

Features

- Adopt FRD chip
- Low forward Voltage drop
- Fast reverse recovery time
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability

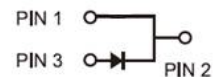
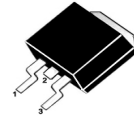
Typical Applications

Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

Mechanical Data

- **Package:** TO-263
- Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** As marked

TO-263



Primary Characteristic

I_O	15A
V_{RRM}	600V
I_{FSM}	150A
V_F	1.0V
T_{Jmax}	175°C

Maximum Ratings ($T_a=25^\circ\text{C}$ Unless otherwise specified)

Characteristics	Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	600	V
Working Peak Reverse Voltage	V_{RWM}	600	V
Maximum DC Blocking Voltage	V_{DC}	600	V
Maximum Average Forward Rectified Current	I_O	15	A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave	I_{FSM}	150	A
Operating Temperature Range	T_J	-55 to +175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C
Typical Thermal Resistance (Note1) TO-263	$R_{\theta JC}$	2.5	°C/W

Note1: Thermal resistance from Junction to case per leg mounted on heatsink.

■Electrical Characteristics

Characteristics		Symbol	Value		Unit
Forward Voltage Drop(Note2)		V_F	Typ.	Max.	V
at $I_F=3A$	$T_A=25^{\circ}C$		0.92	-	
	$T_A=125^{\circ}C$		0.73	-	
at $I_F=5A$	$T_A=25^{\circ}C$		0.99	-	
	$T_A=125^{\circ}C$		0.80	-	
at $I_F=15A$	$T_A=25^{\circ}C$		1.40	1.59	
	$T_A=125^{\circ}C$		1.00	-	
Maximum Reverse Current at $V_R=600V$	$T_A=25^{\circ}C$	I_R	0.03	1	μA
	$T_A=125^{\circ}C$		11	-	μA
Maximum Reverse Recovery Time at $I_F=0.5A$, $I_R=1A$, $I_{RR}=0.25A$		T_{rr}	-	30	ns

Note2:Pulse test: 300 μs pulse width, 1 % duty cycle

■Ordering Information (Example)

PREFERED P/N	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MSR1560B	Approximate 1.6	50	1000	5000	Tube

■Characteristics (Typical)

