

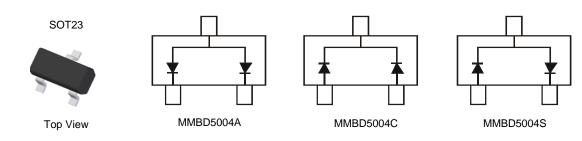
HIGH VOLTAGE DUAL SWITCHING DIODE

Features

- Fast Switching Speed: 50ns
- High Reverse Breakdown Voltage Rating: 400V
- Low Leakage Current
- Surface Mount Package Ideally Suited for Automated Insertion
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)

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)



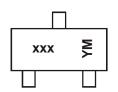
Ordering Information (Note 4)

Part Number	Case	Packaging
MMBD5004S-7	SOT23	3,000/Tape & Reel
MMBD5004C-7	SOT23	3,000/Tape & Reel
MMBD5004A-7	SOT23	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 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 http://www.diodes.com/products/packages.html.

Marking Information



xxx = Product Type Marking Code ex. KJB = MMBD5004S CJK = MMBD5004C AJK = MMBD5004A YM = Date Code Marking

Y = Year (ex: E = 2017)

M = Month (ex: 9 = September)

Date Code Key

Year	2010		2011			2016	2017		2018	2019		2020
Code	Х		Υ			D	Е		F	G		Н
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 (@T_A = +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	٧
RMS Reverse Voltage		V _{R(RMS)}	247	V
Forward Continuous Current (Note 5)		l _F	300	mA
Peak Repetitive Forward Current (Note 5)		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 5) (See Figure 1)	P_{D}	350	mW
Thermal Resistance Junction to Ambient Air (Note 5)	$R_{ heta JA}$	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 6)	$V_{(BR)R}$	400			V	$I_R = 150 \mu A$
Forward Voltage	V _F	_	_	0.93 1.10	V	I _F = 20mA I _F = 100mA
			—	1.29		$I_F = 200 \text{mA}$
Reverse Current (Note 6)	I _R	_	_	150 5	nA	V _R = 240V
				3	μΑ	$V_R = 360V$
Total Capacitance	Ст	_	0.65	2.0	pF	$V_R = 0V$, $f = 1.0MHz$
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:

^{5.} Part mounted on FR-4 substrate, 1" x 1" 2oz cu pad layout.6. Short duration pulse test used to minimize self-heating effect.



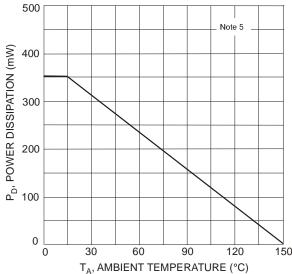
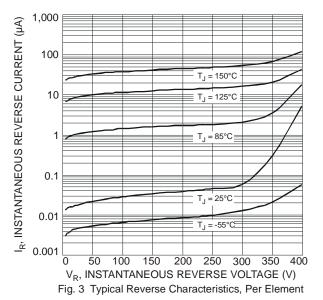
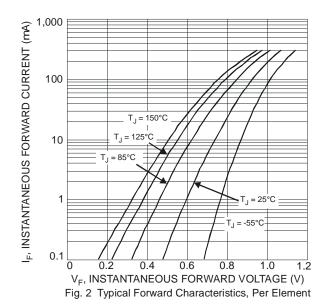
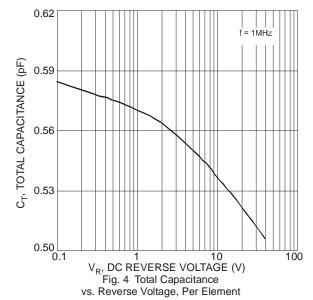


Fig. 1 Power Derating Curve, Total Package





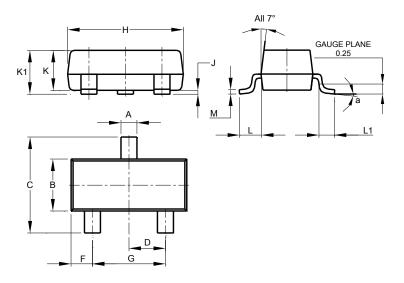




Package Outline Dimensions

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

SOT23

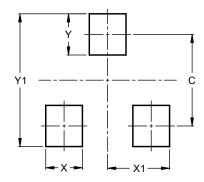


SOT23						
Dim	Min	Max	Тур			
Α	0.37	0.51	0.40			
В	1.20	1.40	1.30			
C	2.30	2.50	2.40			
D	0.89	1.03	0.915			
F	0.45	0.60	0.535			
G	1.78	2.05	1.83			
Η	2.80	3.00	2.90			
J	0.013	0.10	0.05			
K	0.890	1.00	0.975			
K1	0.903	1.10	1.025			
٦	0.45	0.61	0.55			
L1	0.25	0.55	0.40			
М	0.085	0.150	0.110			
а	0°	8°				
All Dimensions in mm						

Suggested Pad Layout

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

SOT23



Dimensions	Value (in mm)
С	2.0
Х	0.8
X1	1.35
Y	0.9
Y1	2.9



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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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