

## Features

- 600 Watts Peak Pulse Power ( $t_p = 8 \times 20 \mu s$ )
- IEC 61000-4-2 (ESD): Air – 30kV, Contact – 30kV
- IEC 61000-4-2 (ESD), HBM – 16kV
- Typically Used at Computer Interface Protection, Data Line and Power Line Protection
- **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
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 <sup>e3</sup>
- Weight: 0.004 grams (Approximate)

SOD323



Top View



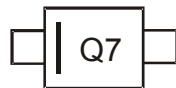
Device Schematic

## Ordering Information (Note 4)

Product	Compliance	Marking	Reel size(inches)	Tape width(mm)	Quantity per reel
D12V0H1U2WS-7	AEC-Q101	Q7	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](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



Q7 = Product Type Marking Code  
Line Denotes Pin 1

## Maximum Ratings (@ $T_A = +25^\circ C$ , unless otherwise specified.)

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	$P_{PP}$	600	W	8/20 $\mu s$ , Per Figure 3
Peak Pulse Current	$I_{PP}$	25	A	8/20 $\mu s$ , Per Figure 3
ESD Protection – Contact Discharge	$V_{ESD\_Contact}$	$\pm 30$	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	$V_{ESD\_Air}$	$\pm 30$	kV	Standard IEC 61000-4-2
ESD Protection – Human Body Model	$V_{ESD\_HBM}$	$\pm 16$	kV	Standard IEC 61000-4-2

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	$P_D$	200	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	625	$^{\circ}C/W$
Operating Temperature Range	$T_J$	-55 to +125	$^{\circ}C$
Storage Temperature Range	$T_{STG}$	-65 to +150	$^{\circ}C$

## Electrical Characteristics (@ $T_A = +25^{\circ}C$ , unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Working Voltage	$V_{RWM}$	—	—	12.0	V	—
Reverse Current (Note 6)	$I_R$	—	10	100	nA	$V_R = V_{RWM} = 12.0V$
Reverse Breakdown Voltage	$V_{BR}$	13.3	—	15.75	V	$I_R = 1mA$
Reverse Clamping Voltage	$V_{CL}$	—	—	19	V	$I_{PP} = 5A, t_p = 8/20\mu s$
		—	—	22		$I_{PP} = 15A, t_p = 8/20\mu s$
		—	—	24		$I_{PP} = 25A, t_p = 8/20\mu s$
Capacitance	$C_T$	—	180	—	pF	$V_R = 0V, f = 1MHz$

