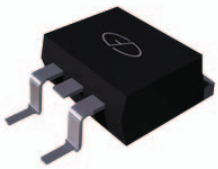
GOOD-ARK SEMICONDUCTOR

MBRB20300S

Schottky Barrier Rectifier
Reverse Voltage 300V Forward Current 20A

Features

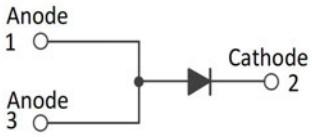
- Low forward voltage, low power loss
- Low leakage current
- High surge current
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21



TO-263 (D^2PAK)

Applications

- SMPS
- Adapter
- Server Power



Schematic Diagram

Mechanical Data

- Case: Epoxy, molded
- Finish: All external surfaces corrosion resistant and terminal leads are readily solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 sec

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	300	V
Maximum RMS Voltage	V_{RMS}	210	V
Maximum DC Blocking Voltage	V_{DC}	300	V
Maximum Average Forward	$I_{F(AV)}$	20	A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load Per Diode	I_{FSM}	180	A
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62.5	°C/W
Operating Junction Temperature Range	T_J	-55 To +150	°C
Storage Temperature Range	T_{STG}	-55 To +150	°C

Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Typ.	Max.	Unit
Forward Drop Voltage[1]	V_F	I_F=10A, T_J=25°C	0.8	0.88	V
		I_F=10A, T_J=125°C	0.67	-	
		I_F=20A, T_J=25°C	0.87	0.95	
		I_F=20A, T_J=125°C	0.75	0.85	
Reverse Leakage Current @ V_R[2]	I_R	T_J=25°C	-	100	uA
		T_J=100°C	-	10	mA

Note:

