

**HIGH VOLTAGE SURFACE MOUNT SWITCHING DIODE ARRAY**

NEW PRODUCT

**Features**

- Two Series Diode Circuits Connect to Form Full Wave Bridge
- Fast Switching Speed
- Low Capacitance
- 400V Reverse Breakdown Voltage Rating
- **Lead Free/RoHS Compliant Version (Note 3)**
- **"Green" Device (Note 4)**

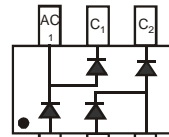
**Mechanical Data**

- Case: SOT-26
- Case Material: Molded Plastic, "Green" Molding Compound, Note 4. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Copper leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.016 grams (approximate)

SOT-26



TOP VIEW


 TOP VIEW  
Internal Schematic

**Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	400	V
Working Peak Reverse Voltage	V <sub>RWM</sub>	350	V
DC Blocking Voltage	V <sub>R</sub>	350	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	247	V
Forward Continuous Current	I <sub>F</sub>	225	mA
Peak Repetitive Forward Current	I <sub>FRM</sub>	625	mA
Non-Repetitive Peak Forward Surge Current	I <sub>FSM</sub>	2.0 1.0	A
		@ t = 1.0ms	
		@ t = 1.0s	

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	P <sub>D</sub>	350	mW
Thermal Resistance Junction to Ambient Air (Note 1)	R <sub>θJA</sub>	357	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

**Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	V <sub>(BR)R</sub>	400	—	—	V	I <sub>R</sub> = 150μA
Forward Voltage	V <sub>F</sub>	—	—	0.87 1.0 1.25	V	I <sub>F</sub> = 20mA I <sub>F</sub> = 100mA I <sub>F</sub> = 200mA
Reverse Current (Note 2)	I <sub>R</sub>	—	—	100 100 5	nA μA μA	V <sub>R</sub> = 240V V <sub>R</sub> = 240V, T <sub>J</sub> = 150°C V <sub>R</sub> = 360V
Total Capacitance	C <sub>T</sub>	—	0.7	2.0	pF	V <sub>R</sub> = 0V, f = 1.0MHz
Reverse Recovery Time	t <sub>rr</sub>	—	—	50	ns	I <sub>F</sub> = I <sub>R</sub> = 30mA, I <sub>rr</sub> = 3.0mA, R <sub>L</sub> = 100Ω

- Notes:
1. Part mounted on polyimide substrate PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. Short duration pulse test used to minimize self-heating effect.
  3. No purposefully added lead.
  4. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).

