

20A, 100V - 200V Schottky Barrier Rectifier

FEATURES

- AEC-Q101 qualified available
- Low power loss, high efficiency
- Guard ring for overvoltage protection
- High surge current capability
- UL Recognized File # E-326243
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

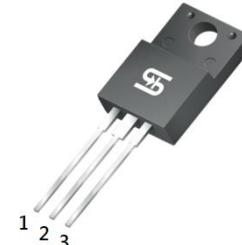
APPLICATIONS

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

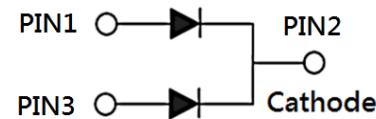
MECHANICAL DATA

- Case: ITO-220AB
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Mounting torque: 0.56 N·m maximum
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.70g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	20	A
V_{RRM}	100 - 200	V
I_{FSM}	150	A
$T_{J MAX}$	175	°C
Package	ITO-220AB	
Configuration	Dual dies	



ITO-220AB



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	MBRF 20H100CT	MBRF 20H150CT	MBRF 20H200CT	UNIT
Marking code on the device		MBRF 20H100CT	MBRF 20H150CT	MBRF 20H200CT	
Repetitive peak reverse voltage	V_{RRM}	100	150	200	V
Reverse voltage, total rms value	$V_{R(RMS)}$	70	105	140	V
Forward current	I_F		20		A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}		150		A
Peak repetitive reverse surge current ⁽¹⁾	I_{RRM}	1.0		0.5	A
Peak repetitive forward current (Rated V_R , Square wave, 20KHz)	I_{FRM}		20		A
Critical rate of rise of off-state voltage	dv/dt		10,000		$\text{V}/\mu\text{s}$
Junction temperature	T_J		-55 to +175		°C
Storage temperature	T_{STG}		-55 to +175		°C

Notes:

1. $tp = 2.0\mu\text{s}$, 1.0KHz

Thermal Performance

Parameter	Symbol	Type	Unit
Junction-to-case thermal resistance	$R_{\Theta JC}$	3.5	°C/W

Electrical Specifications ($T_A = 25^\circ C$ unless otherwise noted)

Parameter	Conditions	Symbol	Type	Max	Unit
Forward voltage per diode ⁽¹⁾	MBRF20H100CT	$I_F = 10A, T_J = 25^\circ C$	-	0.85	V
	MBRF20H150CT		-	0.88	V
	MBRF20H200CT		-	0.95	V
	MBRF20H100CT	$I_F = 20A, T_J = 25^\circ C$	-	0.97	V
	MBRF20H150CT		-	0.75	V
	MBRF20H200CT		-	0.85	V
	MBRF20H100CT	$I_F = 10A, T_J = 125^\circ C$	-	5	µA
	MBRF20H150CT		-	2	mA
	MBRF20H200CT		-		
Reverse current @ rated V_R per diode ⁽²⁾		I_R	-		
$T_J = 25^\circ C$		I_R	-		
$T_J = 125^\circ C$		I_R	-		

Notes:

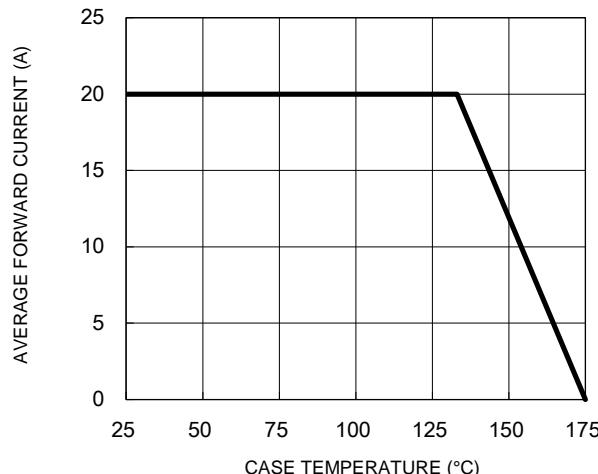
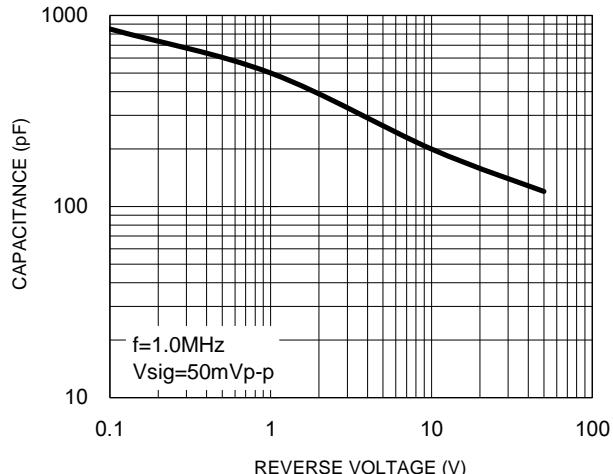
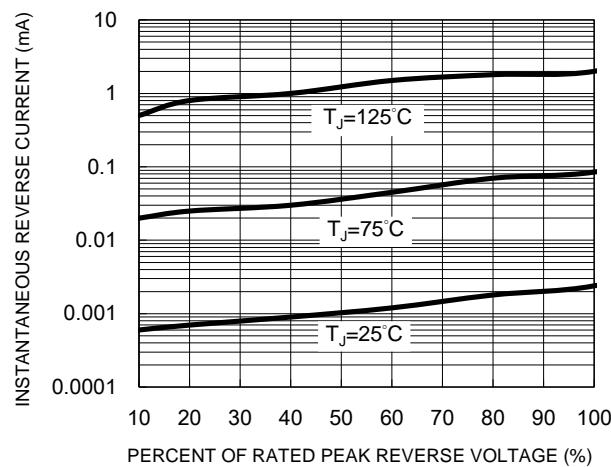
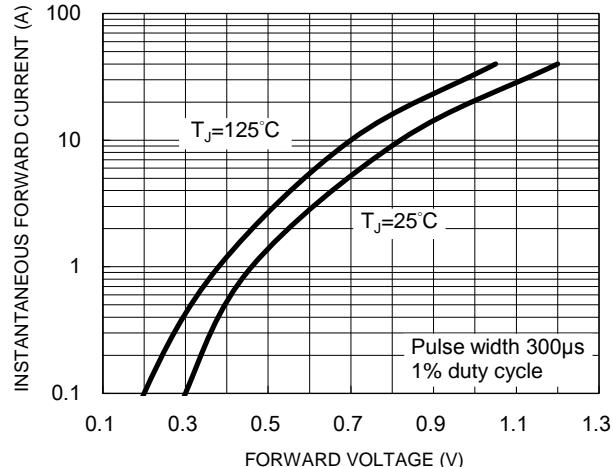
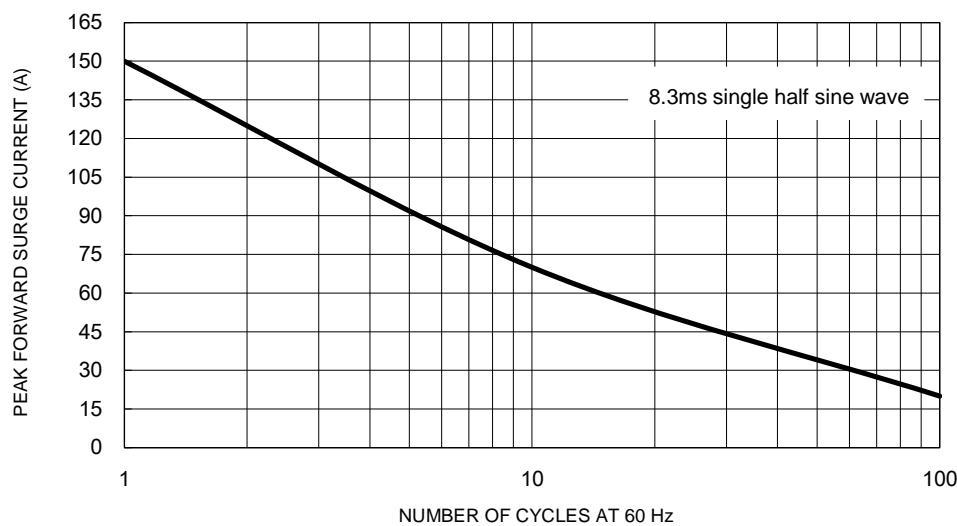
1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

