

25A, 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

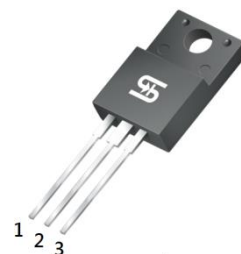
APPLICATIONS

- 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	25	A
V_{RRM}	35 - 150	V
I_{FSM}	200	A
T_{JMAX}	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	
		2535	2545	2550	2560	2590	25100	25150		
Marking code on the device		MBRF 2535 CT	MBRF 2545 CT	MBRF 2550 CT	MBRF 2560 CT	MBRF 2590 CT	MBRF 25100 CT	MBRF 25150 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	25								A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	200								A
Peak repetitive forward current (Rated V_R , Square wave, 20KHz)	I_{FRM}	25								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-ambient thermal resistance	$R_{\theta JA}$	8	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	1	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	MBRF2535CT MBRF2545CT	$I_F = 12.5\text{A}, T_J = 25^\circ\text{C}$	V_F	-	-	V
	MBRF2550CT MBRF2560CT			-	0.75	V
	MBRF2590CT MBRF25100CT			-	0.85	V
	MBRF25150CT			-	0.95	V
	MBRF2535CT MBRF2545CT			$I_F = 25\text{A}, T_J = 25^\circ\text{C}$	-	0.82
	MBRF2550CT MBRF2560CT	-			-	V
	MBRF2590CT MBRF25100CT	-			0.92	V
	MBRF25150CT	-			1.02	V
	MBRF2535CT MBRF2545CT	$I_F = 12.5\text{A}, T_J = 125^\circ\text{C}$			-	-
	MBRF2550CT MBRF2560CT			-	0.65	V
	MBRF2590CT MBRF25100CT			-	0.75	V
	MBRF25150CT			-	0.92	V
	MBRF2535CT MBRF2545CT			$I_F = 25\text{A}, T_J = 125^\circ\text{C}$	-	0.73
	MBRF2550CT MBRF2560CT	-			-	V
	MBRF2590CT MBRF25100CT	-			0.88	V
	MBRF25150CT	-			0.98	V

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT	
Reverse current @ rated V_R per diode ⁽²⁾	MBRF2535CT MBRF2545CT MBRF2550CT MBRF2560CT	$T_J = 25^\circ\text{C}$	I_R	-	2	mA	
	MBRF2590CT MBRF25100CT MBRF25150CT			-	100	μA	
	MBRF2535CT MBRF2545CT			$T_J = 125^\circ\text{C}$	-	15	mA
	MBRF2550CT MBRF2560CT				-	10	mA
	MBRF2590CT MBRF25100CT MBRF25150CT	-			7.5	mA	
		-			5	mA	

Notes:

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

ORDERING INFORMATION		
ORDERING CODE ⁽¹⁾⁽²⁾	PACKAGE	PACKING
MBRF25xCT	ITO-220AB	50 / Tube
MBRF25xCTH	ITO-220AB	50 / Tube

Notes:

1. "x" defines voltage from 35V(MBRF2535CT) to 150V(MBRF25150CT)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

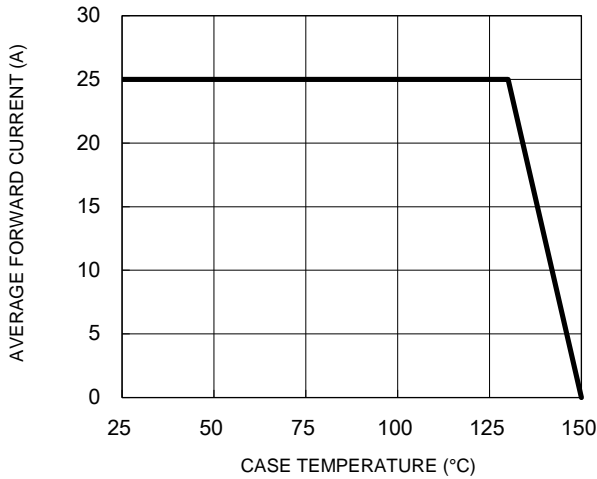


Fig.2 Typical Junction Capacitance

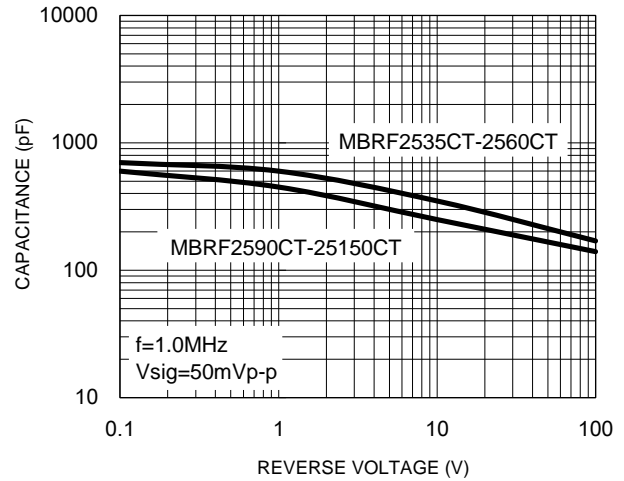


Fig.3 Typical Reverse Characteristics

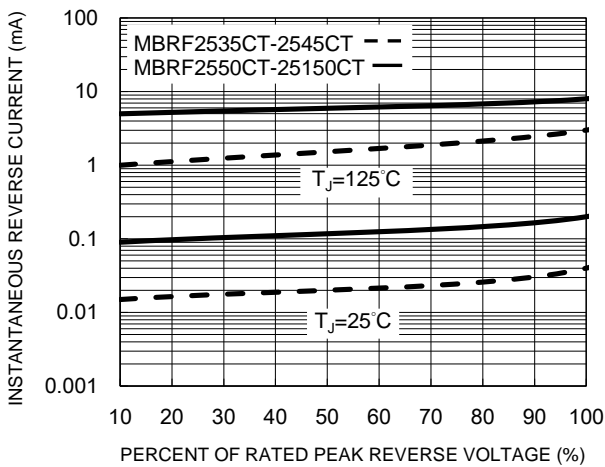


Fig.4 Typical Forward Characteristics

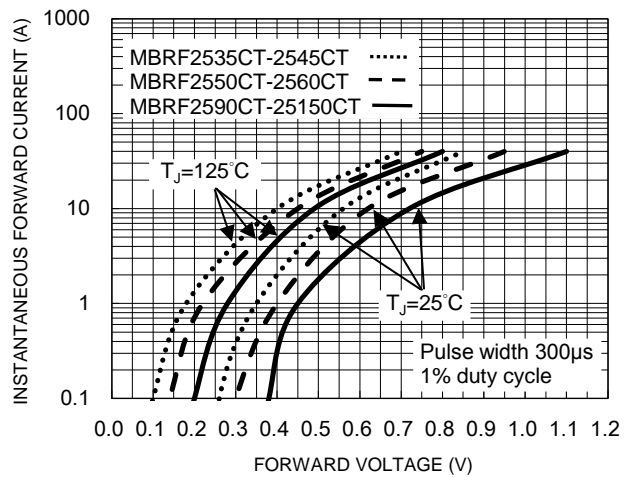
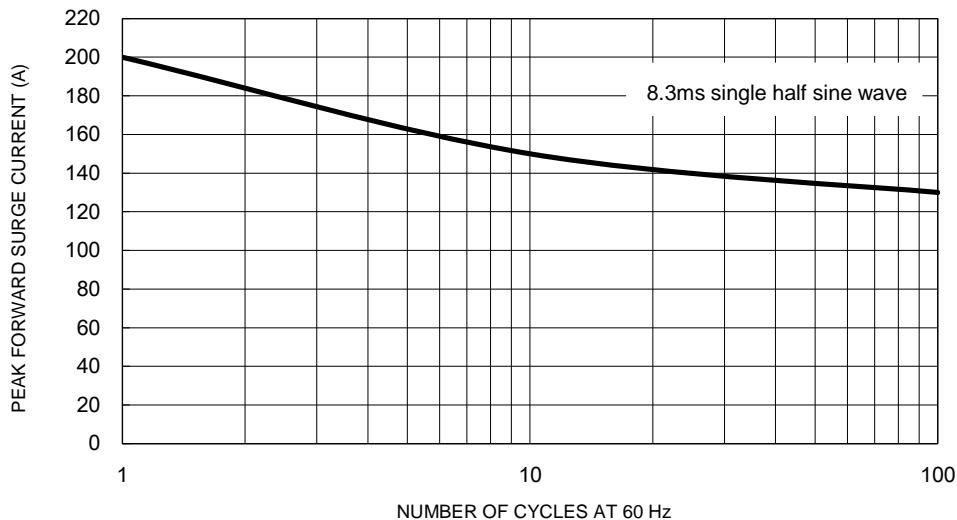


