THINKI SEMICONDUCTOR®

Pb Free Plating Product

MBRF2045CTR/MBRF2060CTR/MBRF20100CTR/MBRF20200CTR

RoHS

Pb

20 Amperes Insulated Dual Common Anode Schottky Half Bridge Rectifiers

Features

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

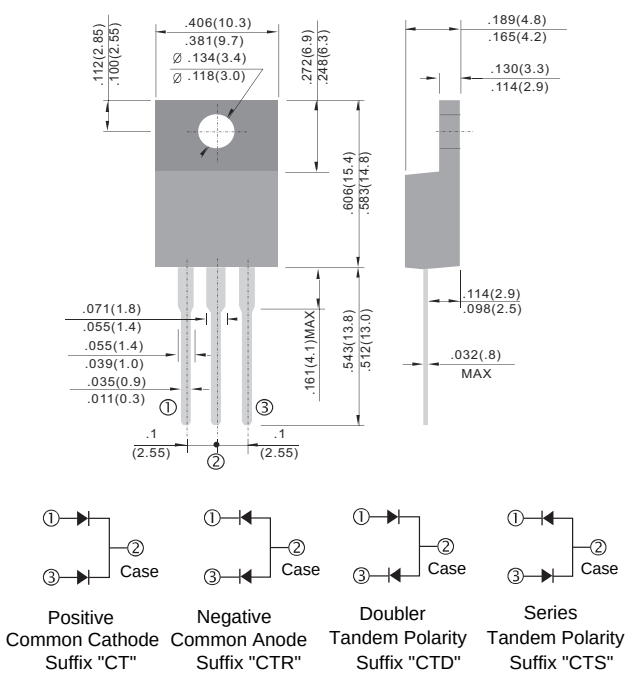
Application

- ✶ 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 Unit : inch (mm)



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted)						
PARAMETER	SYMBOL	MBRF2045CTR	MBRF2060CTR	MBRF20100CTR	MBRF20200CTR	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	45	60	100	200	V
Maximum RMS voltage	V_{RMS}	31	42	70	140	V
Maximum DC blocking voltage	V_{DC}	45	60	100	200	V
Maximum average forward rectified current	$I_{F(AV)}$	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=10A, T_J=25℃ I_F=10A, T_J=125℃ I_F=20A, T_J=25℃ I_F=20A, T_J=125℃	V_F	 - 0.57 0.84 0.72	 0.80 0.70 0.95 0.85	 0.85 0.75 0.95 0.85	 0.99 0.87 1.23 1.10	V
Maximum reverse current @ rated VR T_J=25 ℃ T_J=125 ℃	I_R	0.1 15	 10	 5	 0.15	mA
Voltage rate of change (Rated V_R)	dV/dt	10000				V/μs
Typical thermal resistance	$R_{\theta JC}$	2.5		3.5		°C/W
Operating junction temperature range	T_J	- 55 to +150				°C
Storage temperature range	T_{STG}	- 55 to +150				°C

Note 1: tp = 2.0 μs, 1.0KHz

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

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RATINGS AND CHARACTERISTICS CURVES

(TA=25℃ unless otherwise noted)

