



**THE DATASHEET OF
ACPL-K312-560E**



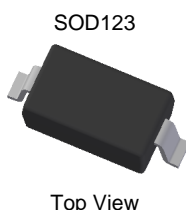
Features

- Fast Switching Speed
- Low Forward Voltage: Maximum of 0.715V at 1mA
- Fast Reverse Recovery: Maximum of 4ns
- Low Capacitance: Maximum of 2pF
- Surface Mount Package Ideally Suited for Automated Insertion
- For General Purpose Switching Applications
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **The 1N4148WQ is suitable for automotive applications requiring specific change control; this part is AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.**

<https://www.diodes.com/quality/product-definitions/>

Mechanical Data

- Package: SOD123
- Package 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)
- Polarity: Cathode Band
- Weight: 0.01 grams (Approximate)

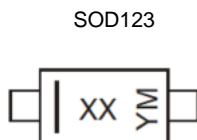


Ordering Information (Note 4)

Part Number	Package	Packaging	
		Qty.	Carrier
BAV16W-7-F	SOD123	3,000	Tape & Reel
1N4148W-7-F	SOD123	3,000	Tape & Reel
1N4148WQ-7-F	SOD123	3,000	Tape & Reel
1N4148W-13-F	SOD123	10,000	Tape & Reel
1N4148WQ-13-F	SOD123	10,000	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



xx = Product Type Marking Code (T4)
 YM = Date Code Marking
 Y or Ȳ = Year (ex: 1 = 2021)
 M = Month (ex: 9 = September)

Date Code Key

Year	2001	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Code	M	I	J	K	L	M	N	P	R	S	T
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

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

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_R		
RMS Reverse Voltage	$V_{R(RMS)}$	71	V
Forward Continuous Current	I_{FM}	300	mA
Non-Repetitive Peak Forward Surge Current	I_{FSM}	@ $t = 1.0\mu\text{s}$	2.0
		@ $t = 1.0\text{s}$	1.0

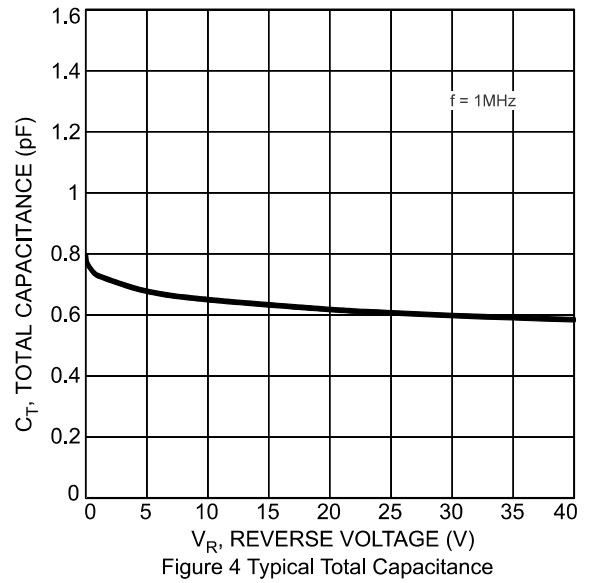
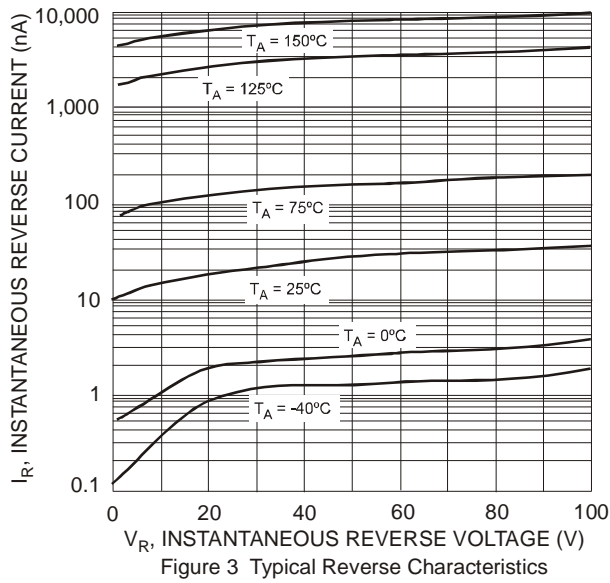
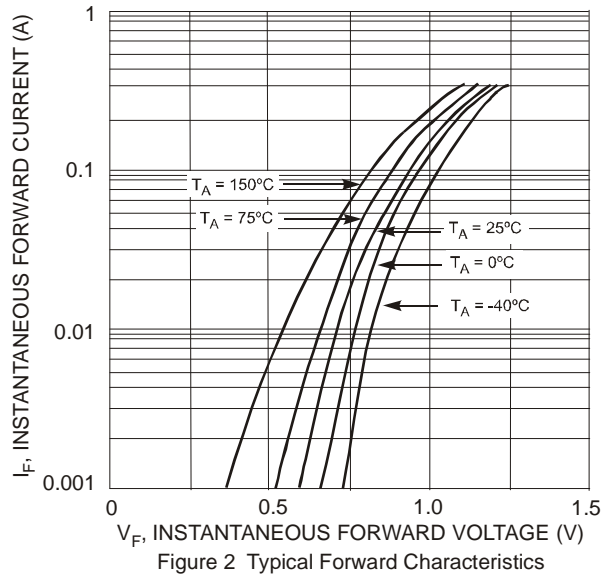
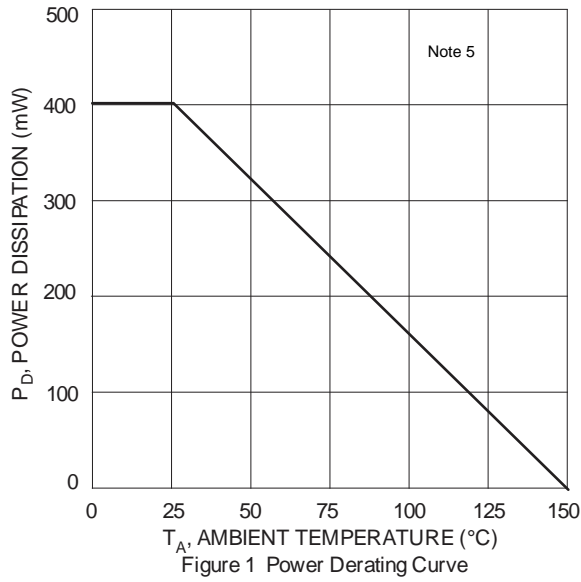
Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	400	mW
Thermal Resistance Junction to Ambient Air (Note 5)	$R_{\theta JA}$	315	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

