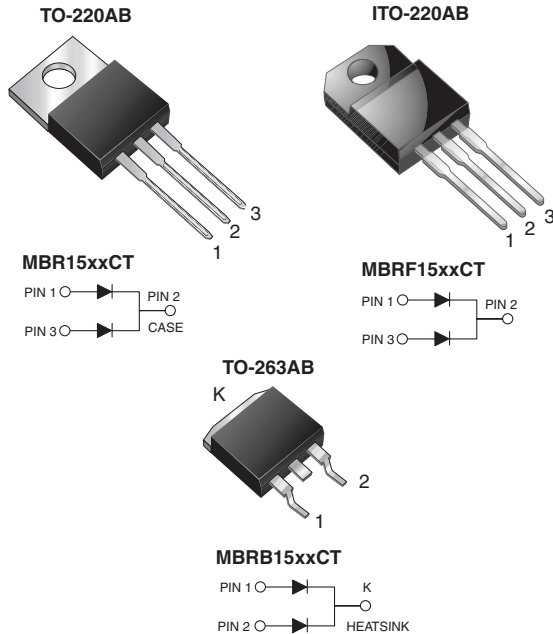


## Dual Common-Cathode Schottky Rectifier



### 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)
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



**RoHS**  
COMPLIANT

### 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-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

$I_{F(AV)}$	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 ( $T_C = 25 \text{ °C}$ 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 $T_C = 105 \text{ °C}$	$I_{F(AV)}$	total device per diode		15		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$			7.5		A
Peak repetitive reverse surge current per diode at $t_p = 2.0 \text{ }\mu\text{s}$ , 1 kHz	$I_{RRM}$			150		A
Peak repetitive reverse surge current per diode at $t_p = 2.0 \text{ }\mu\text{s}$ , 1 kHz	$I_{RRM}$	1.0		0.5		A
Voltage rate of change (rated $V_R$ )	dV/dt			10 000		V/ $\mu\text{s}$
Operating junction temperature range	$T_J$			- 65 to + 150		°C

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

Vishay General Semiconductor



MAXIMUM RATINGS ( $T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	SYMBOL	MBR1535CT	MBR1545CT	MBR1550CT	MBR1560CT	UNIT
Storage temperature range	$T_{STG}$	- 65 to + 175				$^\circ\text{C}$
Isolation voltage (ITO-220AB only) from terminal to heatsink $t = 1\text{ min}$	$V_{AC}$	1500				V

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 diode <sup>(1)</sup>	$I_F = 7.5\text{ A}$	$T_C = 25\text{ }^\circ\text{C}$	$V_F$	-	-	0.75	-	V
	$I_F = 7.5\text{ A}$	$T_C = 125\text{ }^\circ\text{C}$		0.57	-	0.65	-	
	$I_F = 15\text{ A}$	$T_C = 25\text{ }^\circ\text{C}$		0.84	-	-	-	
	$I_F = 15\text{ A}$	$T_C = 125\text{ }^\circ\text{C}$		0.72	-	-	-	
Maximum instantaneous reverse current at rated DC blocking voltage per diode <sup>(1)</sup>			$I_R$	0.1	-	1.0	-	mA
				$T_C = 125\text{ }^\circ\text{C}$	15	-	50	

**Note:**

(1) Pulse test: 300  $\mu\text{s}$  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 diode	$R_{\theta JA}$	60	-	60	$^\circ\text{C/W}$
	$R_{\theta JC}$	3.0	5.0	3.0	

ORDERING INFORMATION (Example)					
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
TO-220AB	MBR1545CTHE3/45 <sup>(1)</sup>	1.85	45	50/tube	Tube
ITO-220AB	MBRF1545CTHE3/45 <sup>(1)</sup>	1.99	45	50/tube	Tube
TO-263AB	MBRB1545CTHE3/45 <sup>(1)</sup>	1.35	45	50/tube	Tube
TO-263AB	MBRB1545CTHE3/81 <sup>(1)</sup>	1.35	81	800/reel	Tape reel

