

Pb Free Plating Product

MBRA20100CT/MBRA20150CT/MBRA20200CT



20 Ampere Heatsink Electrically Isolated Dual Common Cathode Schottky Barrier Rectifiers

Features

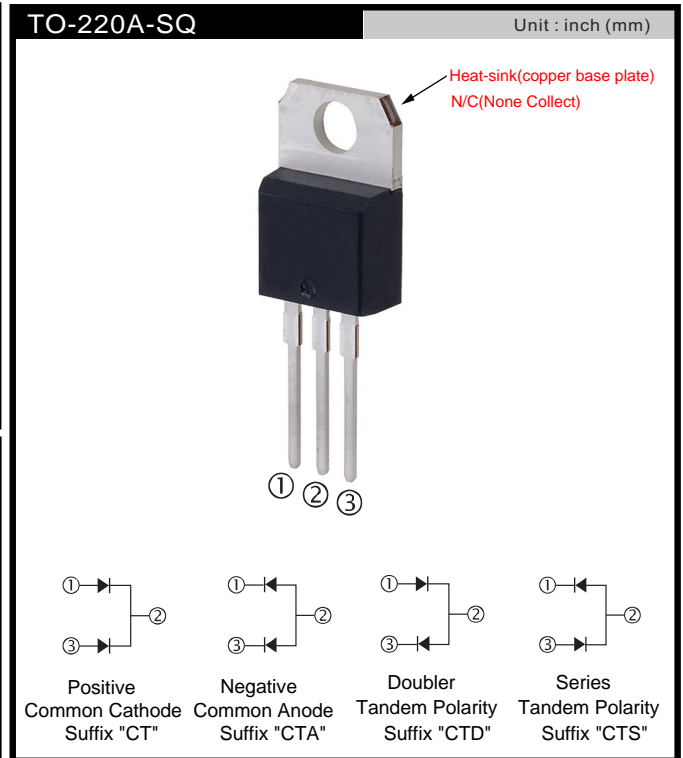
- ★ Internal ceramic insulated package
- ★ Low forward voltage drop
- ★ High current capability
- ★ Low reverse leakage current
- ★ High surge current capability

Application

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

Mechanical Data

- ★ Case: TO-220A-SQ heatsink package outline
- ★ 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



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	MBRA20100CT	MBRA20150CT	MBRA20200CT	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 V _R , 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°C (Per Diode/Per Leg) I _F = 10 A, T _J =125°C I _F = 20 A, T _J =25°C I _F = 20 A, T _J =125°C	V _F	0.85 0.75 0.95 0.85	0.88 0.75 0.97 0.85		V
Maximum reverse current @ rated V _R T _J =25 °C T _J =125 °C	I _R	5 2			μA mA
Voltage rate of change (Rated V _R)	dV/dt	10000			V/μs
Typical thermal resistance	R _{θJC}	1.0			°C/W
Operating junction temperature range	T _J	- 55 to +175			°C
Storage temperature range	T _{STG}	- 55 to +175			°C

