30A, 100V Schottky Barrier Rectifier

FEATURES

- Low power loss, high efficiency
- Guard ring for overvoltage protection
- High surge current capability
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

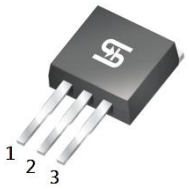
- Switching mode power supply (SMPS)
- Adapters
- DC to DC converter

MECHANICAL DATA

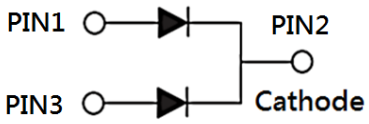
- Case: TO-262 (I^2PAK)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Weight: 1.40g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	30	A
V_{RRM}	100	V
I_{FSM}	200	A
$T_{J\ MAX}$	150	°C
Package	TO-262 (I^2PAK)	
Configuration	Dual dies	

Pb-Free RoHS COMPLIANT HALOGEN FREE



TO-262 (I^2PAK)



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)			
PARAMETER	**SYMBOL**	**MBRI30100CT**	**UNIT**
Marking code on the device		MBRI30100CT	
Repetitive peak reverse voltage	V_{RRM}	100	V
Reverse voltage, total rms value	$V_{R(RMS)}$	70	V
Forward current	I_F	30	A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	200	A
Critical rate of rise of off-state voltage	dv/dt	10,000	V/μs
Junction temperature	T_J	-55 to +150	°C
Storage temperature	T_{STG}	-55 to +150	°C

THERMAL PERFORMANCE			
PARAMETER	**SYMBOL**	**TYP**	**UNIT**
Junction-to-case thermal resistance	$R_{\Theta JC}$	1.5	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)					
PARAMETER	**CONDITIONS**	**SYMBOL**	**TYP**	**MAX**	**UNIT**
Forward voltage per diode(1)	I_F = 15A, T_J = 25°C	V_F	-	0.84	V
	I_F = 30A, T_J = 25°C		-	0.94	V
	I_F = 15A, T_J = 125°C		-	0.70	V
	I_F = 30A, T_J = 125°C		-	0.82	V
Reverse current @ rated V_R per diode(2)	T_J = 25°C	I_R	-	200	μA
	T_J = 125°C		-	7.5	mA

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION		
ORDERING CODE	**PACKAGE**	**PACKING**
MBRI30100CT	TO-262 (I^2PAK)	50 / Tube

