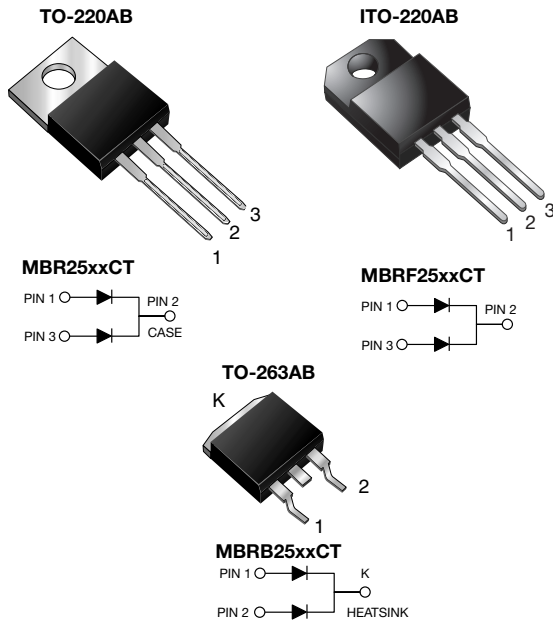


Dual Common-Cathode Schottky Rectifier



FEATURES

- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for TO-263AB package)
- Solder dip 260 °C, 40 s (for TO-220AB and ITO-220AB package)
- Compliant to RoHS 2002/95/EC and in accordance to WEEE 2002/96/EC



RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in low voltage, high frequency rectifier of switching mode power supplies, freewheeling diodes, dc-to-dc converters or polarity protection application.

MECHANICAL DATA

Case: TO-220AB, ITO-220AB, TO-263AB
Epoxy meets UL 94 V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC-Q101 qualified), meets JESD 201 class 2 whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2 x 12.5 A
V_{RRM}	35 V to 60 V
I_{FSM}	150 A
V_F	0.73 V at 30 A, 0.65 V at 15 A
T_J max.	150 °C

MAXIMUM RATINGS ($T_C = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	MBR2535CT	MBR2545CT	MBR2550CT	MBR2560CT	UNIT	
Maximum repetitive peak reverse voltage	V_{RRM}	35	45	50	60	V	
Working peak reverse voltage	V_{RWM}	35	45	50	60		
Maximum DC blocking voltage	V_{DC}	35	45	50	60		
Maximum average forward rectified current at $T_C = 130$ °C	$I_{F(AV)}$	total device				25	A
		per diode				12.5	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	150				A	
Peak repetitive reverse surge current per diode at $t_p = 2$ μ s, 1 kHz	I_{RRM}	1.0		0.5		A	
Peak non-repetitive reverse energy (8/20 μ s waveform) per diode	E_{RSM}	25				mJ	
Electrostatic discharge capacitor voltage human body model: C = 100 pF, R = 1.5 k Ω	V_C	25				kV	
Voltage rate of change (rated V_R)	dV/dt	10 000				V/ μ s	

MBR(F,B)2535CT thru MBR(F,B)2560CT

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MAXIMUM RATINGS (T _C = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	MBR2535CT	MBR2545CT	MBR2550CT	MBR2560CT	UNIT
Operating junction temperature range	T _J	- 65 to + 150				°C
Storage temperature range	T _{STG}	- 65 to + 175				
Isolation voltage (ITO-220AB only) from terminal to heatsink t = 1 min	V _{AC}	1500				V

ELECTRICAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	MBR2535CT	MBR2545CT	MBR2550CT	MBR2560CT	UNIT
Maximum instantaneous forward voltage per diode	I _F = 15 A	T _C = 25 °C	V _F ⁽¹⁾	-	-	0.75		V
		T _C = 125 °C		-	-	0.65		
	I _F = 30 A	T _C = 25 °C		0.82	-	-	-	
		T _C = 125 °C		0.73	-	-	-	
Maximum instantaneous reverse current at blocking voltage per diode		T _C = 25 °C	I _R ⁽¹⁾	0.2	-	1.0		mA
		T _C = 125 °C		40	-	50		

Note

⁽¹⁾ Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	MBR	MBRF	MBRB	UNIT	
Typical thermal resistance from junction to case per diode	R _{θJC}	1.5	4.5	1.5	°C/W	