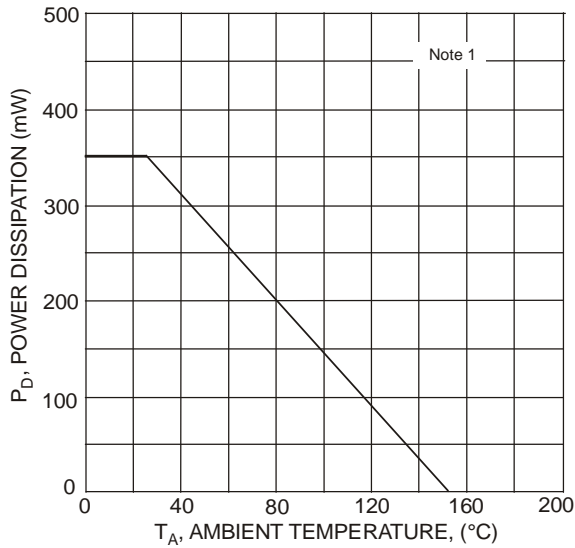


Fig. 1 Power Derating Curve, Total Package

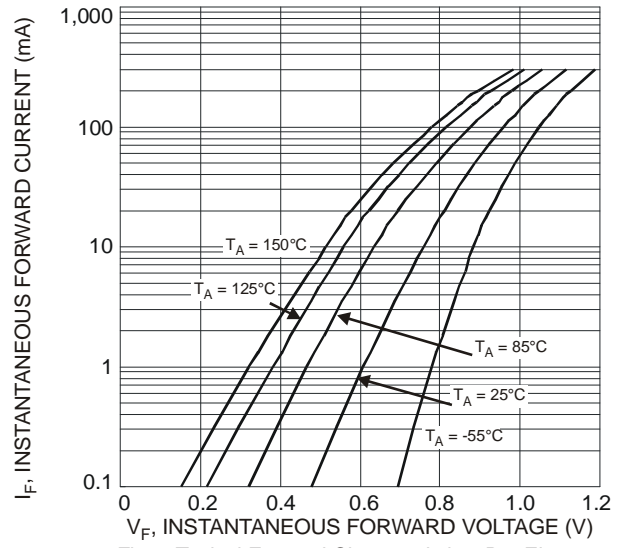


Fig. 2 Typical Forward Characteristics, Per Element

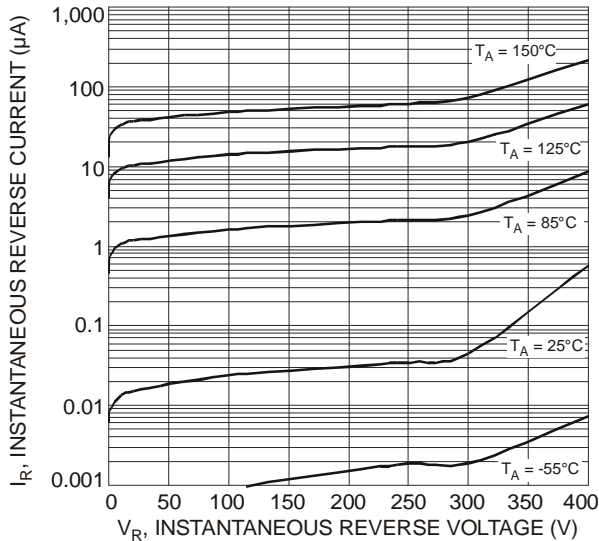


Fig. 3 Typical Reverse Characteristics, Per Element

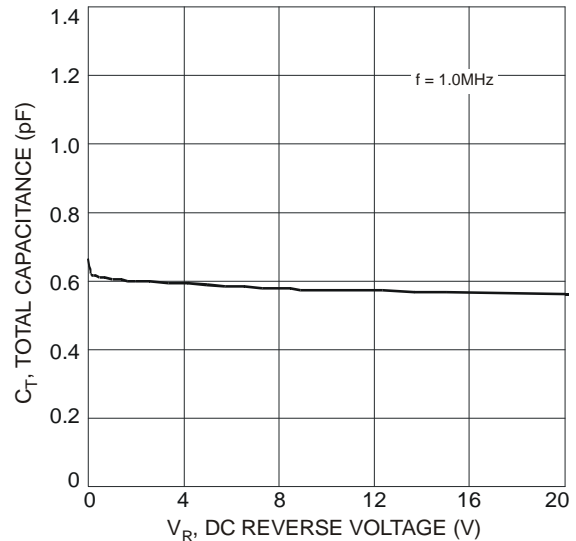


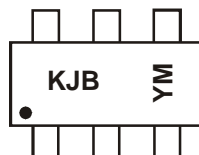
Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

**Ordering Information** (Note 5)

Part Number	Case	Packaging
MMBD5004BRM-7	SOT-26	3000/Tape & Reel

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

**Marking Information**



KJB = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: W = 2009)  
 M = Month (ex: 9 = September)

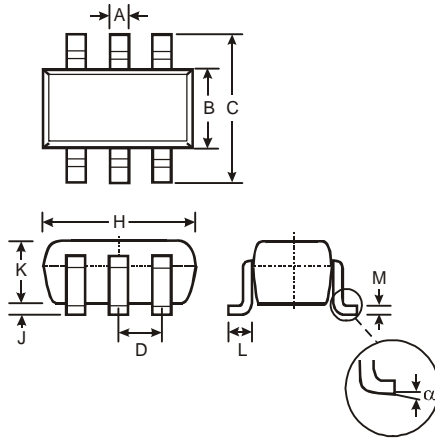
Date Code Key

Year	2009	2010	2011	2012	2013	2014	2015
Code	W	X	Y	Z	A	B	C

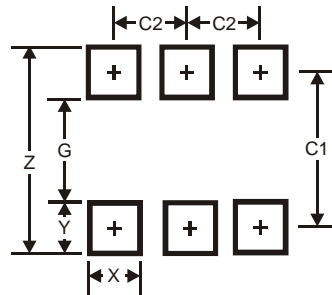
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