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

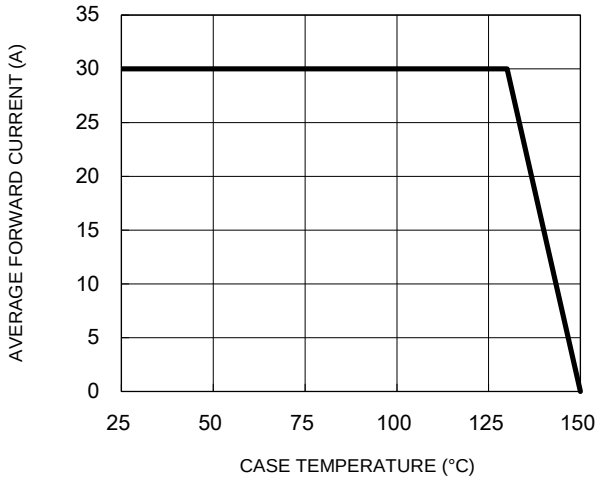


Fig.2 Typical Junction Capacitance

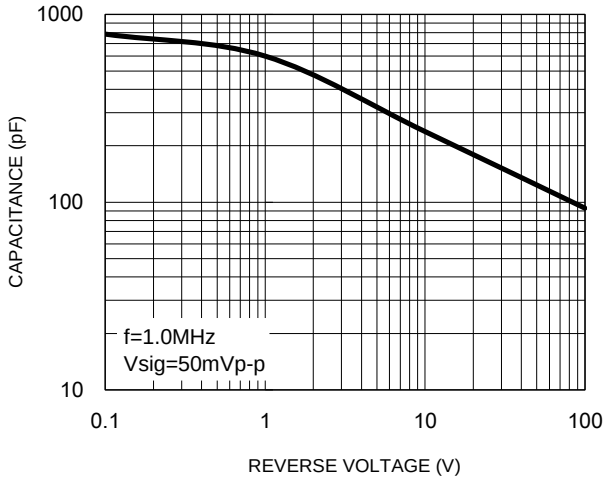


Fig.3 Typical Reverse Characteristics

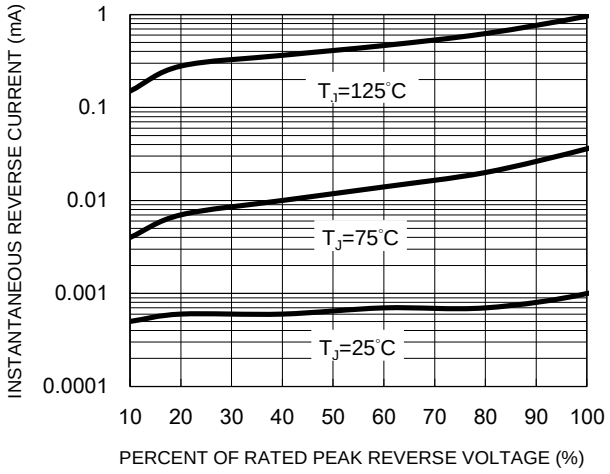


Fig.4 Typical Forward Characteristics

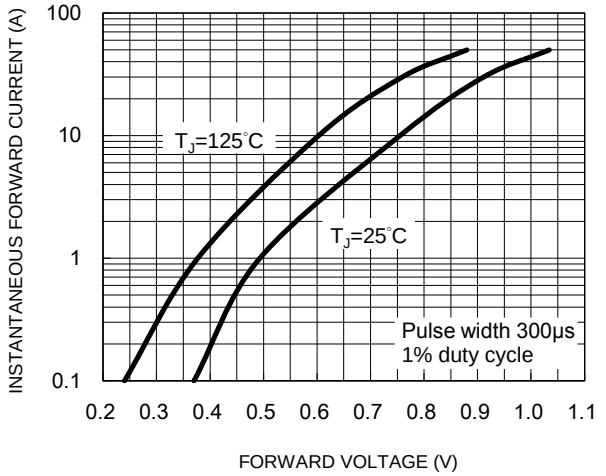
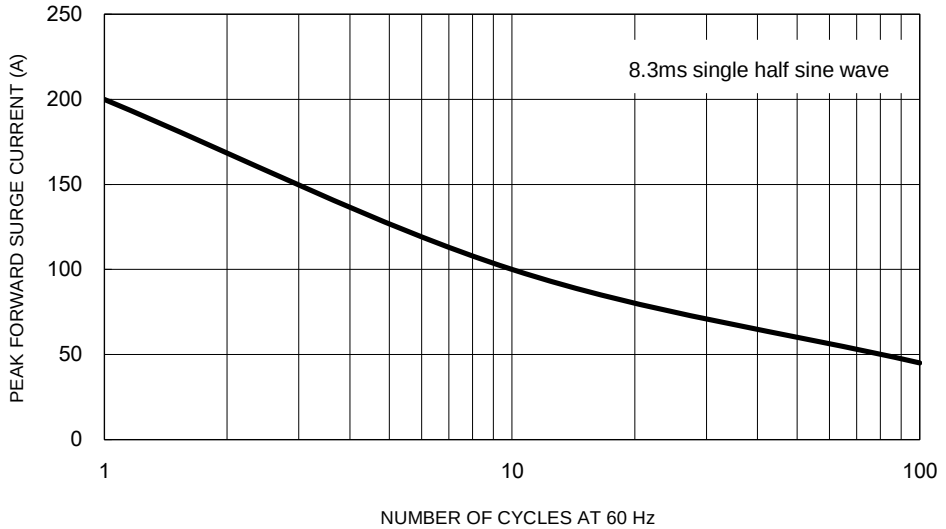