ORDERING INFORMATION (Example)						
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
TO-220AB	MBR2545CT-E3/45	1.85	45	50/tube	Tube	
ITO-220AB	MBRF2545CT-E3/45	1.99	45	50/tube	Tube	
TO-263AB	MBRB2545CT-E3/45	1.35	45	50/tube	Tube	
TO-263AB	MBRB2545CT-E3/81	1.35	81	800/reel	Tape and reel	
TO-220AB	MBR2545CT-E3/4W	1.85	4W	50/tube	Tube	
TO-220AB	MBR2545CTHE3/45 ⁽¹⁾	1.85	45	50/tube	Tube	
ITO-220AB	MBRF2545CTHE3/45 ⁽¹⁾	1.99	45	50/tube	Tube	
TO-263AB	MBRB2545CTHE3/45 ⁽¹⁾	1.35	45	50/tube	Tube	
TO-263AB	MBRB2545CTHE3/81 ⁽¹⁾	1.35	81	800/reel	Tape and reel	

Note

⁽¹⁾ AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

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

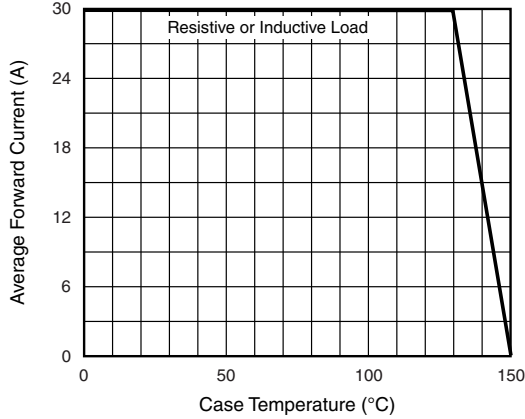


