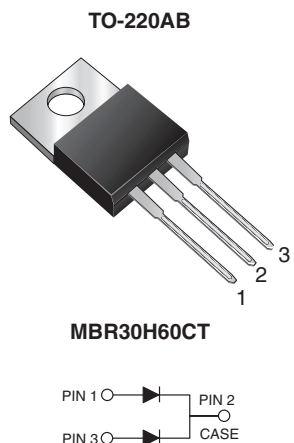


# Dual Common Cathode Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



## FEATURES

- Power pack
- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- High frequency operation
- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

## TYPICAL APPLICATIONS

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

## MECHANICAL DATA

**Case:** TO-220AB

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102  
E3 suffix meets JESD 201 class 1A whisker test

**Polarity:** as marked

**Mounting Torque:** 10 in-lbs maximum

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 15 A
$V_{RRM}$	60 V
$I_{FSM}$	150 A
$V_F$	0.59 V
$I_R$	60 $\mu$ A
$T_J$ max.	175 °C
Package	TO-220AB
Circuit configuration	Common cathode

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)			
PARAMETER	SYMBOL	MBR30H60CT	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	60	V
Working peak reverse voltage	$V_{RWM}$	60	V
Maximum DC blocking voltage	$V_{DC}$	60	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	30	A
		15	
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 $t_p = 2\text{ }\mu$ s, 1 kHz	$I_{RRM}$	0.5	A
Peak non-repetitive reverse energy (8/20 $\mu$ s waveform)	$E_{RSM}$	20	mJ
Non-repetitive avalanche energy per diode at 25 °C, $I_{AS} = 4\text{ A}$ , $L = 10\text{ mH}$	$E_{AS}$	80	mJ
Electrostatic discharge capacitor voltage human body model: $C = 100\text{ pF}$ , $R = 1.5\text{ k}\Omega$	$V_C$	25	kV
Voltage rate of change (rated $V_R$ )	$dV/dt$	10 000	V/ $\mu$ s
Operating junction and storage temperature range	$T_J, T_{STG}$	-65 to +175	°C

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

PARAMETER	TEST CONDITIONS		SYMBOL	MBR30H60CT		UNIT
Maximum instantaneous forward voltage per diode	$I_F = 15\text{ A}$	$T_C = 25\text{ }^{\circ}\text{C}$	$V_F^{(1)}$	-	0.68	V
	$I_F = 15\text{ A}$	$T_C = 125\text{ }^{\circ}\text{C}$		0.55	0.59	
	$I_F = 30\text{ A}$	$T_C = 25\text{ }^{\circ}\text{C}$		-	0.83	
	$I_F = 30\text{ A}$	$T_C = 125\text{ }^{\circ}\text{C}$		0.68	0.71	
Maximum reverse current per diode at working peak reverse voltage		$T_J = 25\text{ }^{\circ}\text{C}$	$I_R^{(2)}$	-	60	$\mu\text{A}$
		$T_J = 125\text{ }^{\circ}\text{C}$		4.0	15	mA

**Notes**(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle(2) Pulse test: pulse width  $\leq 40\text{ ms}$ **THERMAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

PARAMETER	SYMBOL	MBR	UNIT
Typical thermal resistance junction to case per diode	$R_{\theta JC}$	1.5	$^{\circ}\text{C/W}$

**ORDERING INFORMATION** (Example)

PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	MBR30H60CT-E3/45	1.85	45	50/tube	Tube

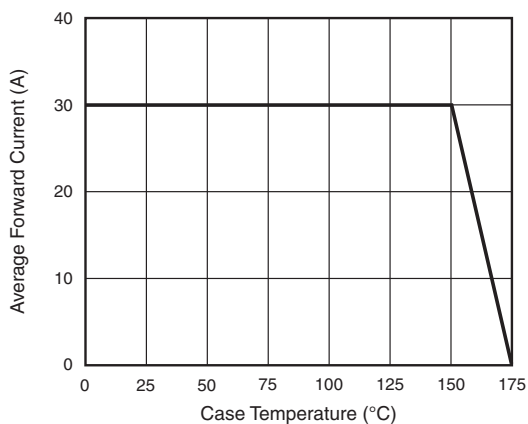
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Forward Derating Curve