Note 1: tp = 2.0 μs, 1.0KHz
 Note 2: Pulse test with PW=300μs, 1% duty cycle

RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

FIG. 1 FORWARD CURRENT DERATING CURVE

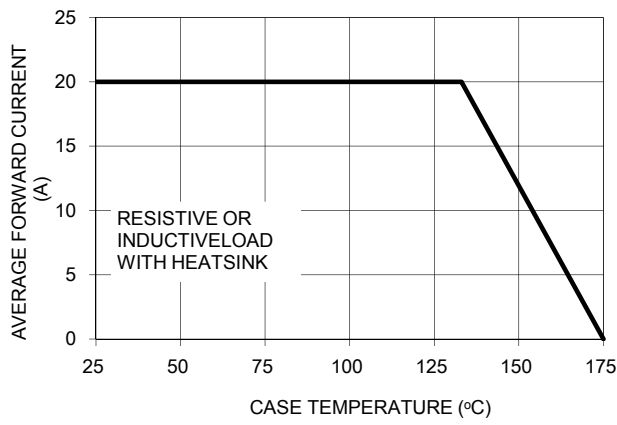


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

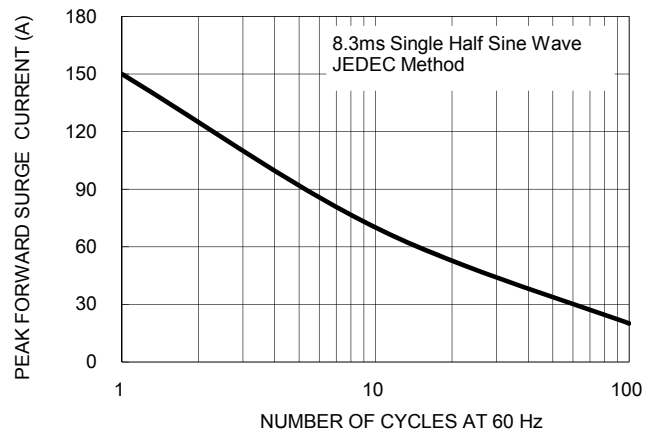


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

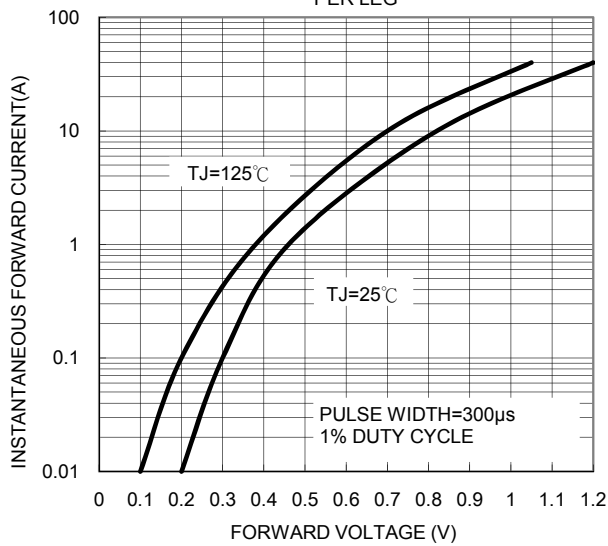


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

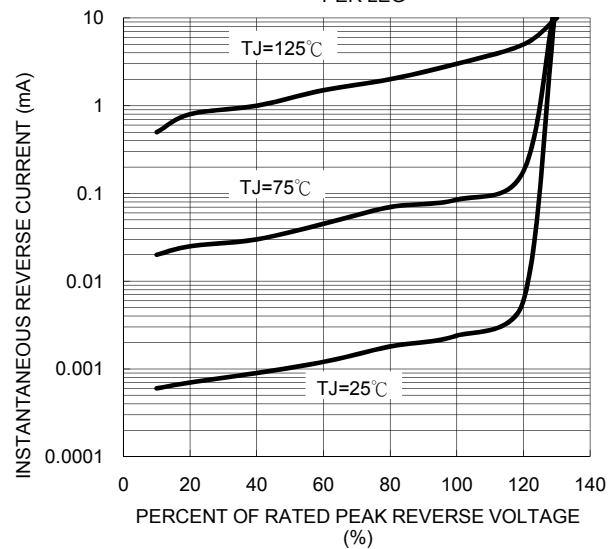


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

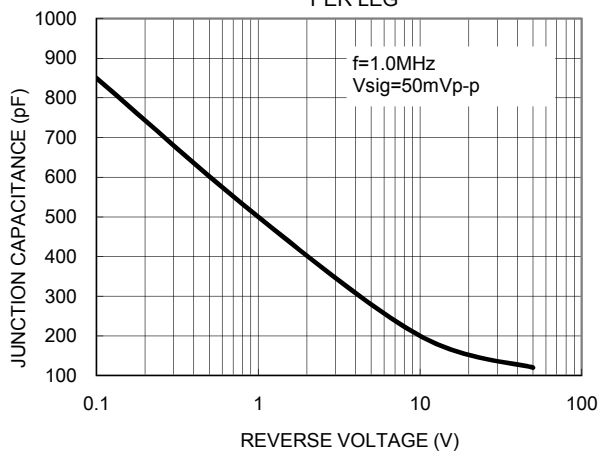
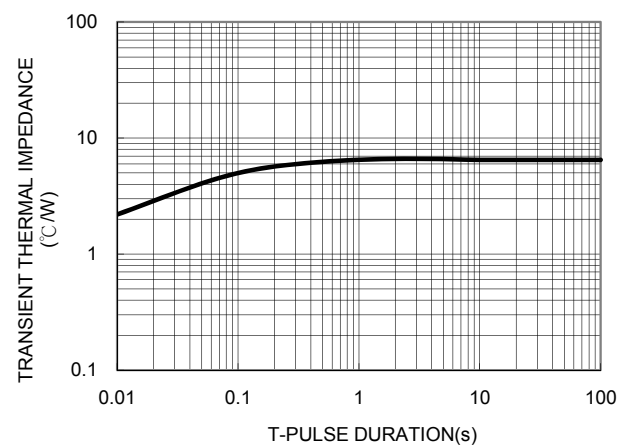
