

## 8A, 35V - 150V 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

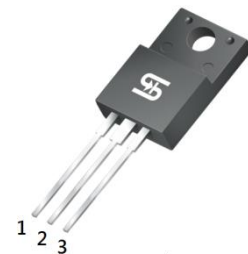
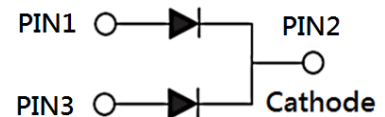
### APPLICATIONS

- 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
$I_F$	8	A
$V_{RRM}$	35 - 150	V
$I_{FSM}$	150	A
$T_{J\ MAX}$	150	°C
Package	ITO-220AB	
Configuration	Dual dies	


**ITO-220AB**


ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	MBRF	MBRF	MBRF	MBRF	MBRF	MBRF	MBRF	UNIT
		835 CT	845 CT	850 CT	860 CT	890 CT	8100 CT	8150 CT	
Marking code on the device		MBRF 835 CT	MBRF 845 CT	MBRF 850 CT	MBRF 860 CT	MBRF 890 CT	MBRF 8100 CT	MBRF 8150 CT	
Repetitive peak reverse voltage	$V_{RRM}$	35	45	50	60	90	100	150	V
Reverse voltage, total rms value	$V_{R(RMS)}$	24	31	35	42	63	70	105	V
Forward current	$I_F$	8							A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	$I_{FSM}$	150							A
Critical rate of rise of off-state voltage	dv/dt	10,000							V/ $\mu\text{s}$
Junction temperature	$T_J$	-55 to +150							°C
Storage temperature	$T_{STG}$	-55 to +150							°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-case thermal resistance	$R_{\theta JC}$	6	°C/W

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)						
<b>PARAMETER</b>		<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>MAX</b>	<b>UNIT</b>
Forward voltage per diode <sup>(1)</sup>	MBRF835CT MBRF845CT	$I_F = 4\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	0.55	V
	MBRF850CT MBRF860CT			-	0.70	V
	MBRF890CT MBRF8100CT			-	0.85	V
	MBRF8150CT			-	0.95	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	MBRF835CT MBRF845CT MBRF850CT MBRF860CT MBRF890CT MBRF8100CT MBRF8150CT	$T_J = 25^\circ\text{C}$	$I_R$	-	100	$\mu\text{A}$
	MBRF835CT MBRF845CT	$T_J = 125^\circ\text{C}$		-	15	mA
	MBRF850CT MBRF860CT			-	10	mA
	MBRF890CT MBRF8100CT MBRF8150CT			-	5	mA

**Notes:**

1. Pulse test with  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b> <sup>(1)(2)</sup>	<b>PACKAGE</b>	<b>PACKING</b>
MBRF8xCT	ITO-220AB	50 / Tube
MBRF8xCTH	ITO-220AB	50 / Tube

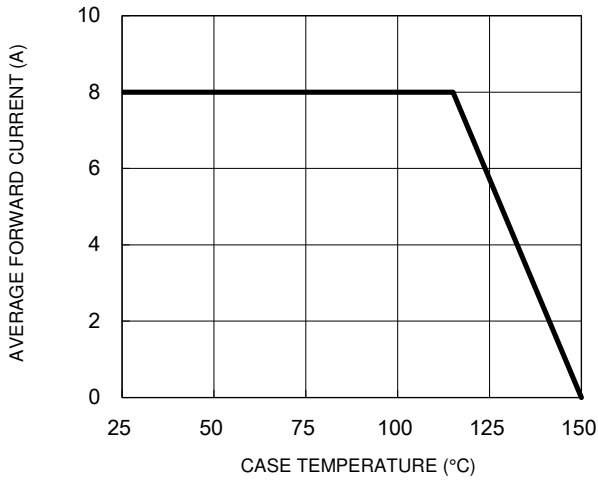
**Notes:**

1. "x" defines voltage from 35V(MBRF835CT) to 150V(MBRF8150CT)
2. "H" means AEC-Q101 qualified

