



# DATA SHEET

SEMICONDUCTOR

## MMBD3004A/C

### Features

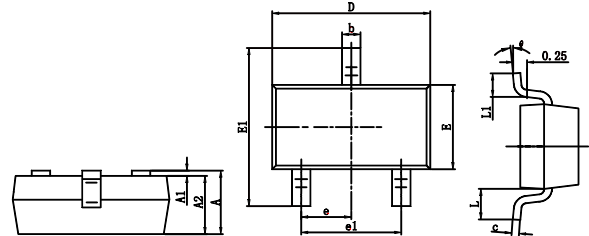
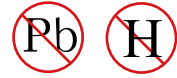
- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automatic Insertion
- High Conductance
- High Reverse Breakdown Voltage Rating
- **Lead Free/RoHS Compliant (Note 3)**

### Mechanical Data

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

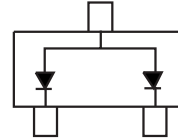
SOT23

Unit: inch(mm)

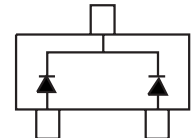


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°		8°	

TOP VIEW



MMBD3004A Marking: KAD



MMBD3004C Marking: KAC

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

Characteristic	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	350	V
Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RWM</sub> V <sub>R</sub>	300	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	212	V
Forward Continuous Current (Note 2)	I <sub>F</sub>	225	mA
Peak Repetitive Forward Current (Note 2)	I <sub>FRM</sub>	625	mA
Non-Repetitive Peak Forward Surge Current @ t = 1.0μs @ t = 1.0s	I <sub>FSM</sub>	4.0 1.0	A
Power Dissipation (Note 2)	P <sub>d</sub>	350	mW
Thermal Resistance Junction to Ambient Air (Note 2)	R <sub>θJA</sub>	357	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

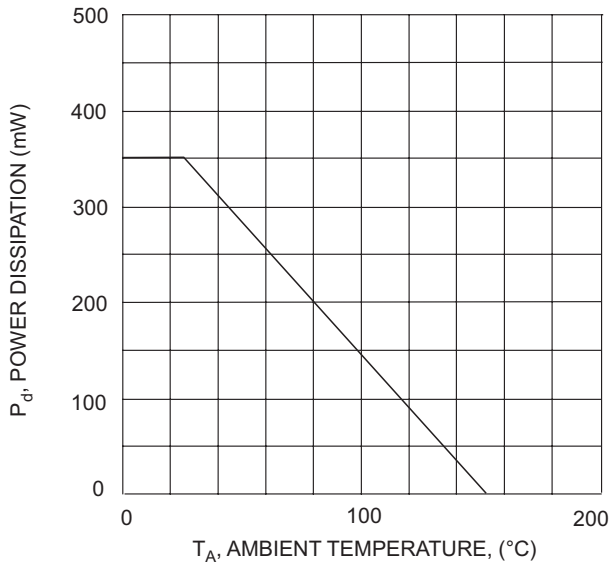
### Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified, per element

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	V <sub>(BR)R</sub>	350	—	—	V	I <sub>R</sub> = 150μA
Forward Voltage (Note 1)	V <sub>F</sub>	—	0.78 0.93 1.03	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 1)	I <sub>R</sub>	—	30 35	100 100	nA μA	V <sub>R</sub> = 240V V <sub>R</sub> = 240V, T <sub>J</sub> = 150°C
Total Capacitance	C <sub>T</sub>	—	1.0	5.0	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

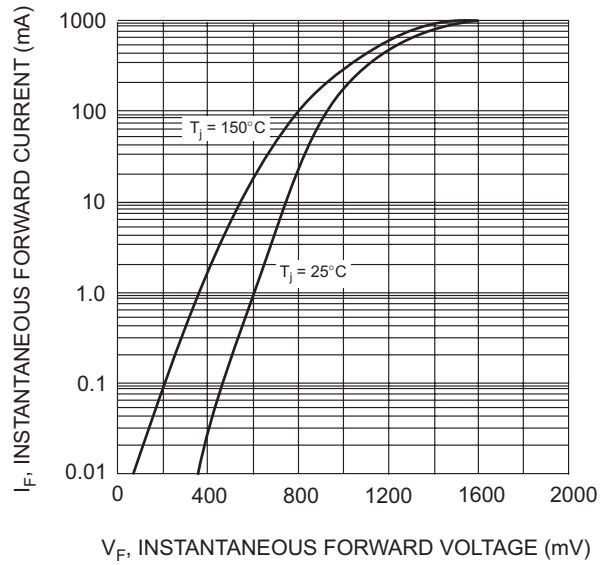
- Notes: 1. Short duration test pulse used to minimize self-heating effect.  
2. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.  
3. No purposefully added lead.

# DEVICE CHARACTERISTICS

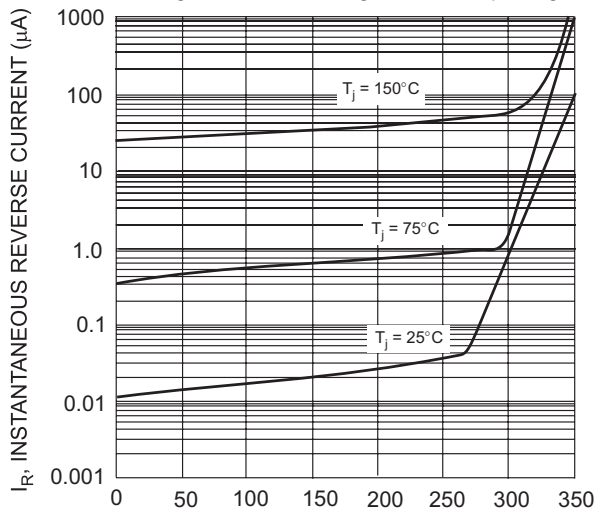
## MMBD3004A/C



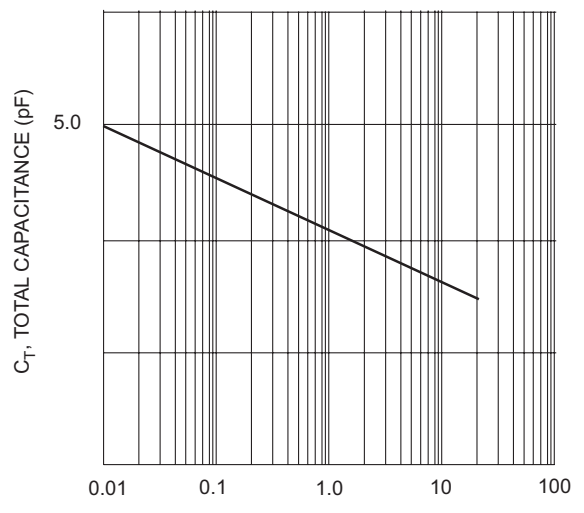
$T_A$ , AMBIENT TEMPERATURE, (°C)  
Fig. 1 Power Derating Curve, total package



$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (mV)  
Fig. 2 Typical Forward Characteristics, per element



$V_R$ , INSTANTANEOUS REVERSE VOLTAGE (V)  
Fig. 3 Typical Reverse Characteristics, per element



$V_R$ , REVERSE VOLTAGE (V)  
Fig. 4 Typical Total Capacitance vs. Reverse Voltage, per element