THINKI SEMICONDUCTOR ®

Pb Free Plating Product

MBRF20100CA/MBRF20150CA/MBRF20200CA

RoHS Pb

20 Ampere Insulated Dual Common Anode Schottky Half Bridge Rectifiers

Features

- ✶ HMBR matured technology with high reliablity
- ✶ Low forward voltage drop
- ✶ High current capability
- ✶ Low reverse leakage current
- ✶ High surge current capability

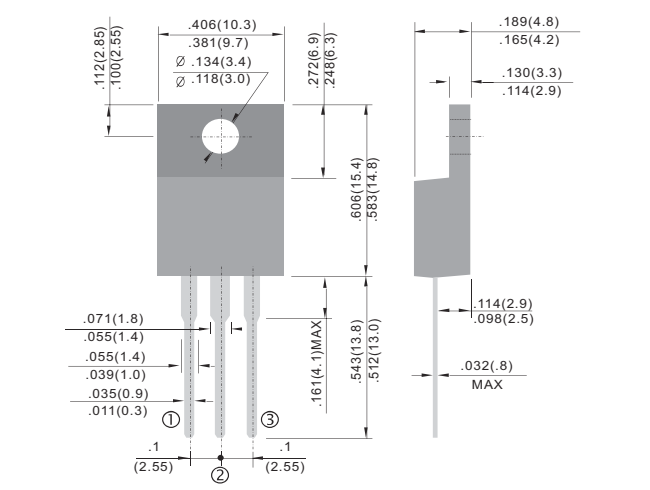
Application

- ✶ Automotive Inverters and Solar Inverters
- ✶ Plating Power Supply,SMPS,EPS and UPS
- ✶ Car Audio Amplifiers and Sound Device Systems

Mechanical Data

- ✶ Case: Fully Isolated Molding TO-220F Full Plastic Pak
- ✶ Epoxy: UL 94V-0 rate flame retardant
- ✶ Terminals: Solderable per MIL-STD-202 method 208
- ✶ Polarity: As marked on diode body
- ✶ Mounting position: Any
- ✶ Weight: 2.0 gram approximately

ITO-220AB/TO-220F-3L Unit : inch (mm)



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted)					
PARAMETER	SYMBOL	MBRF20100CA	MBRF20150CA	MBRF20200CA	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	100	150	200	V
Maximum RMS voltage	V_{RMS}	70	105	140	V
Maximum DC blocking voltage	V_{DC}	100	150	200	V
Maximum average forward rectified current(Total Device 2x10A)	$I_{F(AV)}$	20			A
Peak repetitive forward current (Rated VR, Square wave, 20KHz)	I_{FRM}	20			A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	150			A
Peak repetitive reverse surge current (Note 1)	I_{RRM}	1		0.5	A
Maximum instantaneous forward voltage (Note 2) I_F= 10 A, T_J=25℃ (Per Diode/Per Leg) I_F= 10 A, T_J=125℃ I_F= 20 A, T_J=25℃ I_F= 20 A, T_J=125℃	V_F	 0.85 0.75 0.95 0.85	 0.88 0.75 0.97 0.85		V
Maximum reverse current @ rated VR T_J=25 ℃ T_J=125 ℃	I_R	 5 2			μA mA
Voltage rate of change (Rated V_R)	dV/dt	10000			V/μs
Typical thermal resistance	$R_{\theta JC}$	3.5			℃/W
Operating junction temperature range	T_J	- 55 to +175			℃
Storage temperature range	T_{STG}	- 55 to +175			℃