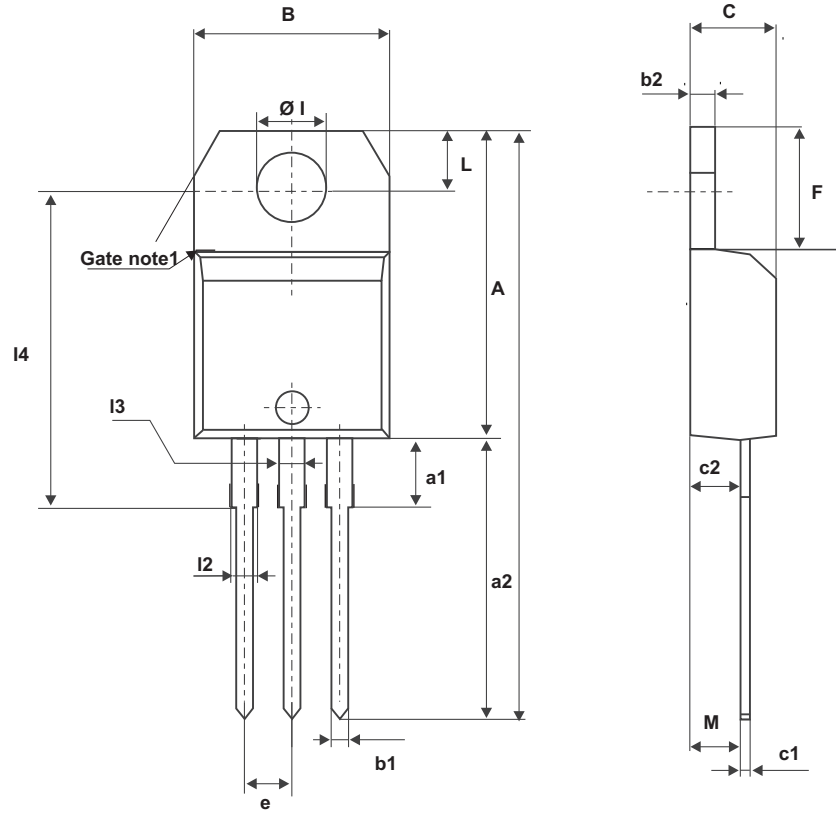


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE



TO-220A-SQ MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.20		15.90	0.598		0.625
a1		3.75			0.147	
a2	13.00		14.00	0.511		0.551
B	10.00		10.40	0.393		0.409
b1	0.61		0.88	0.024		0.034
b2	1.23		1.32	0.048		0.051
C	4.40		4.60	0.173		0.181
c1	0.49		0.70	0.019		0.027
c2	2.40		2.72	0.094		0.107
e	2.40		2.70	0.094		0.106
F	6.20		6.60	0.244		0.259
I	3.75		3.85	0.147		0.151
I4	15.80	16.40	16.80	0.622	0.646	0.661
L	2.65		2.95	0.104		0.116
I2	1.14		1.70	0.044		0.066
I3	1.14		1.70	0.044		0.066
M		2.60			0.102	