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

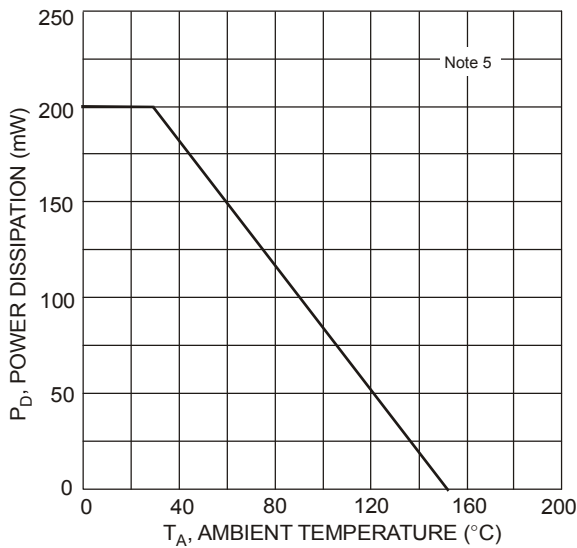


Figure 1 Power Derating Curve

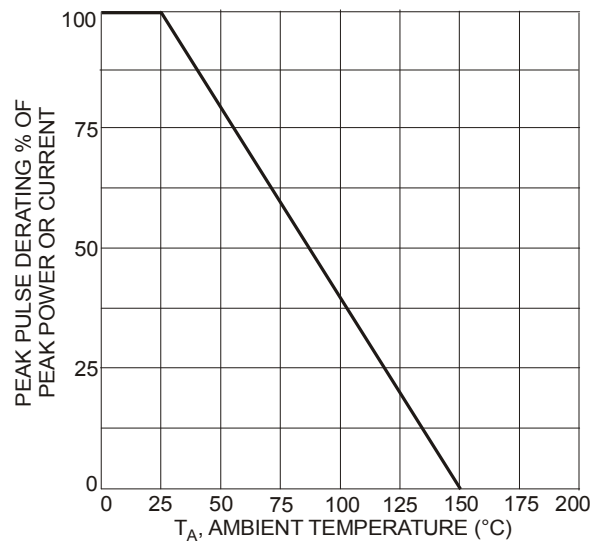


Figure 2 Power Dissipation vs. Ambient Temperature

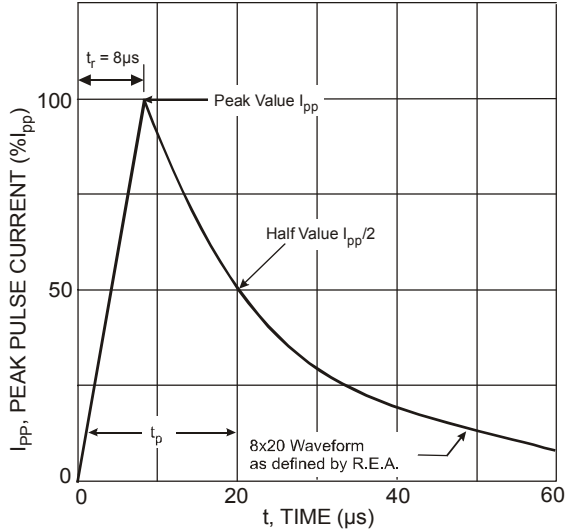


Figure 3 Typical 8 x 20µs Pulse Waveform

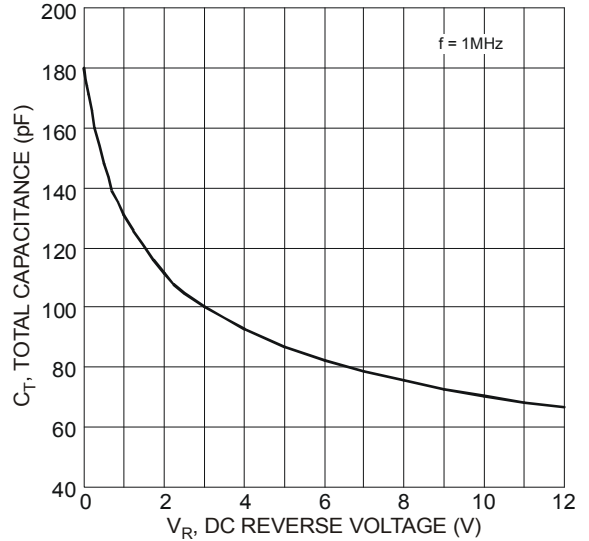


Figure 4 Typical Total Capacitance

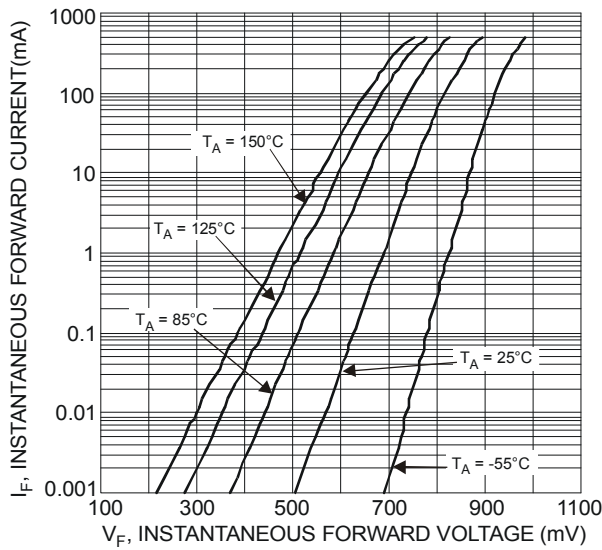


Figure 5 Typical Forward Characteristics

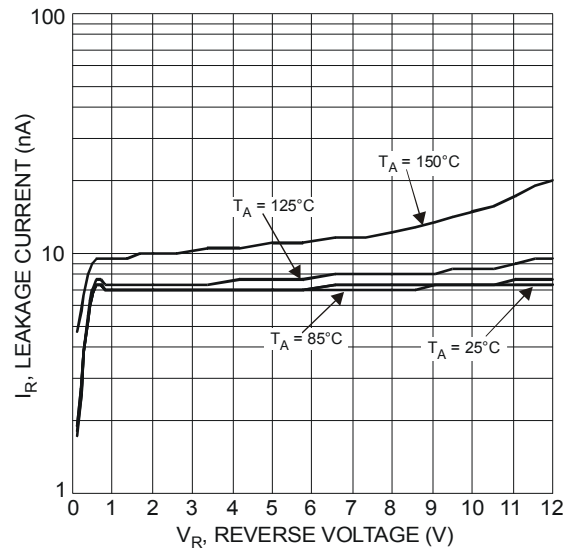
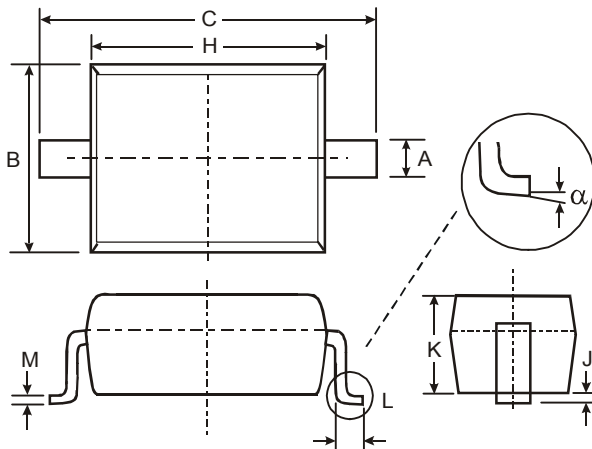


Figure 6 Typical Reverse Characteristics

### Package Outline Dimensions

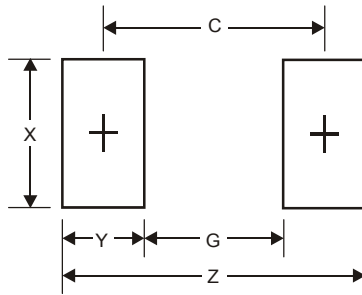
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



SOD323		
Dim	Min	Max
A	0.25	0.35
B	1.20	1.40
C	2.30	2.70
H	1.60	1.80
J	0.00	0.10
K	1.0	1.1
L	0.20	0.40
M	0.10	0.15
α	0°	8°
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)
Z	3.75
G	1.05
X	0.65
Y	1.35
C	2.40

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