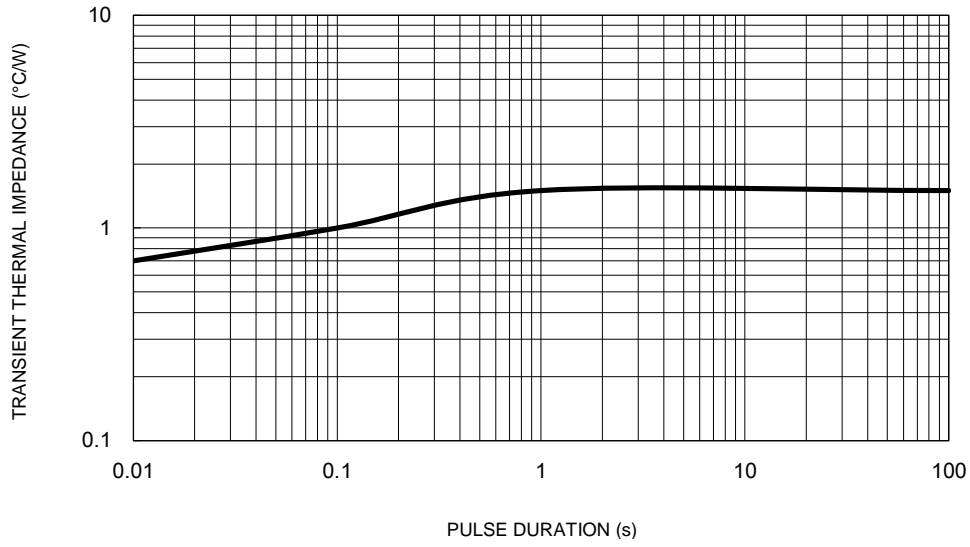
Fig.5 Maximum Non-Repetitive Forward Surge Current



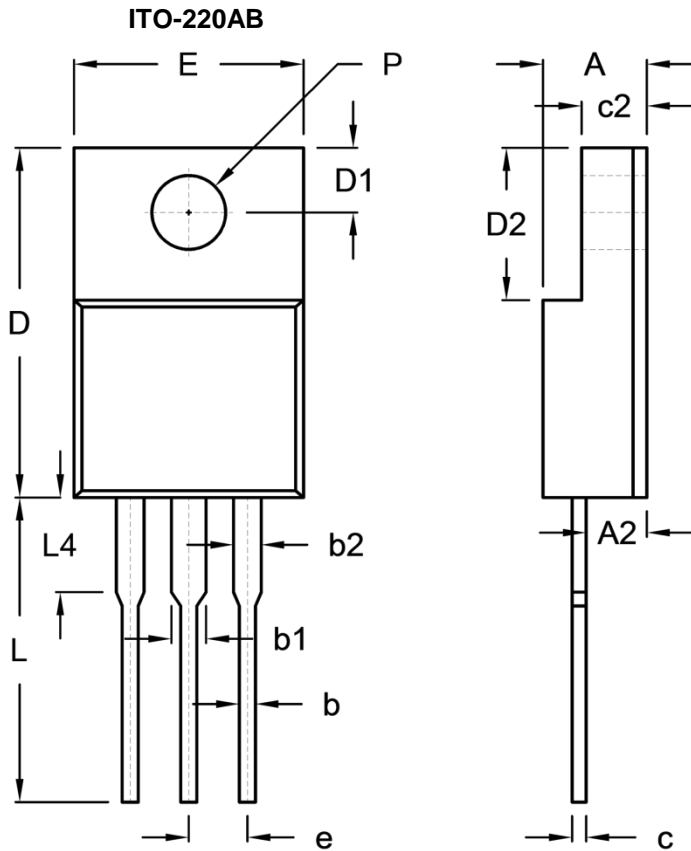
CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ 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