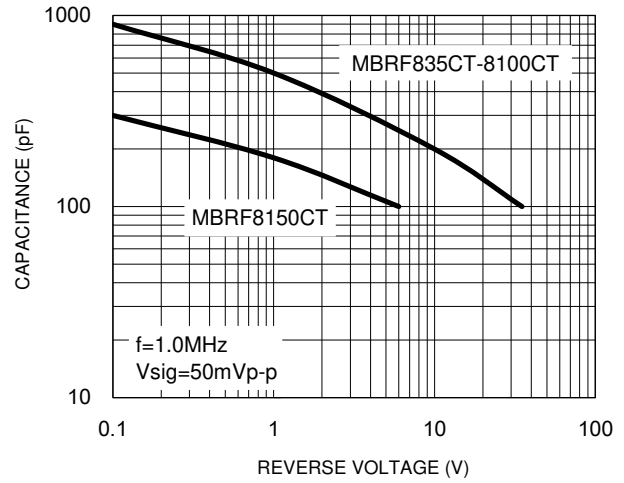
**CHARACTERISTICS CURVES**

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

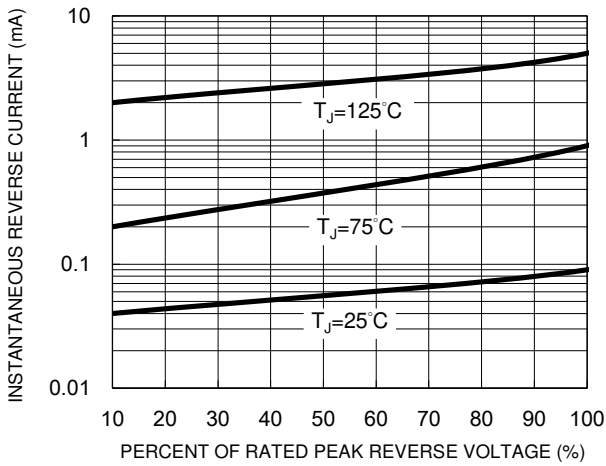
**Fig.1 Forward Current Derating Curve**



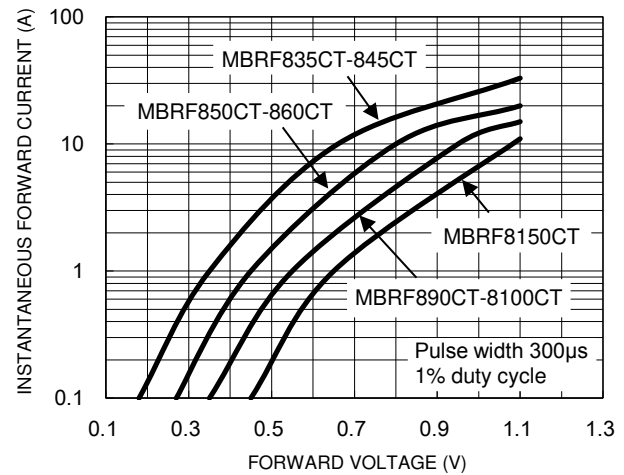
**Fig.2 Typical Junction Capacitance**



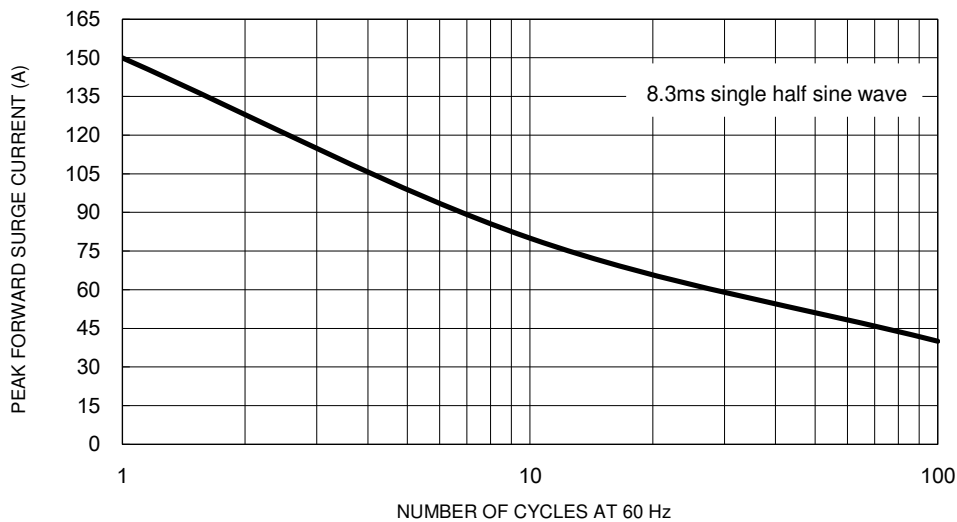
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