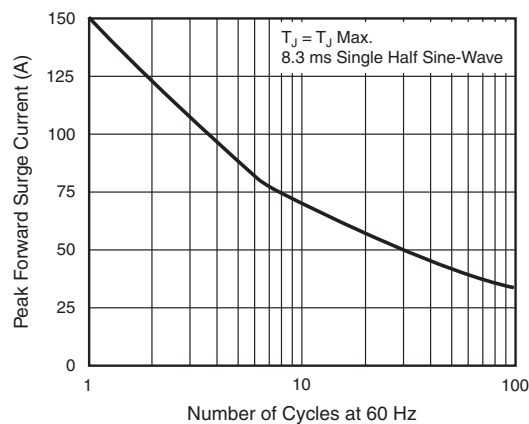


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

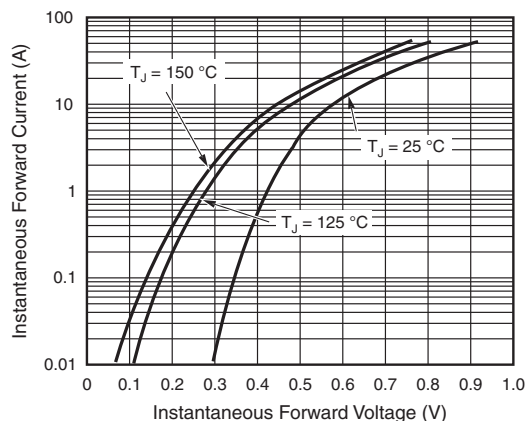


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

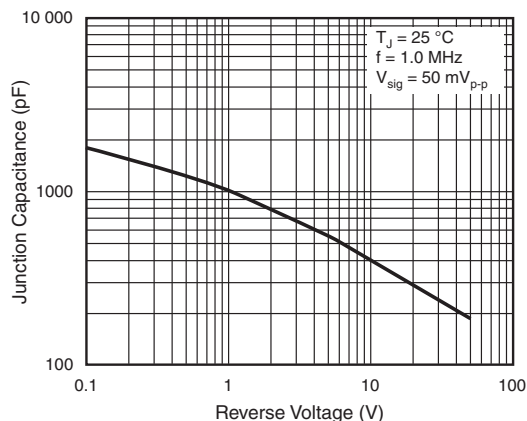


Fig. 5 - Typical Junction Capacitance Per Diode

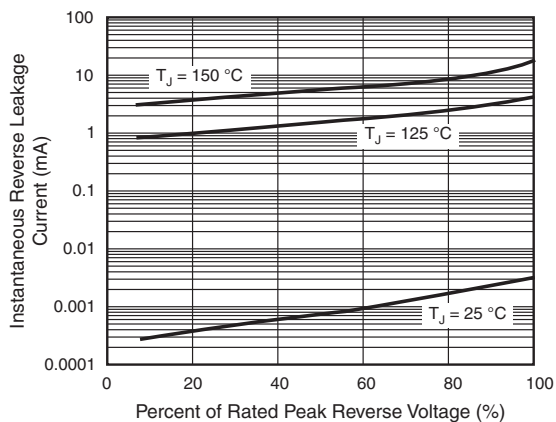


Fig. 4 - Typical Reverse Characteristics Per Diode

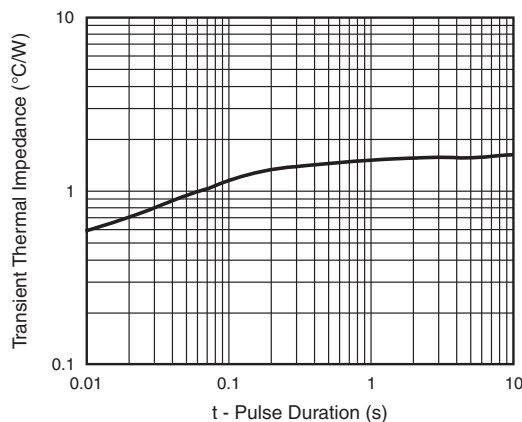
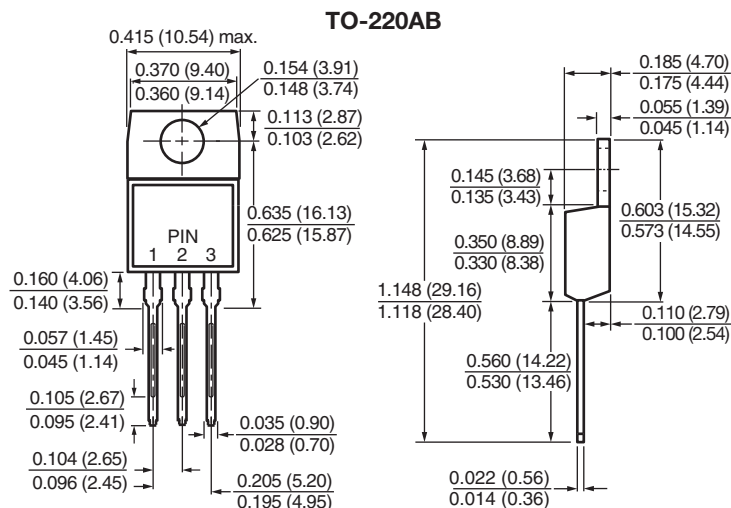


Fig. 6 - Typical Transient Thermal Impedance Per Diode

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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