Note 1: tp = 2.0 μs, 1.0KHz

Note 2: Pulse test with PW=300μs, 1% duty cycle

RATINGS AND CHARACTERISTICS CURVES

(TA=25℃ unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

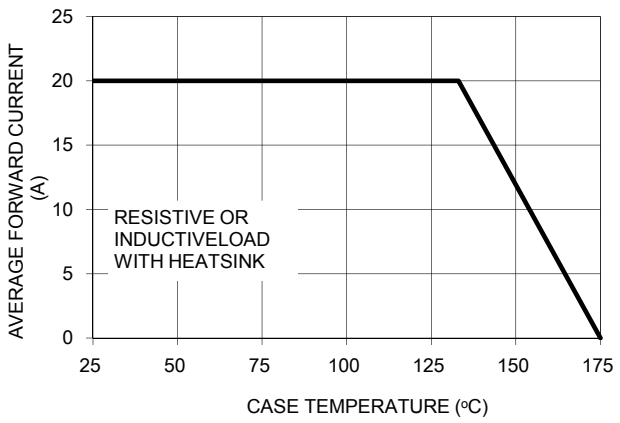


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

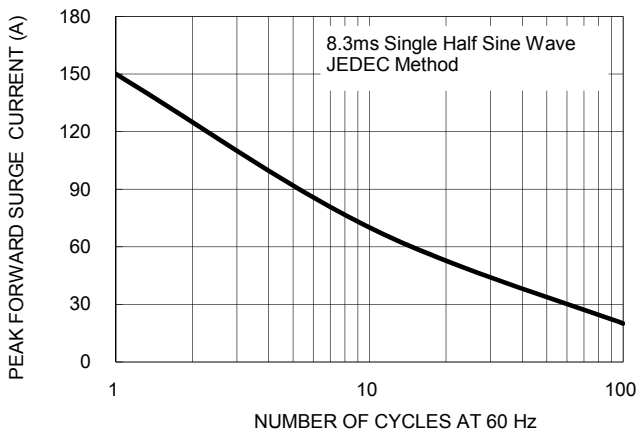


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

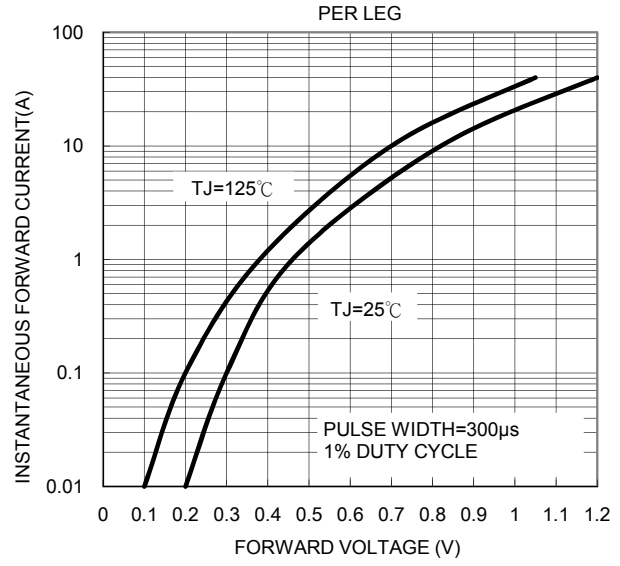


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

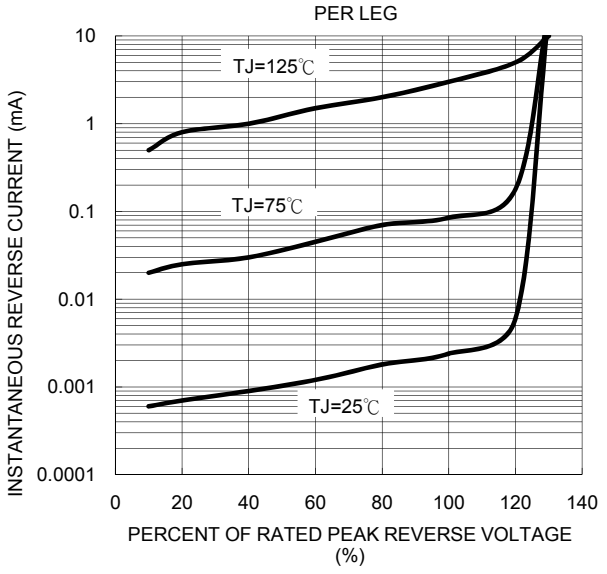


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

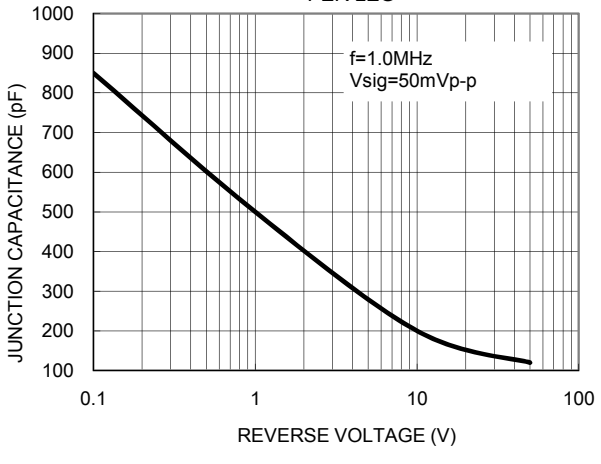


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE