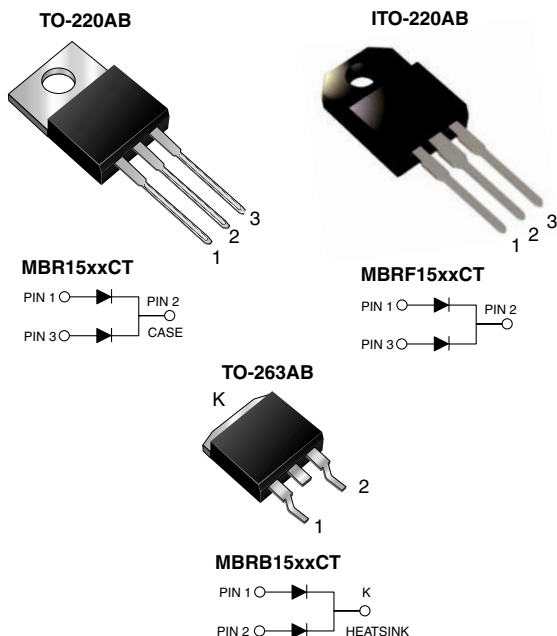


Dual Common-Cathode Schottky Rectifier



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-020C (for TO-263AB package)
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



TYPICAL APPLICATIONS

For use in 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 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

MAJOR RATINGS AND CHARACTERISTICS

$I_{F(AV)}$	7.5 A x 2
V_{RRM}	35 V to 60 V
I_{FSM}	150 A
V_F	0.57 V, 0.65 V
$T_j \text{ max}$	150 °C

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

PARAMETER	SYMBOL	MBR1535CT	MBR1545CT	MBR1550CT	MBR1560CT	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	35	45	50	60	V
Working peak reverse voltage	V _{RWM}	35	45	50	60	V
Maximum DC blocking voltage	V _{DC}	35	45	50	60	V
Maximum average forward rectified current at T _C = 105 °C Total device	I _{F(AV)}	15 7.5				A
Peak repetitive forward current at T _C = 105 °C (rated V _R , 20 kHz sq. wave)	I _{FRM}	15				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	150				A
Peak repetitive reverse surge current per leg at t _p = 2.0 μs, 1 kHz	I _{RRM}	1.0		0.5		A
Voltage rate of change (rated V _R)	dv/dt	10000				V/μs
Operating junction temperature range	T _J	- 65 to + 150				°C
Storage temperature range	T _{STG}	- 65 to + 175				°C
Isolation voltage (ITO-220AB only) From terminal to heatsink t = 1 minute	V _{AC}	1500				V

MBR(F,B)1535CT thru MBR(F,B)1560CT

Vishay General Semiconductor



ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS	SYMBOL	MBR1535CT	MBR1545CT	MBR1550CT	MBR1560CT	UNIT
Maximum instantaneous forward voltage per leg ⁽¹⁾	at $I_F = 7.5\text{ A}$, $T_C = 25\text{ }^{\circ}\text{C}$ at $I_F = 7.5\text{ A}$, $T_C = 125\text{ }^{\circ}\text{C}$ at $I_F = 15\text{ A}$, $T_C = 25\text{ }^{\circ}\text{C}$ at $I_F = 15\text{ A}$, $T_C = 125\text{ }^{\circ}\text{C}$	V_F	- 0.57 0.84 0.72		0.75 0.65 - -		V
Maximum instantaneous reverse current at rated DC blocking voltage per leg ⁽¹⁾	$T_C = 25\text{ }^{\circ}\text{C}$ $T_C = 125\text{ }^{\circ}\text{C}$	I_R	0.1 15		1.0 50		mA

Note:

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

THERMAL CHARACTERISTICS ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	MBR	MBRF	MBRB	UNIT
Maximum thermal resistance per leg	$R_{\theta JA}$ $R_{\theta JC}$	60 3.0	- 5.0	60 3.0	$^{\circ}\text{C/W}$

ORDERING INFORMATION					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	MBR1545CT-E3/45	1.85	45	50/Tube	Tube
ITO-220AB	MBRF1545CT-E3/45	1.99	45	50/Tube	Tube
TO-263AB	MBRB1545CT-E3/45	1.35	45	50/Tube	Tube
TO-263AB	MBRB1545CT-E3/81	1.35	81	800/Reel	Tape Reel