Fig. 1 - Forward Current Derating Curve

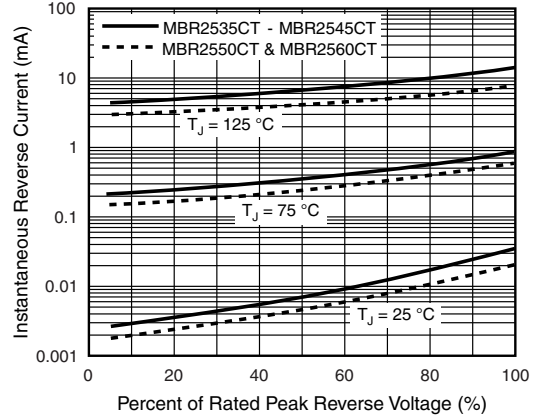


Fig. 4 - Typical Reverse Characteristics Per Diode

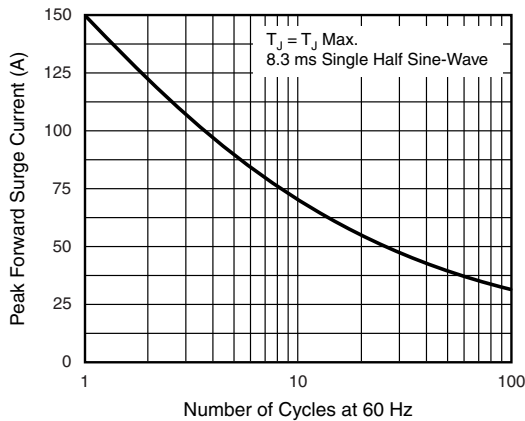


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

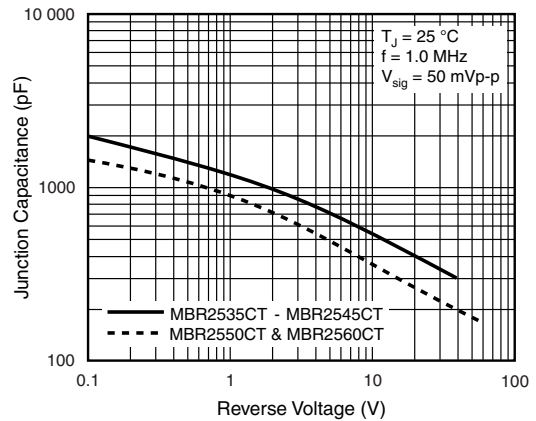


Fig. 5 - Typical Junction Capacitance Per Diode

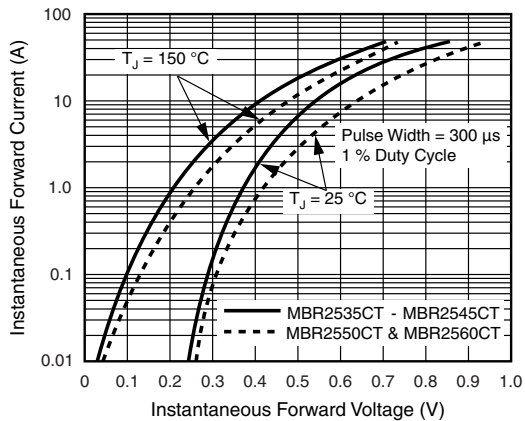


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

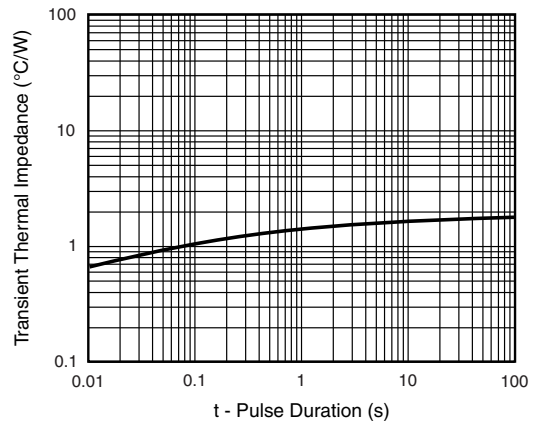


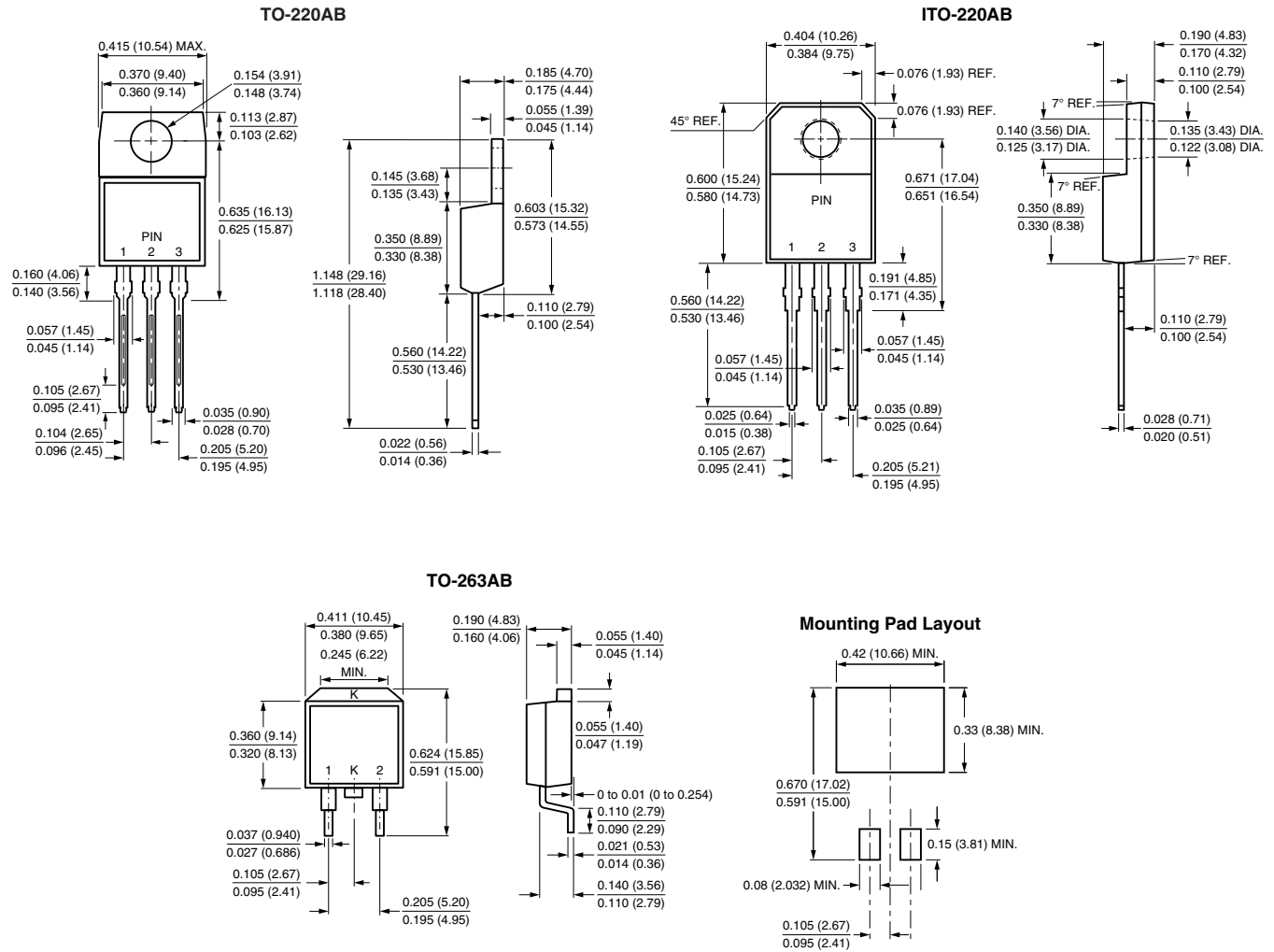
Fig. 6 - Typical Transient Thermal Impedance Per Diode

MBR(F,B)2535CT thru MBR(F,B)2560CT

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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