





HIGH VOLTAGE DUAL SWITCHING DIODE

Features

- Fast Switching Speed: 50ns
- Surface Mount Package Ideally Suited for Automated Insertion
- High Reverse Breakdown Voltage Rating: 400V
- Lead Free by Design/RoHS Compliant (Note 1)
- "Green" Device (Note 2)

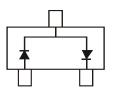
Mechanical Data

- Case: SOT23
- Case Material: Molded Plastic. "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish Matte Tin annealed over Alloy 42 leadframe.
 Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Weight: 0.008 grams (approximate)

SOT23



Top View



Top View Internal Schematic

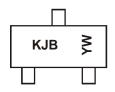
Ordering Information (Note 3)

Part Number	Case	Packaging
MMBD5004S-7	SOT23	3000/Tape & Reel

Notes:

- 1. No purposefully added lead.
- 2. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com.
- 3. For packaging details, go to our website at http://www.diodes.com.

Marking Information



KJB = Product Type Marking Code YM = Date Code Marking

Y = Year (ex: Y = 2011) M = Month (ex: 9 = September)

Date Code Key

Year	2010		2011	2012		2013	2014		2015	2016		2017
Code	X		Y	Z		A	В		С	D		E
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



Maximum Ratings @TA = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Repetitive Peak Reverse Voltage		V_{RRM}	400	V
Working Peak Reverse Voltage DC Blocking Voltage		V _{RWM} V _R	350	V
RMS Reverse Voltage		V _{R(RMS)}	247	V
Forward Continuous Current (Note 4)		I _F	300	mA
Peak Repetitive Forward Current (Note 4)		I _{FRM}	625	mA
Non-Repetitive Peak Forward Surge Current	@ t = 1.0μs @ t = 1.0ms	I _{FSM}	5 3	А

Thermal Characteristics

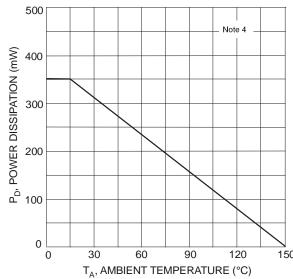
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 4) (See figure 1)	P_{D}	350	mW
Thermal Resistance Junction to Ambient Air (Note 4)	$R_{ hetaJA}$	357	°C/W
Operating and Storage Temperature Range	T_J,T_STG	-55 to +150	°C

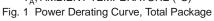
Electrical Characteristics @T_A = 25°C unless otherwise specified

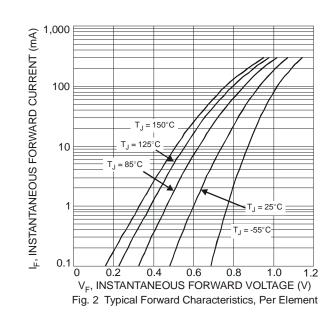
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 5)	$V_{(BR)R}$	400		_	V	$I_R = 150 \mu A$
				0.9		$I_F = 20 \text{mA}$
Forward Voltage	V _F	_	_	1.05		$I_F = 100 \text{mA}$
				1.275		$I_F = 200 \text{mA}$
Reverse Current (Note 5)		_		150	nA	V _R = 240V
Reverse Current (Note 3)	IR		_	5	μΑ	$V_{R} = 360V$
Total Capacitance	C _T	_	0.65	2.0	pF	$V_R = 0V, f = 1.0MHz$
Reverse Recovery Time	+		_	50	ns	$I_F = I_R = 30 \text{mA},$
Neverse Necovery Time	t _{rr}					$I_F = I_R = 30 \text{mA},$ $I_{rr} = 3.0 \text{mA}, R_L = 100 \Omega$

Notes:

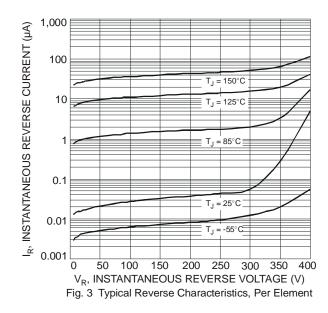
- 4. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at http://www.diodes.com.
- 5. Short duration pulse test used to minimize self-heating effect.

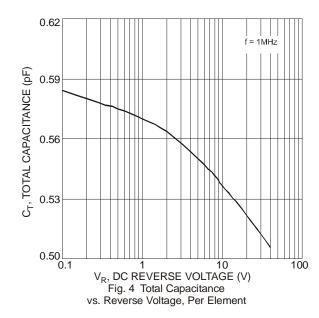




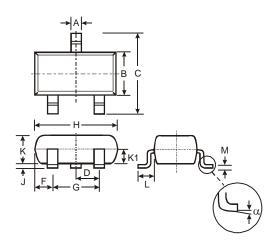






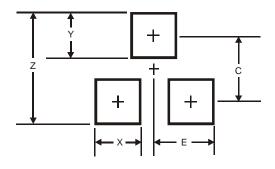


Package Outline Dimensions



	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					
K	0.903	1.10	1.00					
K1	-	-	0.400					
L	0.45	0.61	0.55					
M	0.085	0.18	0.11					
α	0°	8°	-					
All	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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 - 2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.
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