RATINGS AND CHARACTERISTICS CURVES

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

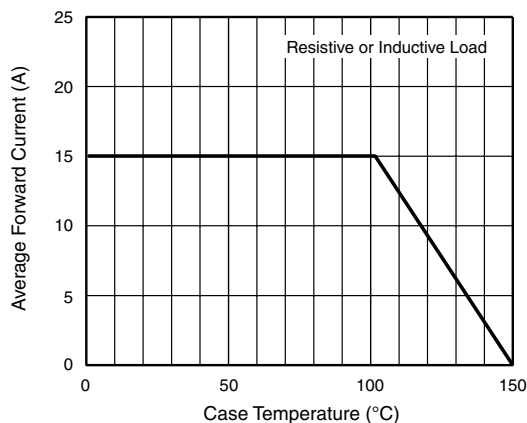


Figure 1. Forward Current Derating Curve

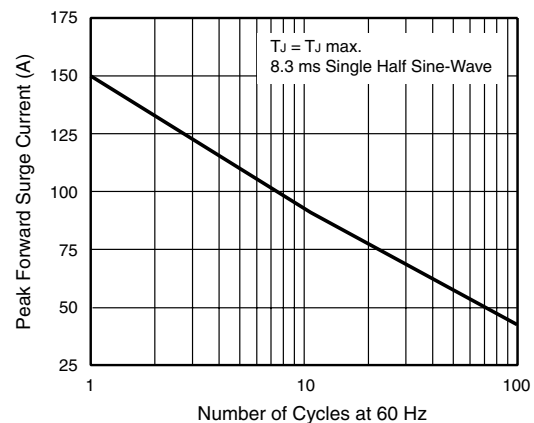


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Leg

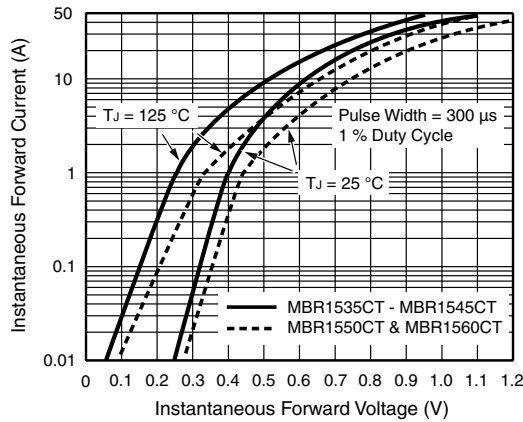


Figure 3. Typical Instantaneous Forward Characteristics Per Leg

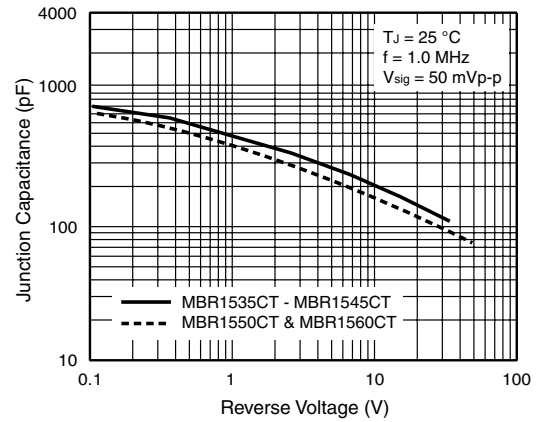


Figure 5. Typical Junction Capacitance Per Leg

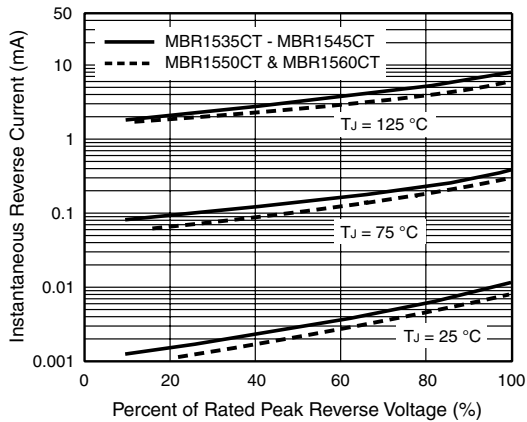


Figure 4. Typical Reverse Characteristics Per Leg