FIG.1- FORWARD CURRENT DERATING CURVE

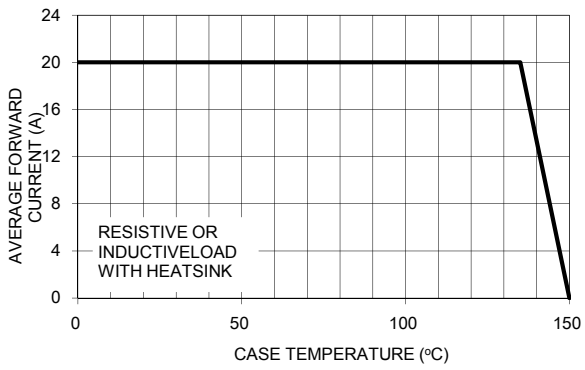


FIG. 2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

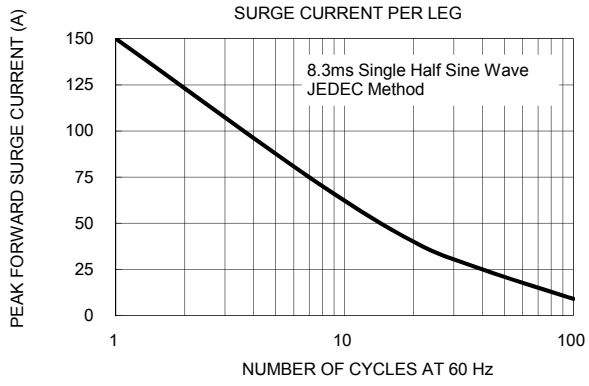


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

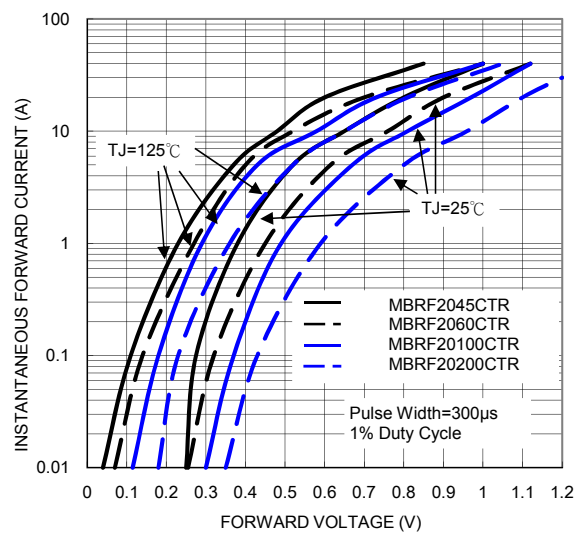


FIG. 4- TYPICAL REVERSE CHARACTERISTICS PER LEG

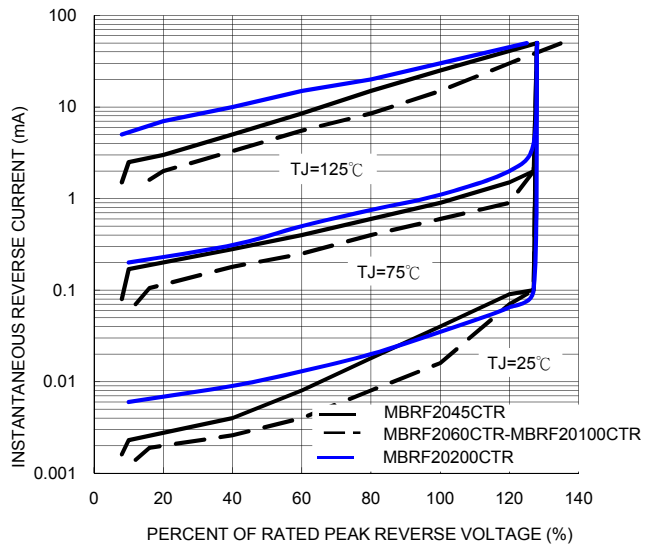


FIG. 5- TYPICAL JUNCTION CAPACITANCE PER LEG

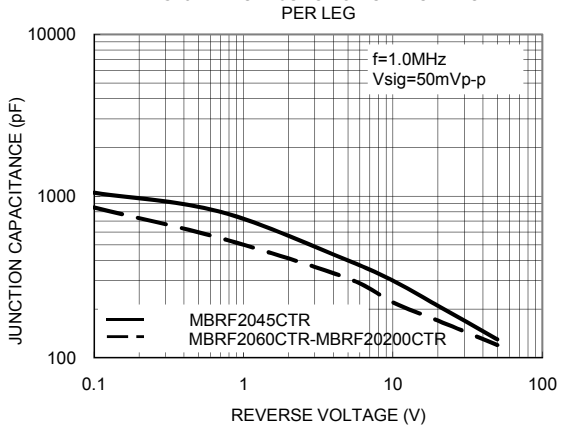
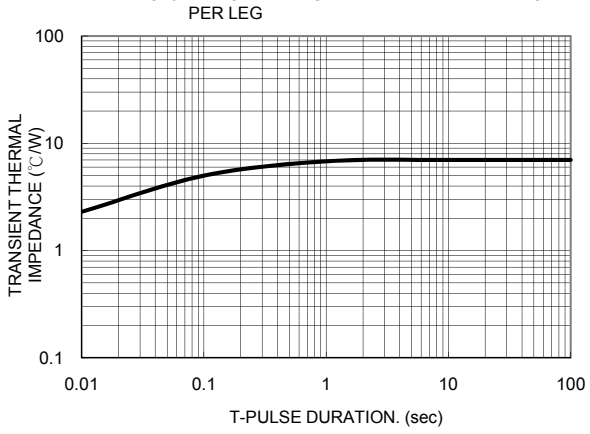


FIG. 6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



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