
- 1 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)**

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
- Matte Tin Finish Annealed Over Alloy 42 Leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Weight: 0.004 grams (Approximate)

SOD323



Top View



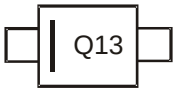
Device Schematic

Ordering Information (Note 4)

Product	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity per Reel
D7V0S1U2WS-7	Standard	Q13	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. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information



Q13 = Product Type Marking Code
Line Denotes Pin 1

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

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P_{PP}	1,400	W	8/20µs (See Figure 3)
Peak Pulse Current	I_{PP}	90	A	8/20µs (See Figure 3)
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	350	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	500	°C/W
Operating Temperature Range	T_J	-55 to +125	°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}	—	—	7.0	V	—
Reverse Current (Note 6)	I_R	—	—	1	µA	$V_R = V_{RWM}$ = 7V
Reverse Breakdown Voltage	V_{BR}	7.5	—	9.5	V	I_R = 1mA
Reverse Clamping Voltage	V_{CL}	—	—	10	V	I_{PP} = 5A, t_P = 8/20µs
		—	—	12.5		I_{PP} = 50A, t_P = 8/20µs
		—	—	15.5		I_{PP} = 90A, t_P = 8/20µs
Capacitance	C_T	—	750	—	pF	V_R = 0V, f = 1MHz

Notes: 5. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes' suggested pad layout per http://www.diodes.com/products/packages.html.
6. Short duration pulse test used to minimize self-heating effect.

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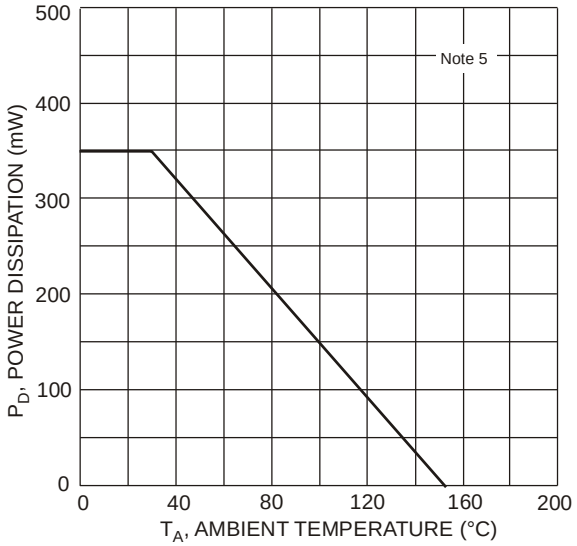