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

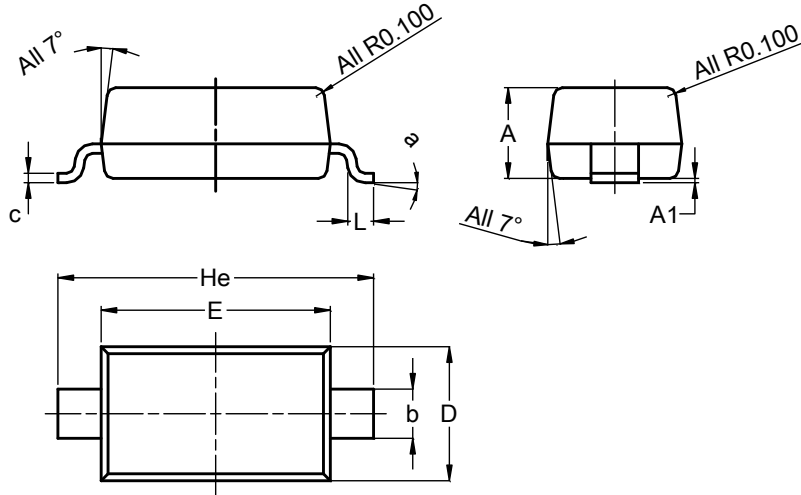
Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	100	—	V	$I_R = 1.0\mu\text{A}$
Forward Voltage	V_{FM}	—	0.715	V	$I_F = 1.0\text{mA}$
			0.855		$I_F = 10\text{mA}$
			1.0		$I_F = 50\text{mA}$
			1.25		$I_F = 150\text{mA}$
Peak Reverse Current (Note 6)	I_{RM}	—	1.0	μA	$V_R = 75\text{V}$
			50	μA	$V_R = 75\text{V}, T_J = +150^\circ\text{C}$
			30	μA	$V_R = 25\text{V}, T_J = +150^\circ\text{C}$
			25	nA	$V_R = 20\text{V}$
Total Capacitance	C_T	—	2.0	pF	$V_R = 0, f = 1.0\text{MHz}$
Reverse Recovery Time	t_{rr}	—	4.0	ns	$I_F = I_R = 10\text{mA}$, $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$

Notes: 5. Part mounted on FR-4 PC board, double-sided, with 3oz copper plating and with anode and cathode terminal pad dimensions of 2" x 2".
6. Short duration pulse test used to minimize self-heating effect.



Package Outline Dimensions

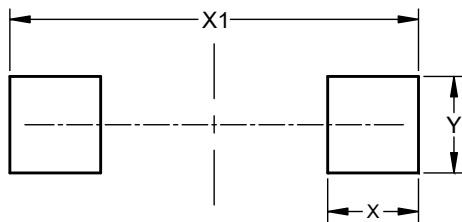
Please see <http://www.diodes.com/package-outlines.html> for the latest version.



SOD123			
Dim	Min	Max	Typ
A	1.00	1.35	1.05
A1	0.00	0.10	0.05
b	0.52	0.62	0.57
c	0.10	0.15	0.11
D	1.40	1.70	1.55
E	2.55	2.85	2.65
He	3.55	3.85	3.65
L	0.25	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.



Dimensions	Value (in mm)
X	0.900
X1	4.050
Y	0.950

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