**Package Outline Dimensions**



SOT-26			
Dim	Min	Max	Typ
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	—	—	0.95
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
α	0°	8°	—
All Dimensions in mm			

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	3.20
G	1.60
X	0.55
Y	0.80
C1	2.40
C2	0.95

**Application Examples**

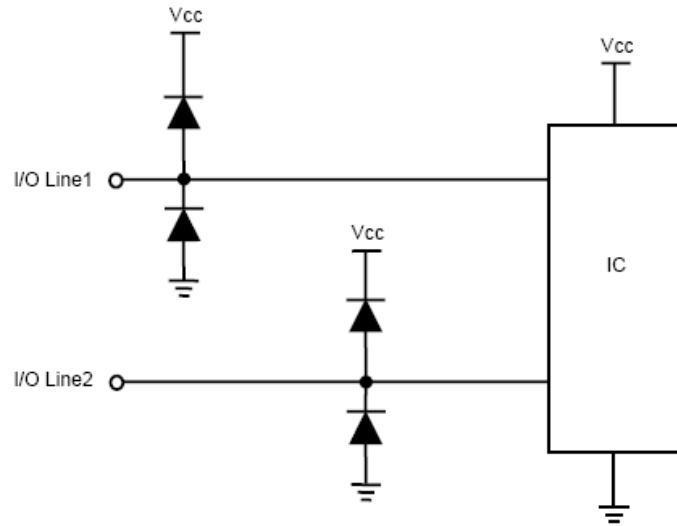


Figure 1. Typical Rail-to-Rail Protection

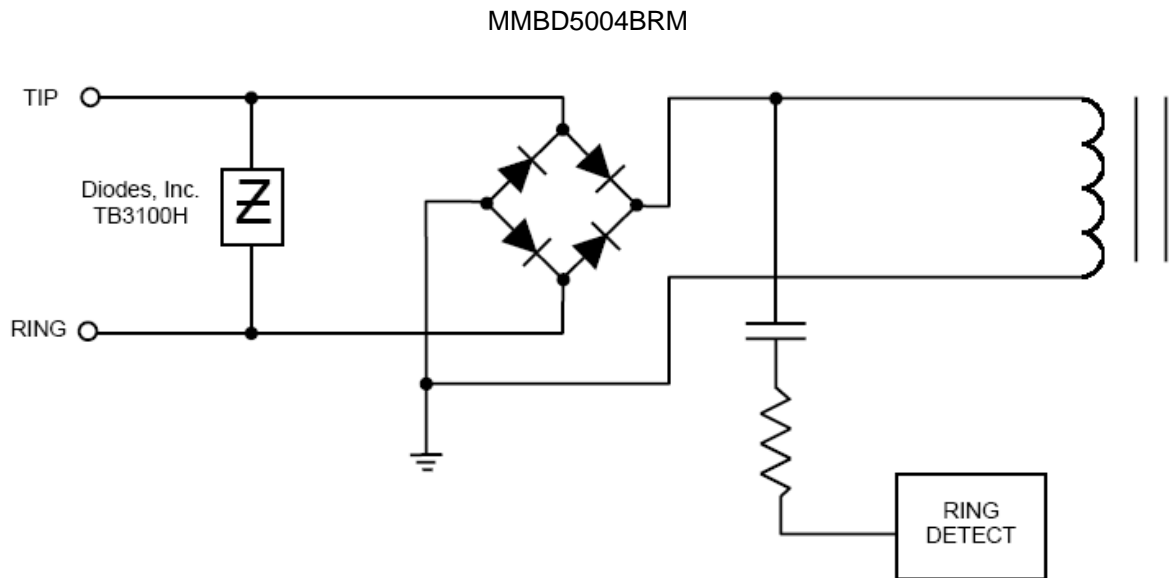


Figure 2. Typical Transformer Coupled Tip and Ring Interface

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