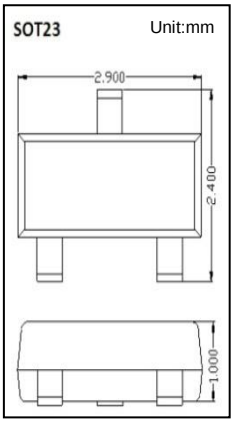
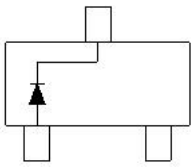
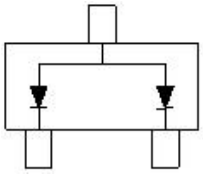
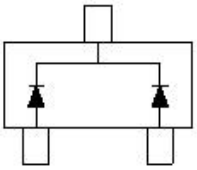
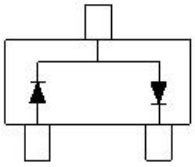
SOT-23 Plastic-Encapsulate Diodes

Features



- Fast Switching Speed
- For General Purpose Switching Applications
- High Conductance
- Low Leakage Current
- Small Outline Surface Mount Package
- RoHS Compliant / Green EMC
- AEC-Q 101 qualified (Automotive grade with suffix " Q ")
- Expsemi electronics

Device Marking Code

MMBD3004	MMBD3004CA	MMBD3004CC	MMBD3004SE
HC	RA	PZ	PY
Internal Structure			
			

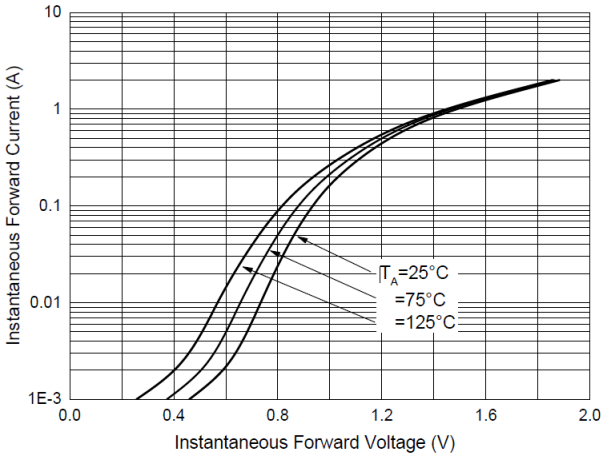
Maximum Ratings (Ta = 25 ℃)

Symbol	Parameter	Value	Units
V_{RRM}	Repetitive Peak Reverse Voltage	350	V
$V_{R(RMS)}$	RMS Reverse Voltage	210	V
V_R	Continuous Reverse Voltage	300	V
I_F	Continuous Forward Current	225	mA
I_{FSM}	Non-Repetitive Peak Forward Surge Current (@t=1.0us)	4	A
	(@t=1.0s)	1	
I_{FRM}	Repetitive Peak Forward Current	625	mA
P_D	Power Dissipation	410	mW
T_J	Junction Temperature	-55 to 150	℃
Tstg	Storage Temperature	-55 to 150	℃
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	310	℃/W

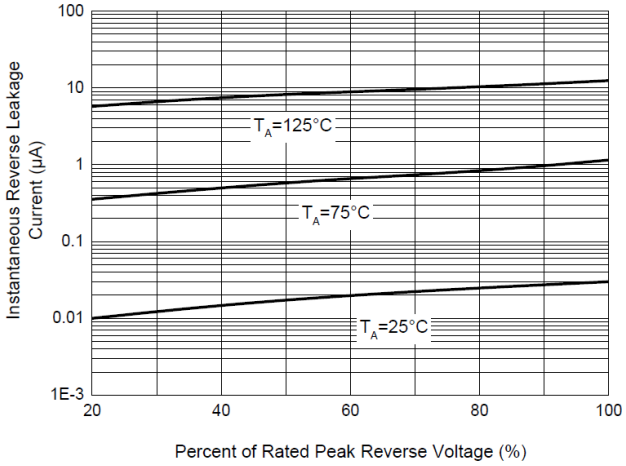
Electrical Characteristics (Ta = 25 ℃)

