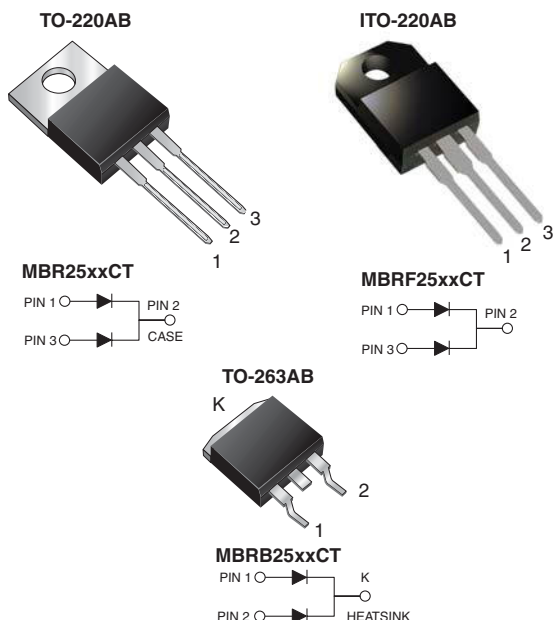


Dual Common-Cathode Schottky Rectifier



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, LF max peak of 245 °C (for TO-263AB package)
- Solder Dip 260 °C, 40 seconds (for TO-220AB & ITO-220AB package)
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



TYPICAL APPLICATIONS

For use in low voltage, high frequency rectifier of switching mode power supplies, free-wheeling 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

$I_{F(AV)}$	15 A x 2
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
$T_j \text{ max}$	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 Total device per diode	I _{F(AV)}	30 15				A
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 μs, 1 kHz	I _{RRM}	1.0		0.5		
Peak non-repetitive reverse energy (8/20 μs waveform) per diode	E _{RSM}	25				mJ
Electrostatic discharge capacitor voltage Human body model: c = 100 pF, R = 1.5 kΩ	V _C	25				kV
Voltage rate of change (rated V _R)	dv/dt	10000				V/μs

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

Vishay General Semiconductor



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 minute	V _{AC}	1500				V

ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS	SYMBOL	MBR2535CT	MBR2545CT	MBR2550CT	MBR2560CT	UNIT
Maximum instantaneous forward voltage per diode ⁽¹⁾	at $I_F = 15\text{ A}$, $T_C = 25\text{ }^{\circ}\text{C}$	V_F	-	-	0.75	-	V
	at $I_F = 15\text{ A}$, $T_C = 125\text{ }^{\circ}\text{C}$		-	-	0.65	-	
	at $I_F = 30\text{ A}$, $T_C = 25\text{ }^{\circ}\text{C}$		0.82	-	-	-	
	at $I_F = 30\text{ A}$, $T_C = 125\text{ }^{\circ}\text{C}$		0.73	-	-	-	
Maximum instantaneous reverse current at blocking voltage per diode ⁽¹⁾	$T_C = 25\text{ }^{\circ}\text{C}$ $T_C = 125\text{ }^{\circ}\text{C}$	I_R	0.2 40	-	1.0 50	-	mA

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					
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 Reel