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

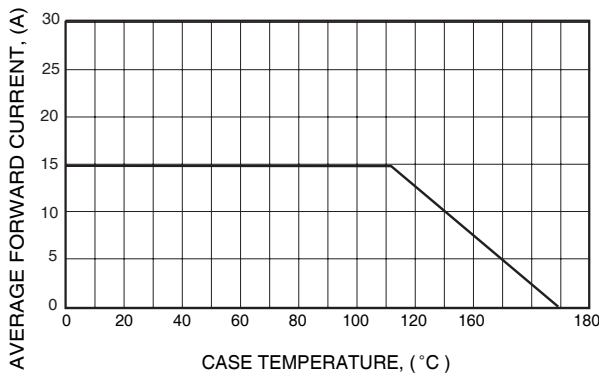


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

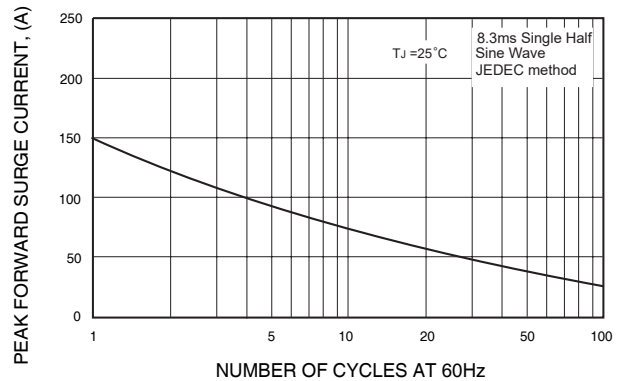


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

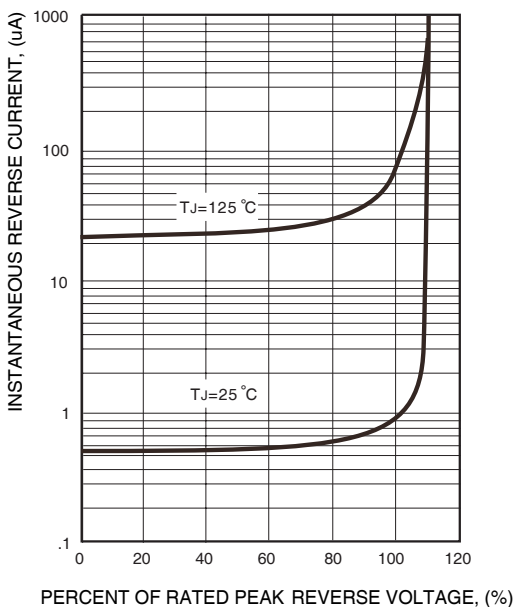
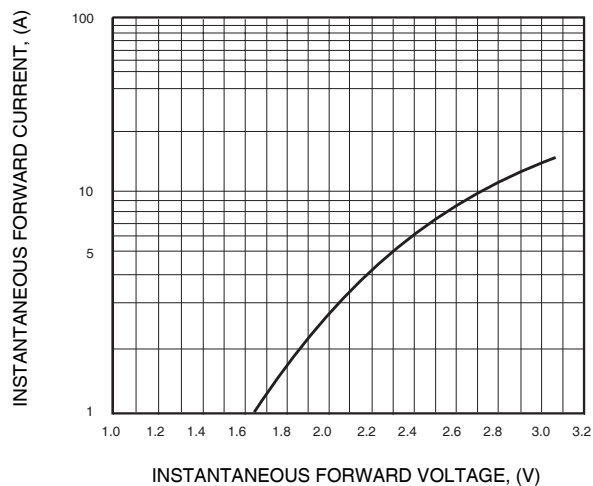
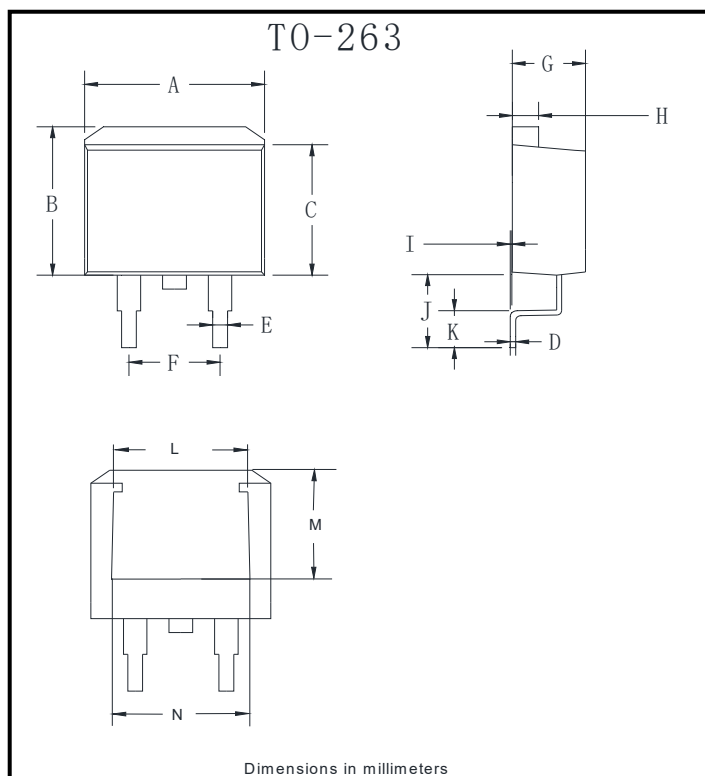


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

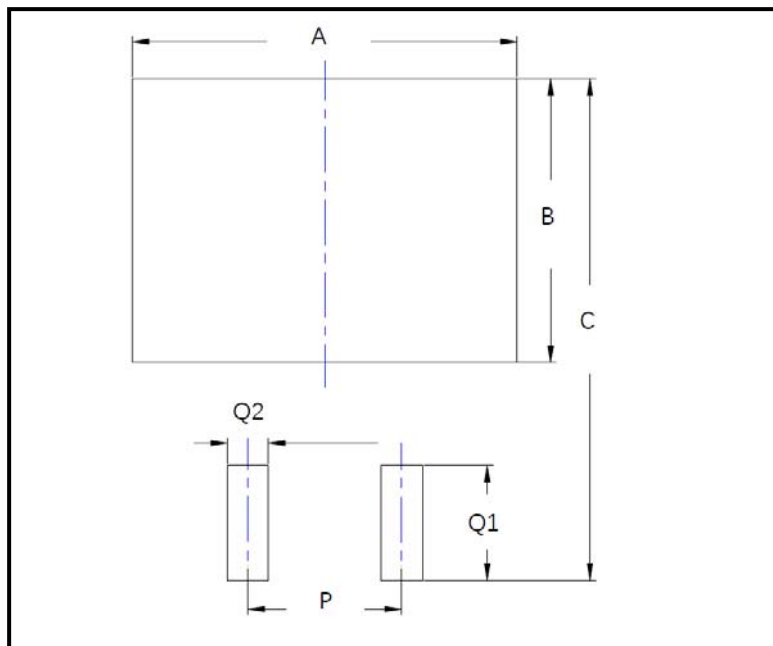


■ Outline Dimensions



TO-263		
Dim	Min	Max
A	9.5	11.5
B	9.7	10.5
C	8.4	9.0
D	0.28	0.64
E	0.68	0.94
F	4.55	5.6
G	4.04	5.10
H	1.14	1.4
I	0	0.2
J	4.9	6.05
K	1.79	2.79
L	7.3	7.9
M	6.2	6.8
N	7.6	8.2

■ Suggested Pad Layout



Dim	Millimeters
A	12.7
B	9.4
C	16.6
P	5.08
Q1	3.8
Q2	1.35