Symbol	Parameter	Test Conditions	Min	Max	Units
V_F	Forward Voltage	I_F=20mA	-	0.87	V
		I_F=100mA	-	1.0	
		I_F=200mA	-	1.25	
V_{BR}	Reverse Breakdown Voltage	I_R=150uA	350	-	V
I_R	Reverse Voltage Leakage Current	V_R=240V,T_J=25℃	-	100	nA
		V_R=240V,T_J=150℃	-	100	uA
C_J	Junction Capacitance	V_R=0V, f=1MHz	-	5.0	pF
Trr	Reverse Recovery Time	I_F=30mA, I_R=30mA I_{rr}=3mA, R_L=100Ω	-	50.0	nS

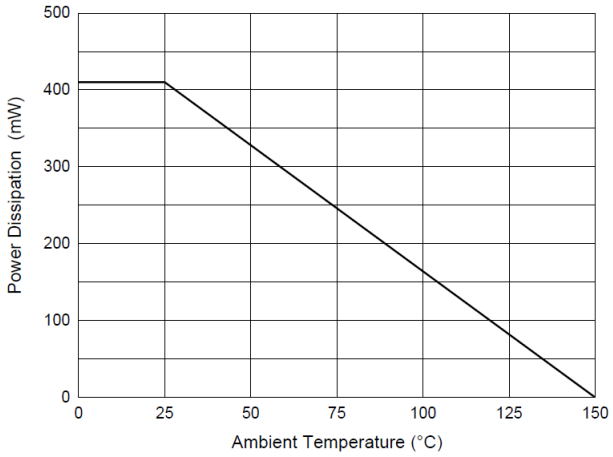
Typical Characteristics



Typical Instantaneous Forward Characteristics



Typical Reverse Leakage Characteristics



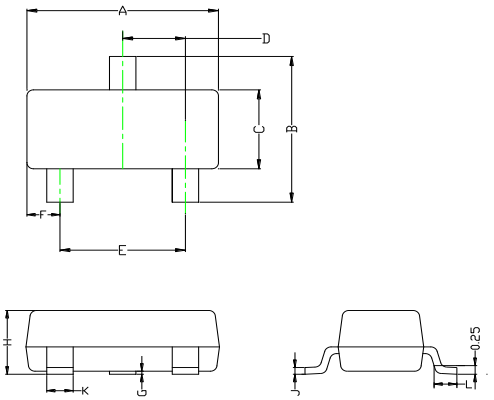
Power Derating Curve

Ordering Information

Device	Package	Shipping	Tape Wide	Emboss Pitch	Tape Specification	Notes
MMBD3004 /CA/CC/SE	SOT23	Tape & Reel 3000pcs /7" Reel	8mm	4mm	Conductive	

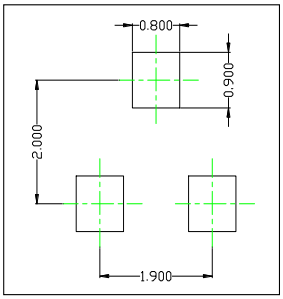
Package Dimensions

Package outline : SOT23



Symbol	Dimensions in mm	
	Min.	Max.
A	2.800	3.040
B	2.100	2.640
C	1.200	1.400
D	0.890	1.030
E	1.780	2.050
F	0.450	0.600
G	0.013	0.100
H	0.900	1.110
J	0.085	0.180
K	0.370	0.510
L	0.300	0.500

SOT23 Package Outline



Land Pattern Recommendation

Notice:

1.Lead plating: Pb free solder
2.Lead thickness includes solder plating
3.Lead frame: CAC-5
4.Other Tolerance: ±0.05