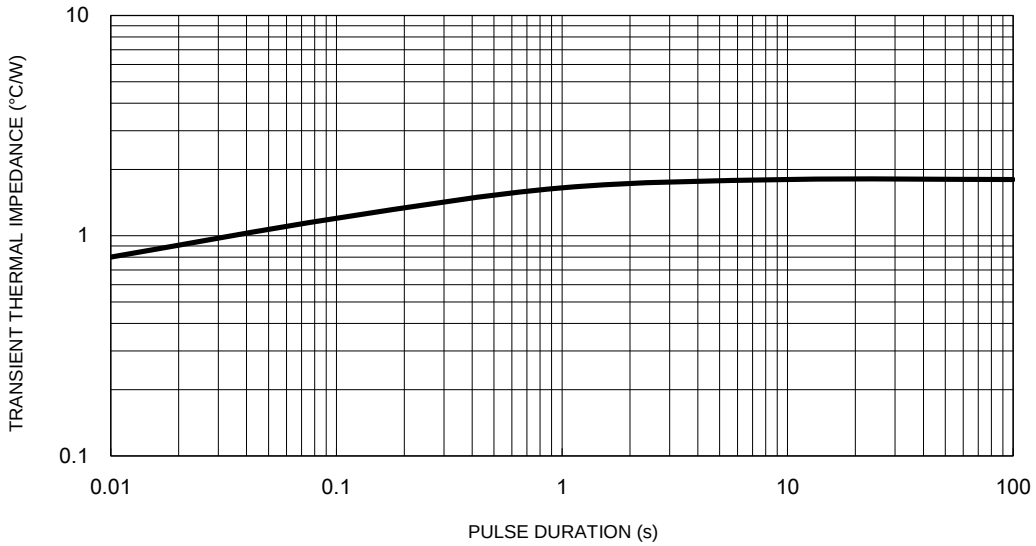
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

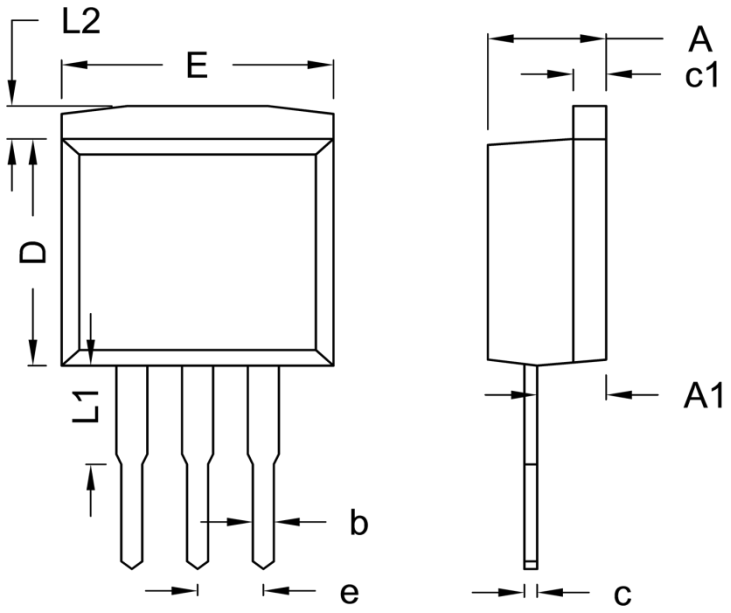
(T_A = 25°C unless otherwise noted)

Fig.6 Typical Transient Thermal Characteristics



PACKAGE OUTLINE DIMENSIONS

TO-262 (I^2PAK)



DIM	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	4.44	4.70	0.175	0.185
A1	2.54	2.79	0.100	0.110
b	0.68	0.94	0.027	0.037
c	0.35	0.64	0.014	0.025
c1	1.14	1.40	0.045	0.055
D	8.25	9.25	0.325	0.364
E	-	10.50	-	0.413
e	2.41	2.67	0.095	0.105
L	7.58	8.12	0.298	0.320
L1	3.56	4.06	0.140	0.160
L2	1.14	1.40	0.045	0.055

MARKING DIAGRAM

P/N = Marking Code
G = Green Compound
YWW = Date Code
F = Factory Code

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