



BAS16 / MMBD4148 / MMBD914

SURFACE MOUNT SWITCHING DIODE

Features

- Fast Switching Speed
- 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 (Notes 3 & 4)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

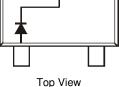
- Case: SOT23
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Alloy 42 Leadframe (Lead Free Plating).

Solderable per MIL-STD-202, Method 208 @3

- Polarity: See Diagram
- Weight: 0.008 grams (Approximate)







Internal Schematic

Ordering Information (Note 5)

Part Number	Compliance	Case	Packaging
BAS16-7-F	Standard	SOT23	3,000/Tape & Reel
BAS16-13-F	Standard	SOT23	10,000/Tape & Reel
BAS16Q-7-F	Automotive	SOT23	3,000/Tape & Reel
BAS16Q-13-F	Automotive	SOT23	10,000/Tape & Reel
MMBD4148-7-F	Standard	SOT23	3,000/Tape & Reel
MMBD4148-13-F	Standard	SOT23	10,000/Tape & Reel
MMBD914-7-F	Standard	SOT23	3,000/Tape & Reel
MMBD914-13-F	Standard	SOT23	10,000/Tape & Reel

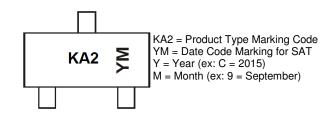
Notes:

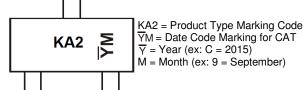
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green"

4. Product manufactured with Date Code 9W (week 39, 2009) and newer are built with Green Molding Compound. Product manufactured prior to Date Code 9W are built with Non-Green Molding Compound and may contain Halogens or Sb₂O₃ Fire Retardants.

5. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information





Date Code Key

Year	2002	2003		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Code	Ν	Р		Y	Z	А	В	С	D	E	F	G	Н
Month	Jan	Feb	Mar	Apr	Ма	y Ji	un	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5		6	7	8	9	0	Ν	D

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.



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

Characteristic		Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage		V _{RM}	100	V
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V _{RRM} V _{RWM} V _R	75	v
RMS Reverse Voltage		V _{R(RMS)}	53	V
Forward Continuous Current (Note 6)		I _{FM}	300	mA
Average Rectified Output Current (Note 6)		lo	200	mA
Non-Repetitive Peak Forward Surge Current	@ t = 1.0µs @ t = 1.0s	IFSM	2.0 1.0	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	PD	350	mW
Thermal Resistance Junction to Ambient Air (Note 6)	R _{θJA}	357	℃/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

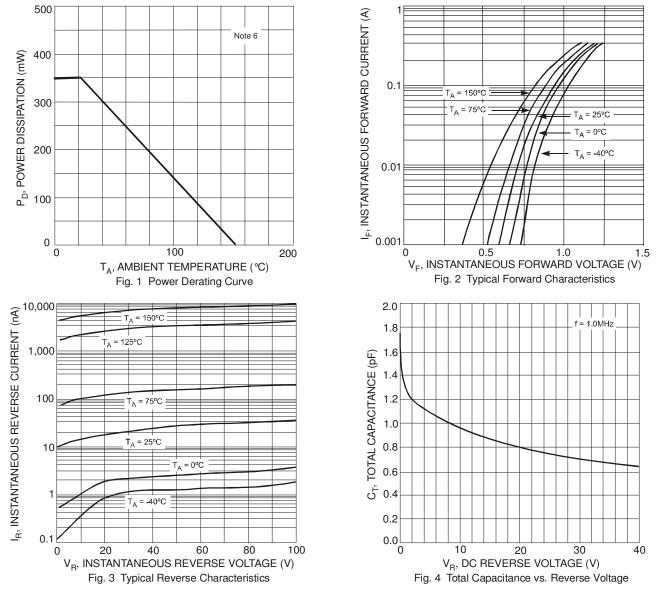
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	V _{(BR)R}	75	—	V	$I_R = 100 \mu A$
Forward Voltage	V _F	_	0.715 0.855 1.0 1.25	v	IF = 1.0mA IF = 10mA IF = 50mA IF = 150mA
Leakage Current (Note 7)	I _R		1.0 50 30 25	μΑ μΑ μΑ nA	$ \begin{array}{l} V_{R} = 75V \\ V_{R} = 75V, T_{J} = +150^{\circ}\!$
Total Capacitance	CT	_	2.0	pF	V _R = 0, f = 1.0MHz
Reverse Recovery Time	t _{rr}	_	4.0	ns	$\begin{split} I_F &= I_R = 10 m A, \\ I_{rr} &= 0.1 \times I_R, \ R_L = 100 \Omega \end{split}$

Notes: 6. Device mounted on glass epoxy PCB 1.6" x 1.6" x 0.06"; mounting pad for the cathode lead min. 0.93in². 7. Short duration pulse test used to minimize self-heating effect.

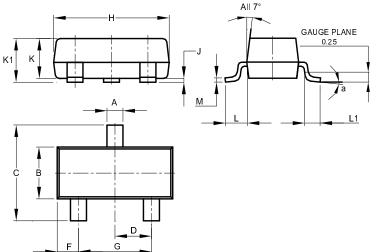


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Package Outline Dimensions

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



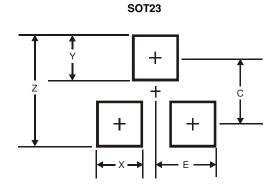
SOT23						
Dim	Min	Max	Тур			
Α	0.37	0.51	0.40			
В	1.20	1.40	1.30			
С	2.30	2.50	2.40			
D	0.89	1.03	0.915			
F	0.45	0.60	0.535			
G	1.78	2.05	1.83			
Н	2.80	3.00	2.90			
J	0.013	0.10	0.05			
К	0.890	1.00	0.975			
K1	0.903	1.10	1.025			
L	0.45	0.61	0.55			
L1	0.25	0.55	0.40			
М	0.085	0.150	0.110			
а	8°					
All	All Dimensions in mm					

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Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
Z	2.9
Х	0.8
Y	0.9
С	2.0
E	1.35

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