**Note:**

(1) Automotive grade AEC Q101 qualified



## RATINGS AND CHARACTERISTICS CURVES

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

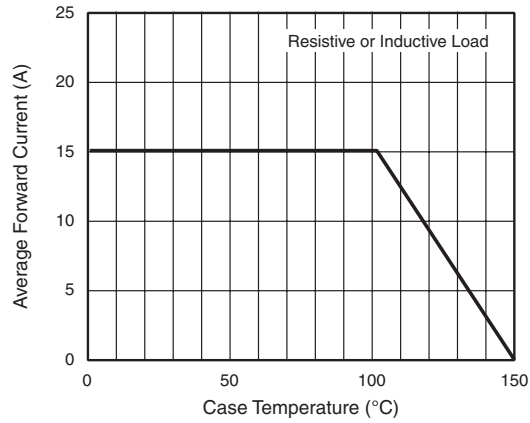


Figure 1. Forward Current Derating Curve

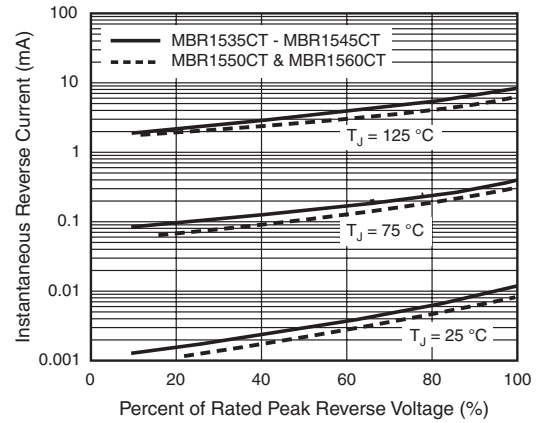


Figure 4. Typical Reverse Characteristics Per Diode

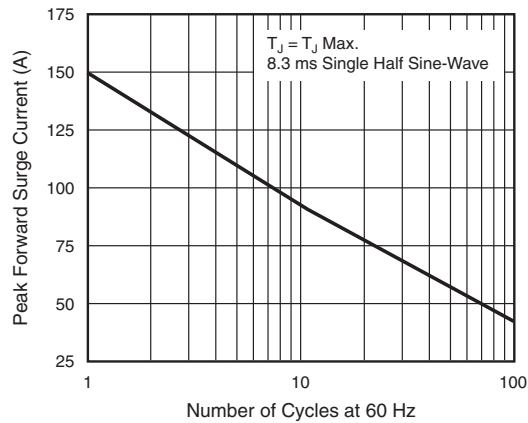


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

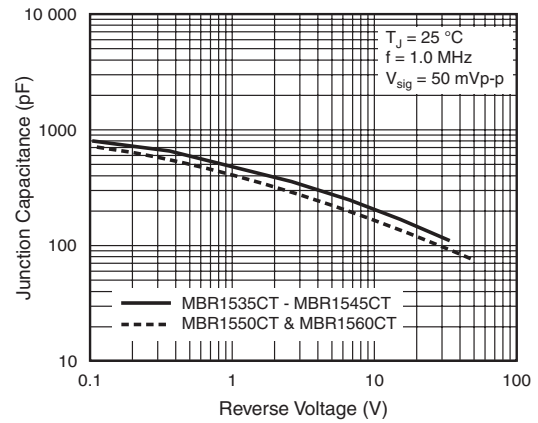


Figure 5. Typical Junction Capacitance Per Diode

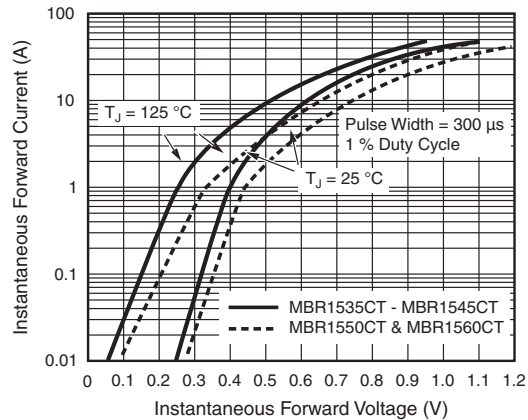