Figure 1 Power Derating Curve

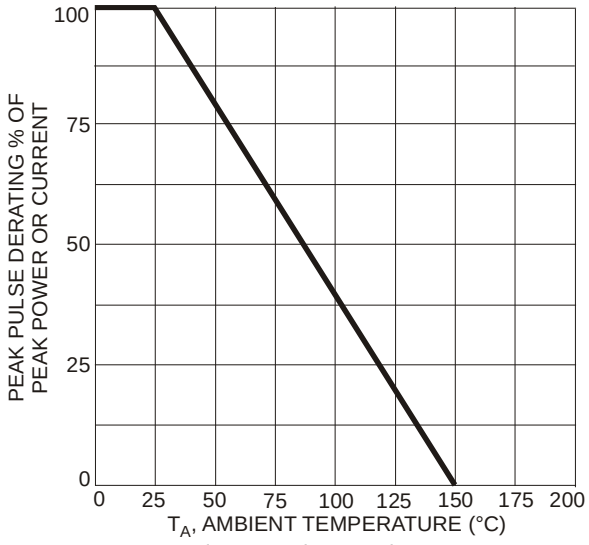


Figure 2 Pulse Derating Curve

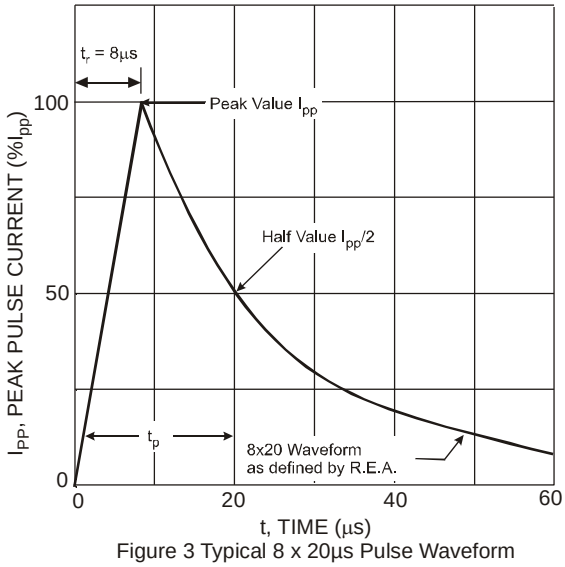


Figure 3 Typical 8 x 20μs Pulse Waveform

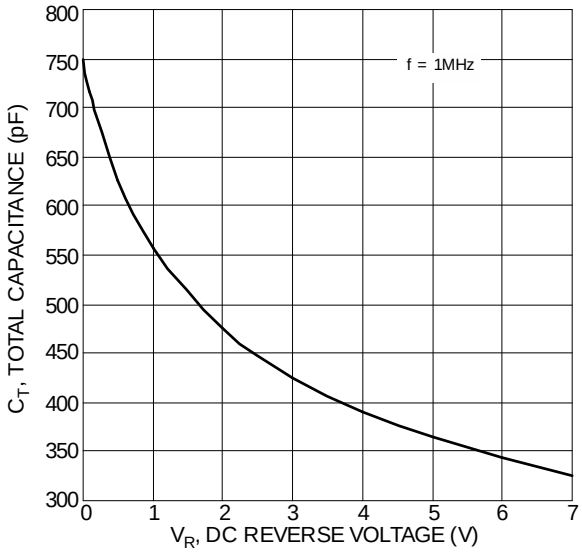


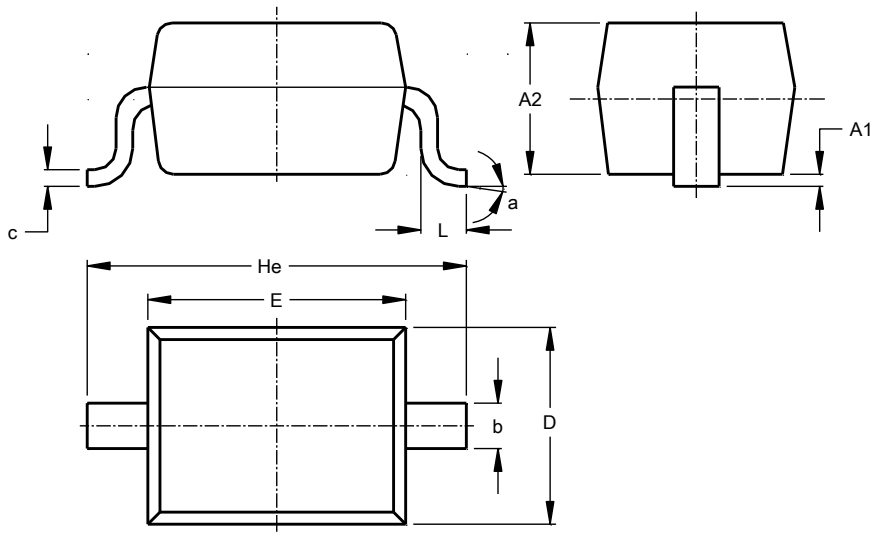
Figure 4 Typical Junction Capacitance

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Package Outline Dimensions

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

SOD323

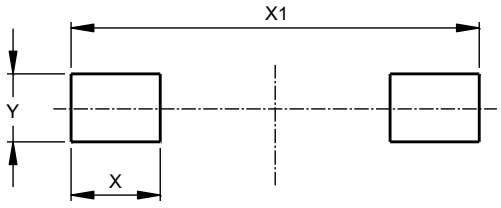


SOD323			
Dim	**Min**	**Max**	**Typ**
A1	--	0.10	0.05
A2	1.00	1.10	1.05
b	0.25	0.35	0.30
c	0.10	0.15	0.11
D	1.20	1.40	1.30
E	1.60	1.80	1.70
He	2.30	2.70	2.50
L	0.20	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

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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