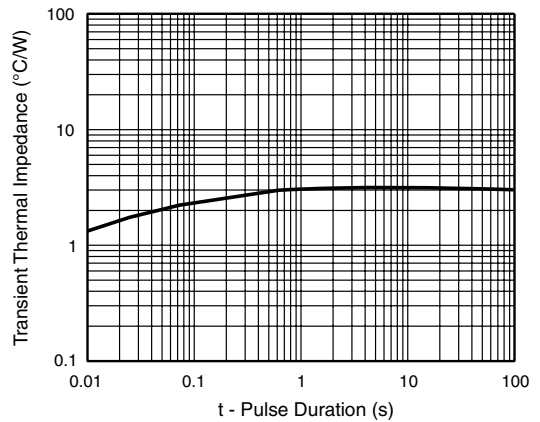


Figure 6. Typical Transient Thermal Impedance Per Leg

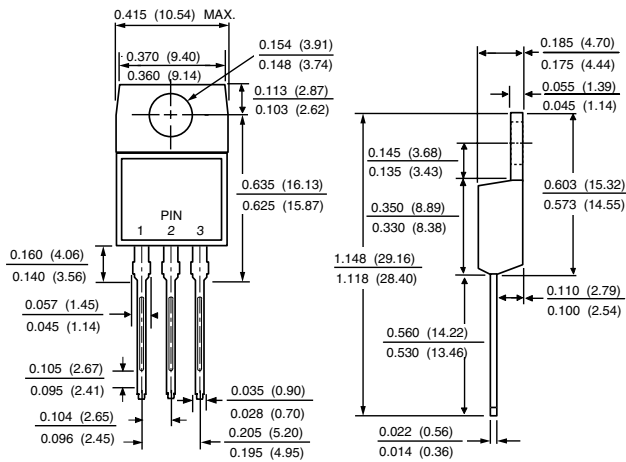
MBR(F,B)1535CT thru MBR(F,B)1560CT

Vishay General Semiconductor

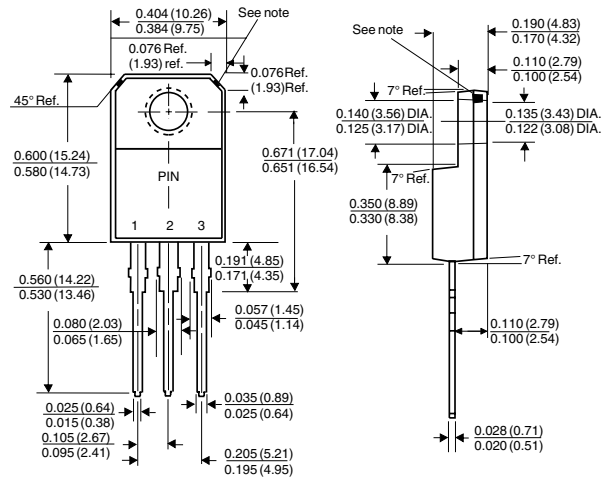


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB

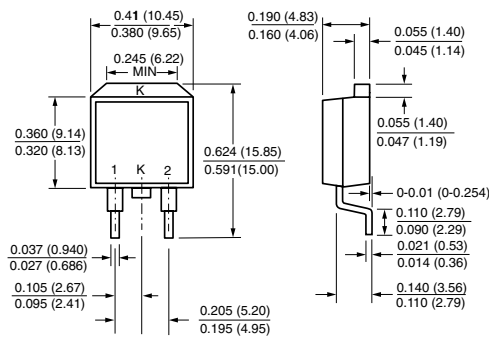


ITO-220AB

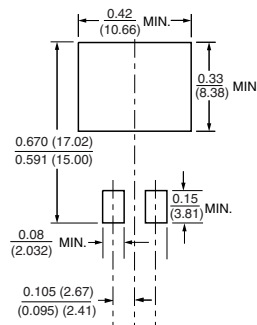


Note: Copper exposure is allowable for 0.005 (0.13) Max. from the body

TO-263AB



Mounting Pad Layout





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