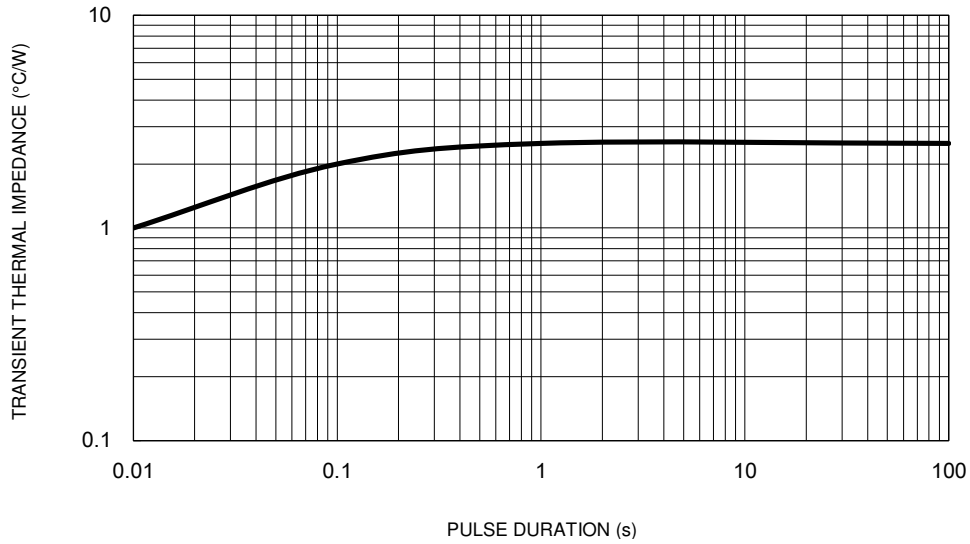
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



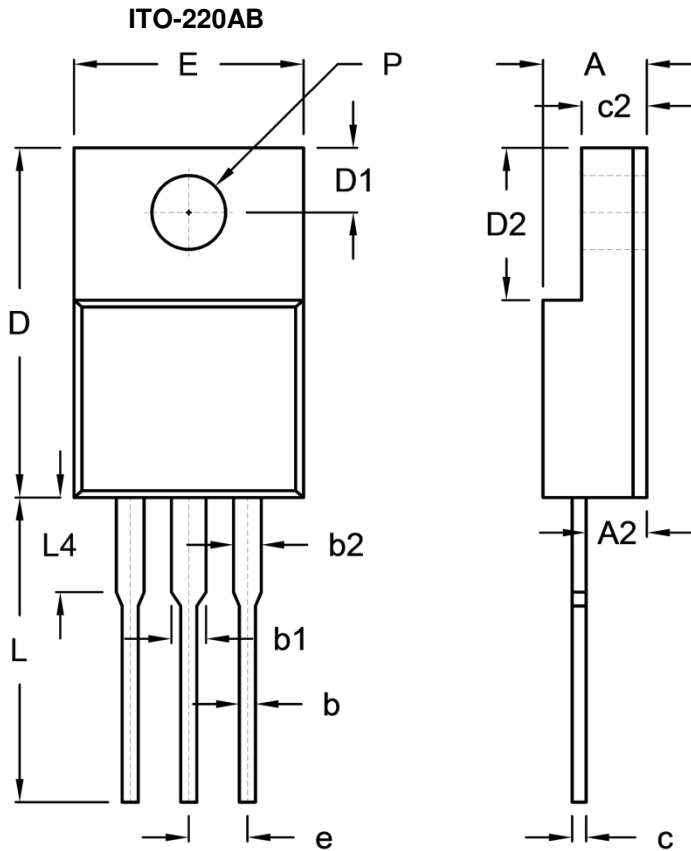
**CHARACTERISTICS CURVES**

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

**Fig.6 Typical Transient Thermal Impedance**



**PACKAGE OUTLINE DIMENSIONS**



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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