RATINGS AND CHARACTERISTICS CURVES

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

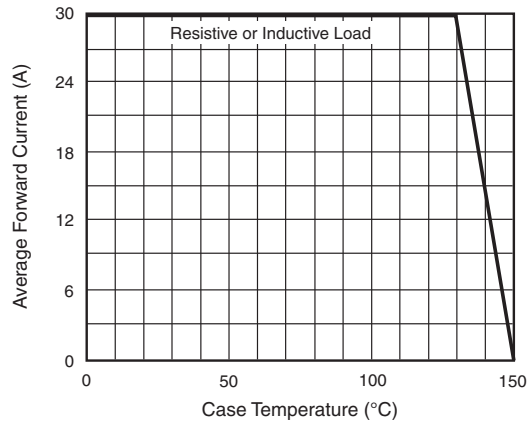


Figure 1. Forward Current Derating Curve

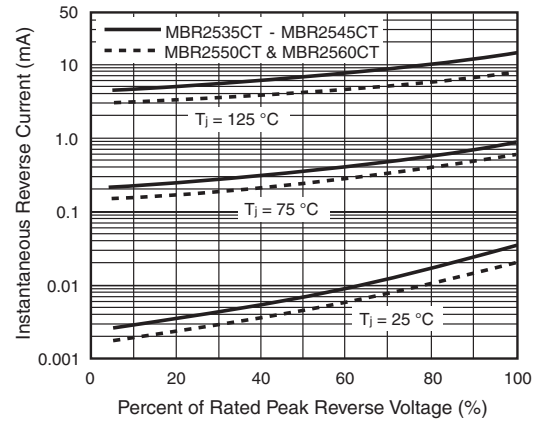


Figure 4. Typical Reverse Characteristics Per Diode

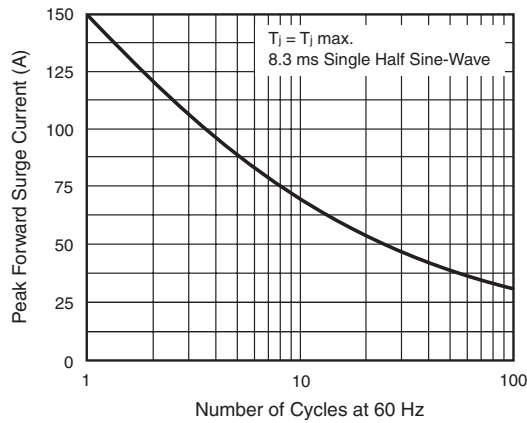


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

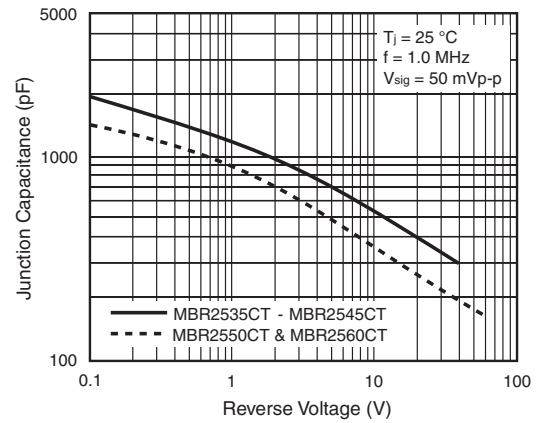


Figure 5. Typical Junction Capacitance Per Diode

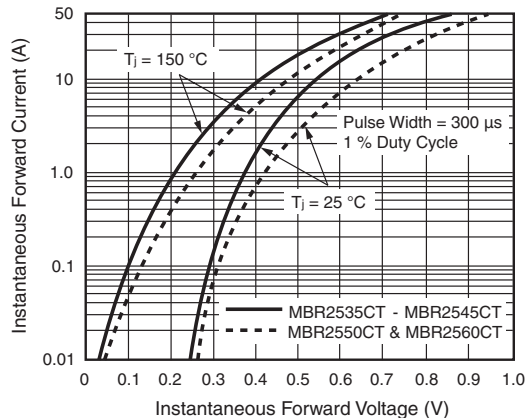


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

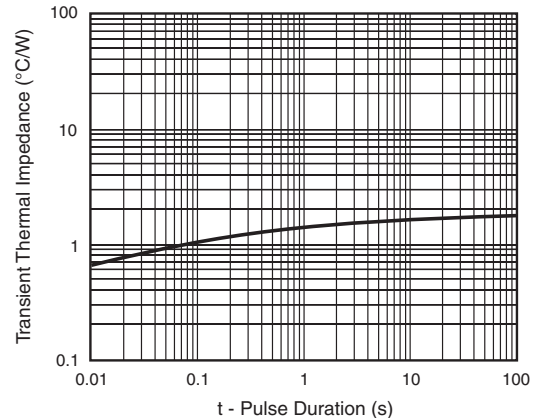
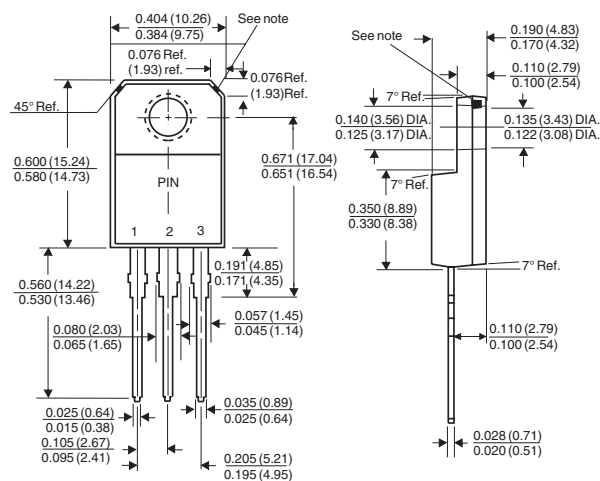


Figure 6. Typical Transient Thermal Impedance Per Diode

Vishay General Semiconductor

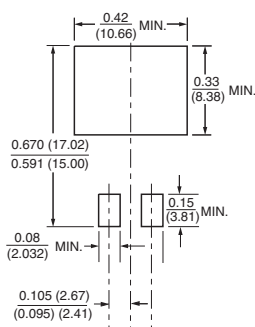


ITO-220AB



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

Mounting Pad Layout





Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.