

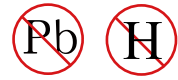


# DATA SHEET

SEMICONDUCTOR

MMBD3004S

## HIGH VOLTAGE SURFACE MOUNT SWITCHING DIODE



### FEATURE

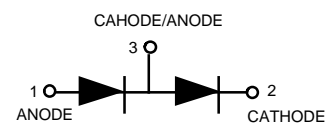
- Fast Switching Speed
- High Conductance
- High Reverse Breakdown Voltage Rating
- We declare that the material of product compliance with RoHS requirements.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

### Ordering Information(Pb-free)

Device	Marking	Shipping
MMBD3004S	KAE	3000/Tape&Reel
MMBD3004S	KAE	10000/Tape&Reel



SOT -23



### Maximum Ratings @ TA=25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	VRRM	350	V
Working Peak Reverse Voltage	VRWM	300	V
DC Blocking Voltage	VR		
RMS Reverse Voltage	VR(RMS)	212	V
Forward Continuous Current(Note 2)	IF	225	mA
Peak Repetitive Forward Current(Note 2)	IFRM	625	mA
Non-Repetitive Peak Forward Surge Current @t=1.0μs	IFSM	4.0	A
@t=1.0s		1.0	
Power Dissipation(Note 2)	Pd	350	mW
Thermal Resistance Junction to Ambient Air(Note 2)	R0JA	357	°C/W
Operating and Storage Temperature Range	Tj, TSTG	-65 to +150	°C

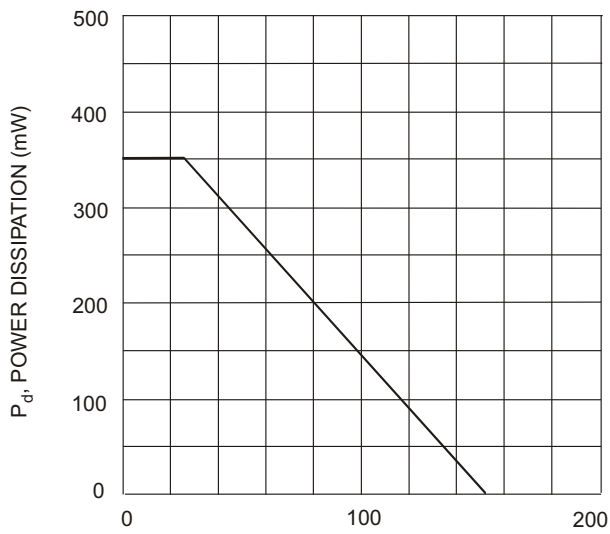
### Electrical Characteristics @ TA=25°C unless otherwise specified, per element

Characteristic	Symbol	Min	Typ	MAX	Unit	Test Condition
Reverse Breakdown Voltage(Note 1)	V(BR)R	350			V	IR=100μA
Forward Voltage(Note 1)	VF		0.78 0.93 1.03	0.87 1.0 1.25	V	IF=20mA IF=100mA IF=200mA
Reverse Current(Note 1)	IR		30 35	100 100	nA μA	VR=240V VR=240V, Tj=150°C
Total Capacitance	CT		1.0	5.0	Pf	VR=0V, f=1.0MHZ
Reverse Recovery Time	Trr			50	ns	IF=IR=30mA Irr=3.0mA, RL=100Ω

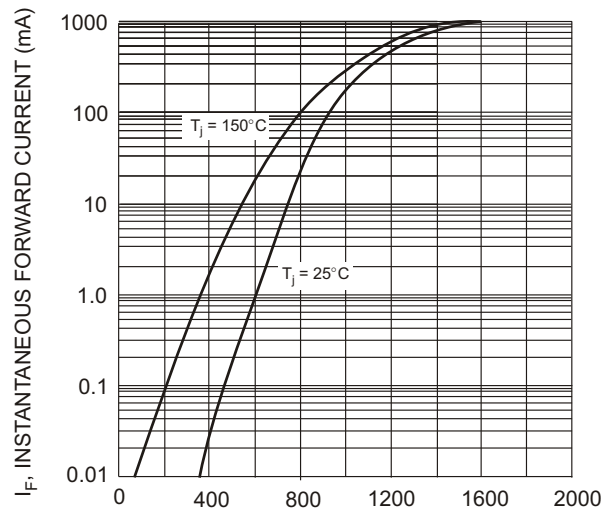
- Notes: 1. Short duration test pulse used to minimize self-heating effect.  
2. Part mounted on FR-4 board with recommended pad layout.

# DEVICE CHARACTERISTICS

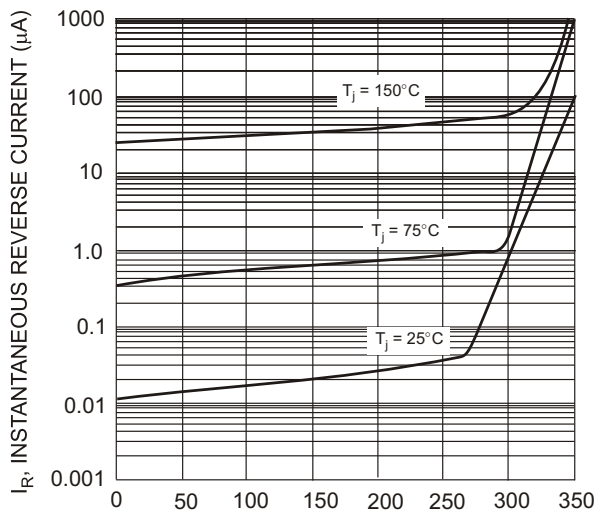
## MMBD3004S



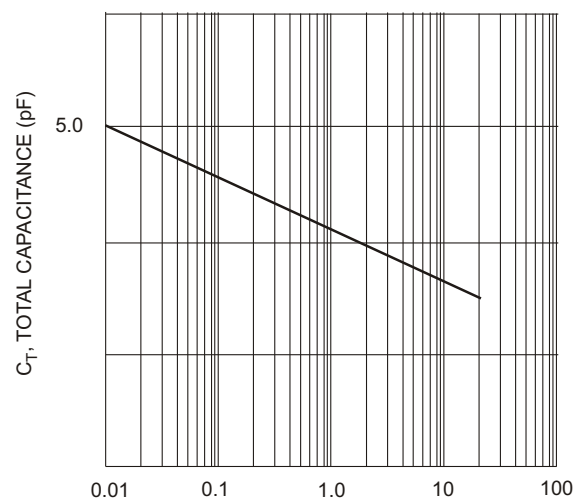
$T_A$ , AMBIENT TEMPERATURE, (°C)  
Fig. 1 Power Derating Curve, total package



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



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



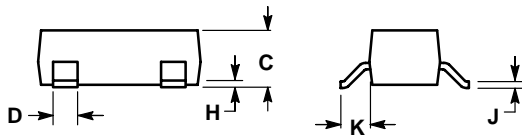
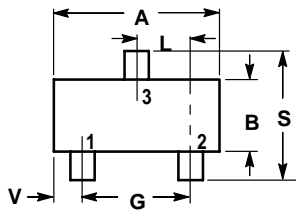
$V_R$ , REVERSE VOLTAGE (V)  
Fig. 4 Typical Total Capacitance vs. Reverse Voltage, per element

# MMBD3004S

## SOT-23

### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

- PIN 1. BASE  
2. EMITTER  
3. COLLECTOR