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

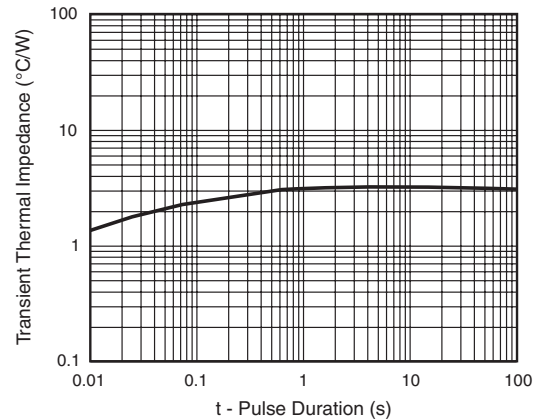


Figure 6. Typical Transient Thermal Impedance Per Diode

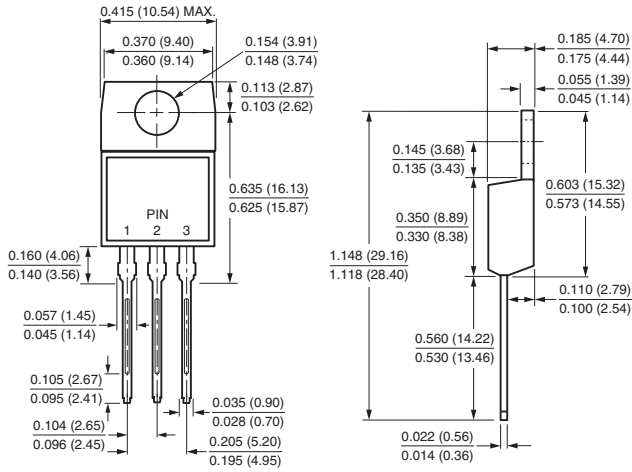
# MBR(F,B)1535CT thru MBR(F,B)1560CT

Vishay General Semiconductor

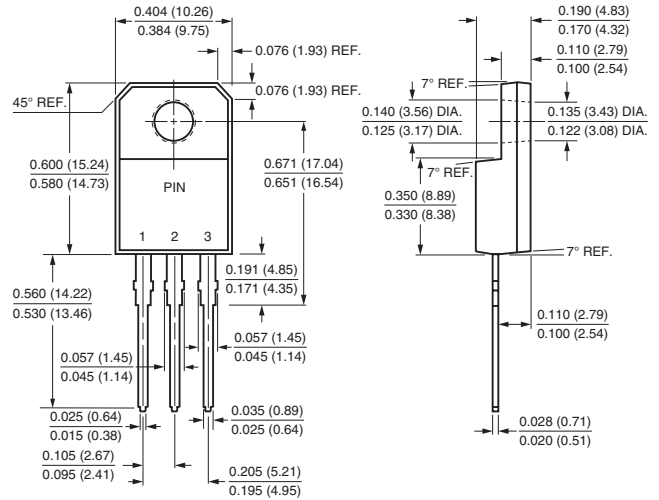


## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

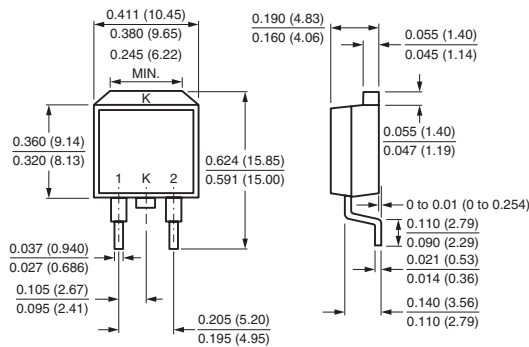
TO-220AB



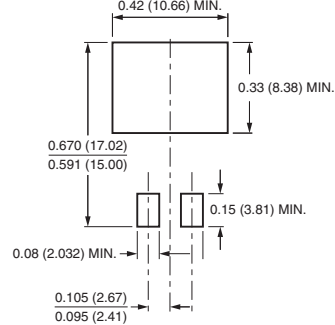
ITO-220AB



TO-263AB



Mounting Pad Layout





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