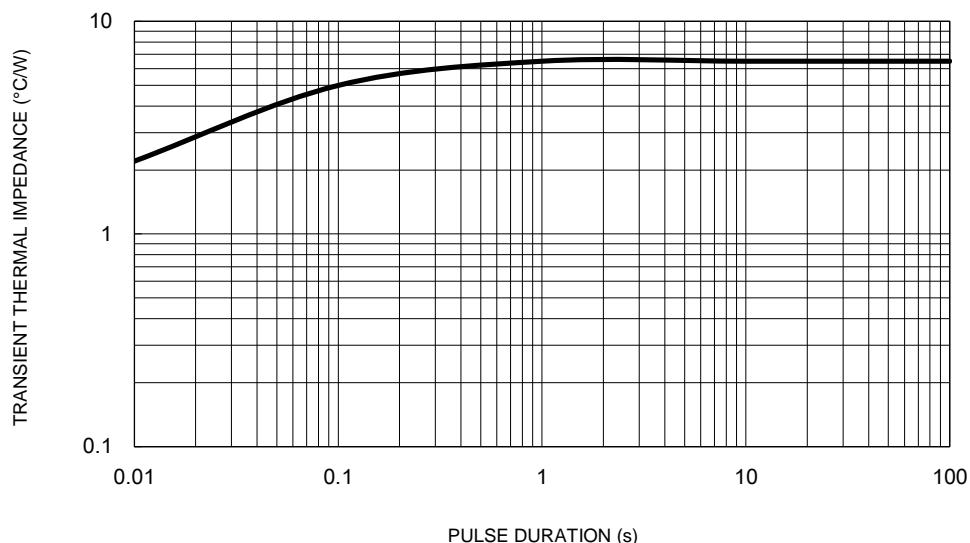
Ordering Information

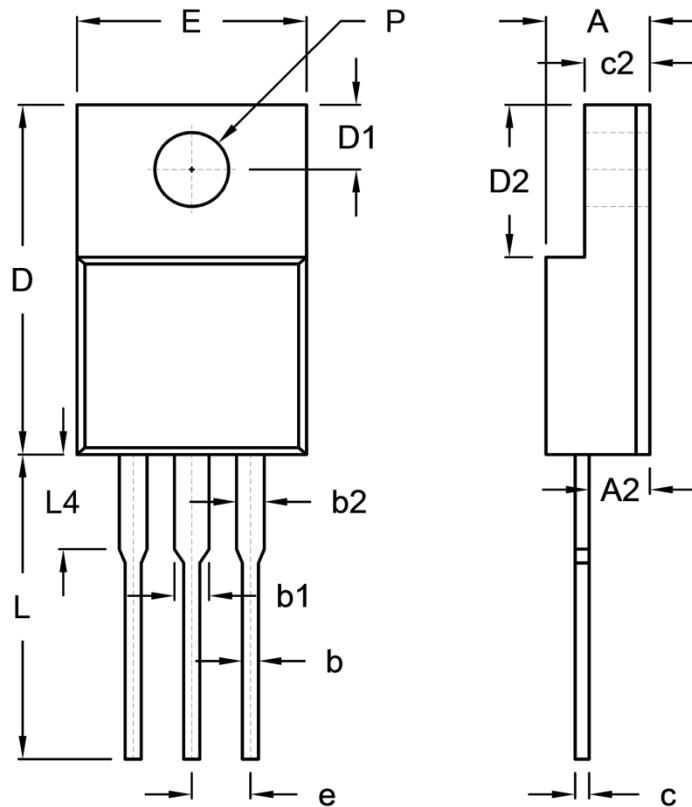
Ordering Code ⁽¹⁾⁽²⁾	Package	Packing
MBRF20HxCT	ITO-220AB	50 / Tube
MBRF20HxCTH	ITO-220AB	50 / Tube

Notes:

1. "x" defines voltage from 100V(MBRF20H100CT) to 200V(MBRF20H200CT)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES
 $(T_A = 25^\circ\text{C} \text{ unless otherwise noted})$
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 $(T_A = 25^\circ\text{C}$ unless otherwise noted)**Fig.6 Typical Transient Thermal Impedance**

PACKAGE OUTLINE DIMENSIONS
ITO-220AB


DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	4.30	4.70	0.169	0.185
A2	2.30	2.96	0.091	0.117
b	0.50	0.90	0.020	0.035
b1	-	1.80	-	0.071
b2	0.95	1.45	0.037	0.057
c	0.46	0.76	0.018	0.030
c2	2.50	3.16	0.098	0.124
D	14.80	15.50	0.583	0.610
D1	2.40	3.20	0.094	0.126
D2	6.30	6.90	0.248	0.272
E	9.60	10.30	0.378	0.406
e	2.41	2.67	0.095	0.105
L	12.60	13.80	0.496	0.543
L4	-	4.10	-	0.161
P	3.00	3.40	0.118	0.134

MARKING DIAGRAM


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

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