1. Pulse test: pulse width=0.3ms, duty cycle=2%
2. Pulse test: pulse width=30ms

Ratings and Characteristics Curves

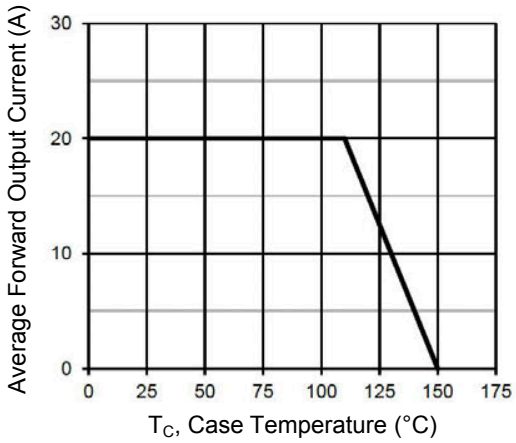


Figure 1. Forward Current Derating Curve

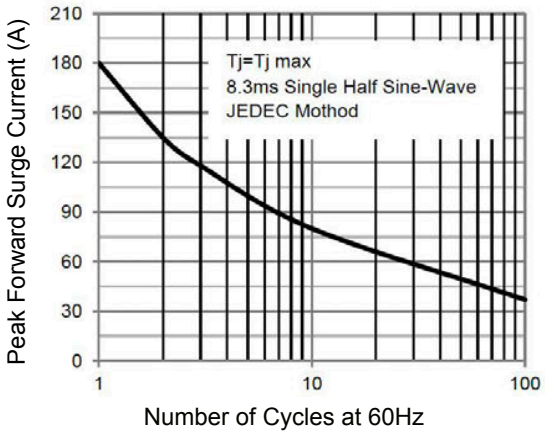


Figure 2. Maximum Non-Repetitive Surge Current

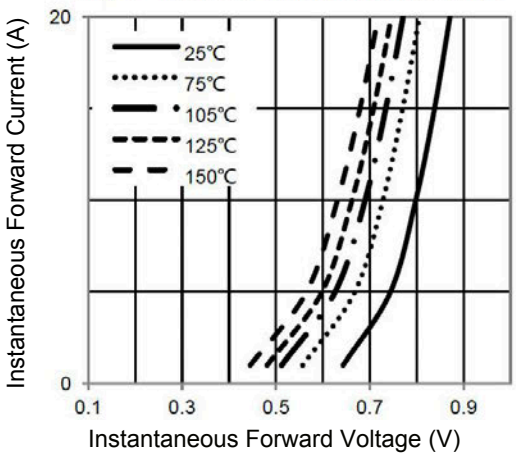


Figure 3. Typical Forward Voltage Characteristic

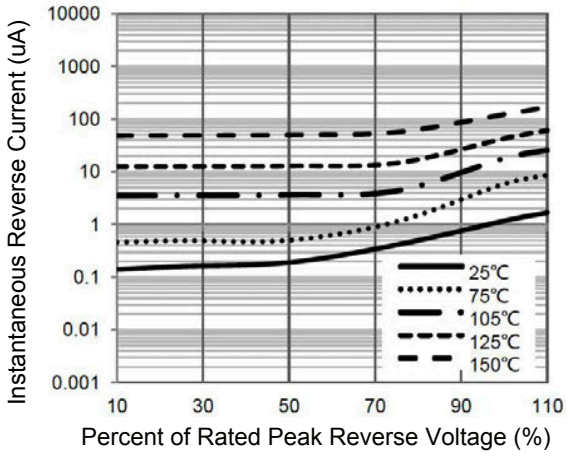


Figure 4. Typical Reverse Current Characteristics

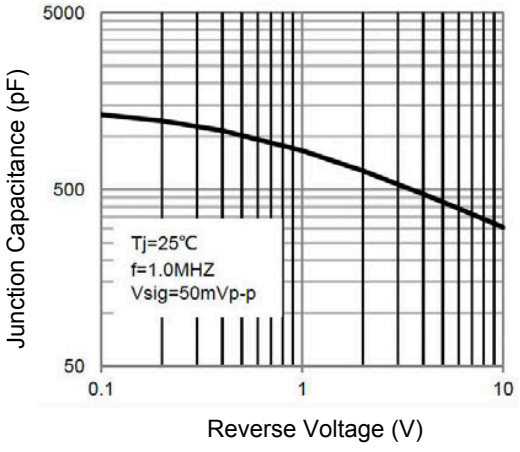


Figure 5. Typical Junction Capacitance

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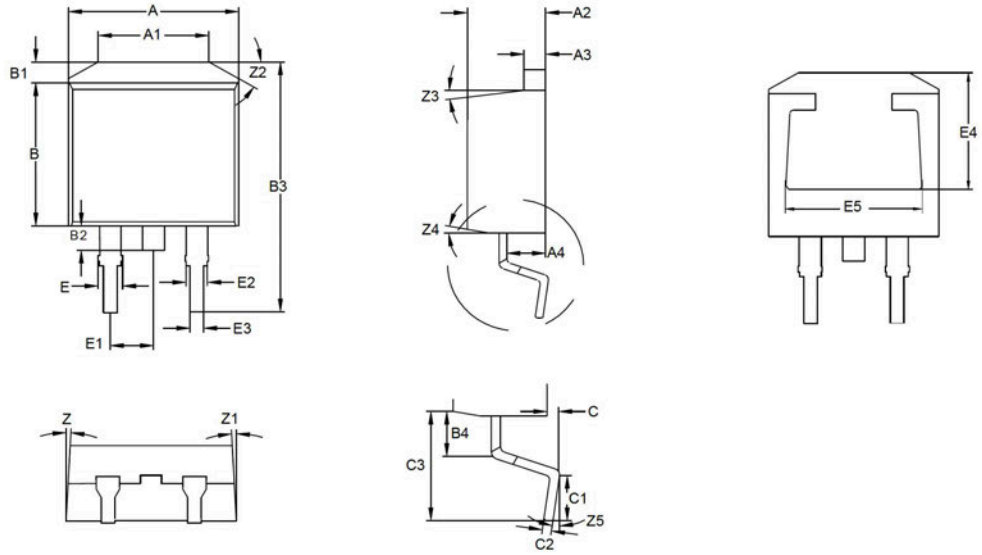
Package Outline Dimensions TO-263 (D^2PAK)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	9.800	10.200	0.386	0.402
A1	6.500	-	0.256	-
A2	4.400	4.800	0.173	0.189
A3	1.170	1.370	0.046	0.054
A4	2.370	2.970	0.093	0.117
B	8.500	8.900	0.335	0.350
B1	1.070	1.470	0.042	0.058
B2	1.200	1.800	0.047	0.071
B3	15.000	15.600	0.591	0.614
B4	1.800	2.200	0.071	0.087
C	0.000	0.250	0.000	0.010
C1	2.340	2.740	0.092	0.108
C2	0.300	0.600	0.012	0.024
C3	5.000	5.600	0.197	0.220
E	1.170	1.570	0.046	0.062
E1	2.440	2.640	0.096	0.104
E2	1.170	1.370	0.046	0.054
E3	0.700	0.900	0.028	0.035
E4	7.100		0.280	
E5	8.700		0.343	
Z	3°		3°	
Z1	3°		3°	
Z2	30°		30°	
Z3	7°		7°	
Z4	7°		7°	
Z5	0°	8°	0°	8°