





HIGH VOLTAGE SURFACE MOUNT SWITCHING DIODE

Features

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automated Insertion
- High Reverse Breakdown Voltage
- Dual Series Configuration
- Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 3 and 4)
- Qualified to AEC-Q101 Standards for High Reliability

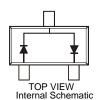
Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: See Diagram
- Ordering Information: See Page 2
- Marking Information: See Page 2
- Weight: 0.008 grams (approximate)

SOT-23



TOP VIEW



Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	300	V
Working Peak Reverse Voltage DC Blocking Voltage	V_{RWM}	240	V
RMS Reverse Voltage	V _{R(RMS)}	170	V
Forward Continuous Current (Note 2)	I _{FM}	225	mA
Peak Repetitive Forward Current (Note 2)	I _{FRM}	625	mA
Non-Repetitive Peak Forward Surge Current @ t = 1.0μs @ t = 1.0s	I _{FSM}	4.0 1.0	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 2)	P_{D}	350	mW
Thermal Resistance Junction to Ambient Air (Note 2)	$R_{ heta JA}$	357	°C/W
Operating and Storage Temperature Range	T_J , T_{STG}	-65 to +150	°C

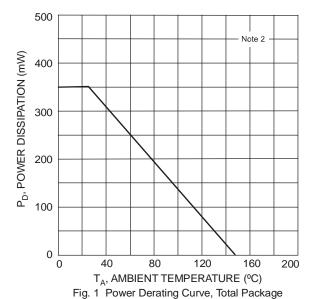
Electrical Characteristics @T_A = 25°C unless otherwise specified

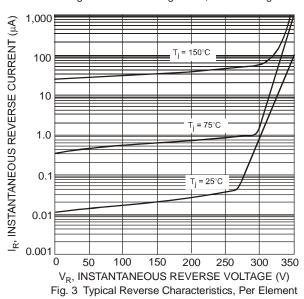
Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	300	_	V	$I_R = 100 \mu A$
Forward Voltage	V _F	_	0.87 1.0	I \/	$I_F = 20\text{mA}$ $I_F = 100\text{mA}$
Reverse Current (Note 1)	I _R	_	100		V _R = 240V V _R = 240V, T _J = 150°C
Total Capacitance	Ст		5.0	pF	$V_R = 0, f = 1.0MHz$
Reverse Recovery Time	t _{rr}	_	50	ns	$I_F = I_R = 30\text{mA},$ $I_{rr} = 3.0\text{mA}, R_L = 100\Omega$

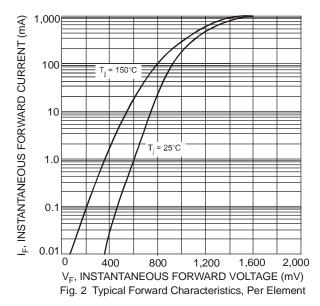
Notes:

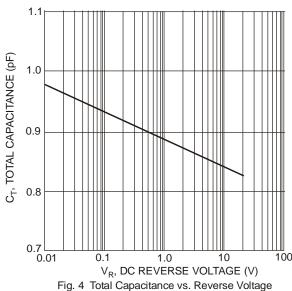
- 1. Short duration pulse test used to minimize self-heating effect.
- 2. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
- 3. No purposefully added lead. Halogen and Antimony Free.
- Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb₂O₃ Fire Retardants.











Per Element

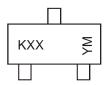
June 2008

Ordering Information (Note 5)

Part Number	Case	Packaging
MMBD2004S-7-F	SOT-23	3000/Tape & Reel

Notes: 5. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



Kxx = Product Type Marking Code (KA9 or KAE) YM = Date Code Marking

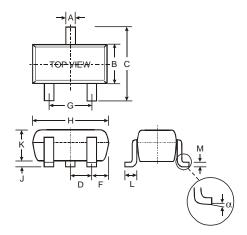
Y = Year ex: T = 2006 M = Month ex: 9 = September

Date Code Key

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	М	N	Р	R	S	Т	U	V	W	Х	Υ	Z
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D

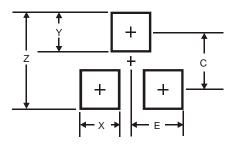


Package Outline Dimensions



SOT-23				
Dim	Min	Max		
Α	0.37	0.51		
В	1.20	1.40		
C	2.30	2.50		
D	0.89	1.03		
F	0.45	0.60		
G	1.78	2.05		
Н	2.80	3.00		
7	0.013	0.10		
K	0.903	1.10		
L	0.45	0.61		
M	0.085	0.180		
α	0°	8°		
All Dimensions in mm				

Suggested Pad Layout



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

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