

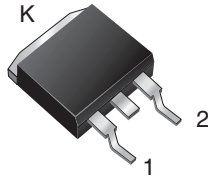
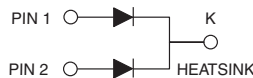


**THE DATASHEET OF  
MBRB25H60CTHE3/81**



## Dual Common Cathode Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance

**D<sup>2</sup>PAK (TO-263AB)**

**MBRB25HxxCT**

**DESIGN SUPPORT TOOLS**
[click logo to get started](#)
**3D**  
Models  
Available

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 15 A
$V_{RRM}$	35 V, 45 V, 60 V
$I_{FSM}$	150 A
$V_F$	0.54 V, 0.60 V
$I_R$	100 $\mu$ A
$T_J$ max.	175 °C
Package	D <sup>2</sup> PAK (TO-263AB)
Circuit configuration	Common cathode

**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
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C
- AEC-Q101 qualified
- 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:** D<sup>2</sup>PAK (TO-263AB)

 Molding compound meets UL 94 V-0 flammability rating  
 Base P/NHE3\_X - RoHS-compliant, AEC-Q101 qualified  
 ("\_X" denotes revision code, e.g. A, B, ...)

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

HE3 suffix meets JESD 201 class 2 whisker test

**Polarity:** as marked

MAXIMUM RATINGS ( $T_C = 25$ °C unless otherwise noted)					
PARAMETER	SYMBOL	MBRB25H35CT	MBRB25H45CT	MBRB25H60CT	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	35	45	60	V
Working peak reverse voltage	$V_{RWM}$	35	45	60	
Maximum DC blocking voltage	$V_{DC}$	35	45	60	
Max. average forward rectified current (fig. 1) <small>total device</small> <small>per diode</small>	$I_{F(AV)}$	30			A
		15			
Non-repetitive avalanche energy per diode at 25 °C, $I_{AS} = 4$ A, $L = 10$ mH	$E_{AS}$	80			mJ
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 $t_p = 2.0$ $\mu$ s, 1 kHz	$I_{RRM}$	1.0	1.0	0.5	A
Peak non-repetitive reverse energy (8/20 $\mu$ s waveform)	$E_{RSM}$	25	25	20	mJ
Electrostatic discharge capacitor voltage Human body model: $C = 100$ pF, $R = 1.5$ 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 <sub>C</sub> = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	TEST CONDITIONS		MBRB25H35CT MBRB25H45CT		MBRB25H60CT		UNIT
				TYP.	MAX.	TYP.	MAX.	
Maximum instantaneous forward voltage per diode	V <sub>F</sub> <sup>(1)</sup>	I <sub>F</sub> = 15 A	T <sub>J</sub> = 25 °C	-	0.64	-	0.70	V
			T <sub>J</sub> = 125 °C	0.50	0.54	0.56	0.60	
		I <sub>F</sub> = 30 A	T <sub>J</sub> = 25 °C	-	0.74	-	0.85	
			T <sub>J</sub> = 125 °C	0.63	0.67	0.68	0.72	
Maximum reverse current per diode	I <sub>R</sub> <sup>(2)</sup>	Rated V <sub>R</sub>	T <sub>J</sub> = 25 °C	-	100	-	100	μA
			T <sub>J</sub> = 125 °C	6.0	20	4.0	20	mA

**Notes**

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T <sub>C</sub> = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	MBRB	UNIT
Thermal resistance, junction to case per diode	R <sub>θJC</sub>	1.5	°C/W

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-263AB	MBRB25H60CTHE3_B/P <sup>(1)</sup>	1.35	P	50/tube	Tube
TO-263AB	MBRB25H60CTHE3_B/I <sup>(1)</sup>	1.35	I	800/reel	Tape and reel

**Note**

- (1) AEC-Q101 qualified



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

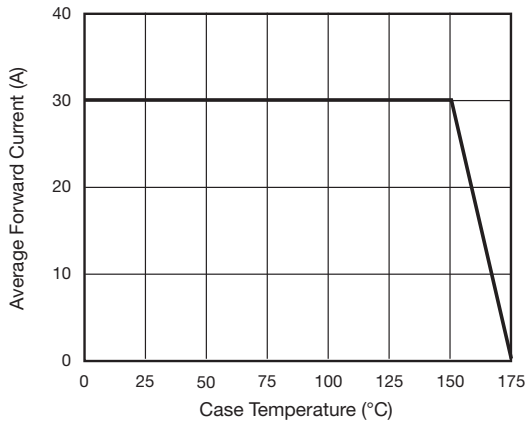


Fig. 1 - Forward Derating Curve (Total)

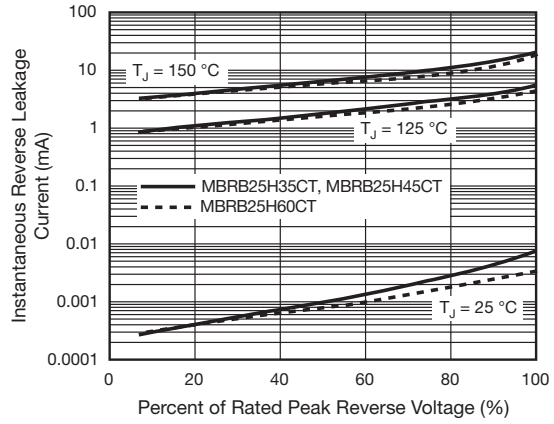


Fig. 4 - Typical Reverse Characteristics Per Diode

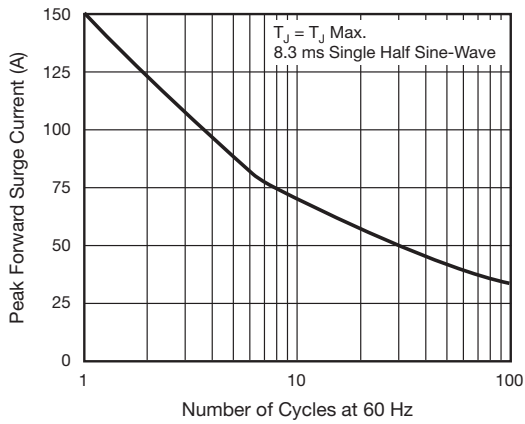


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

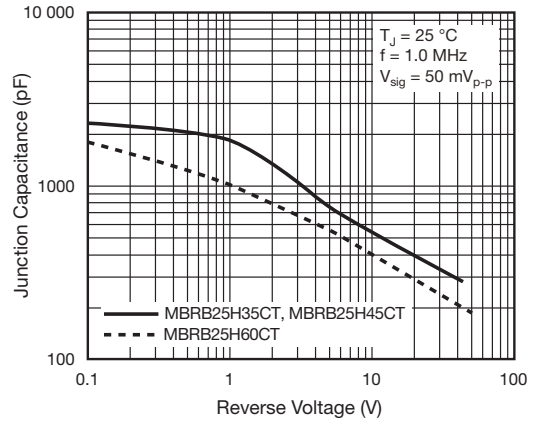


Fig. 5 - Typical Junction Capacitance Per Diode

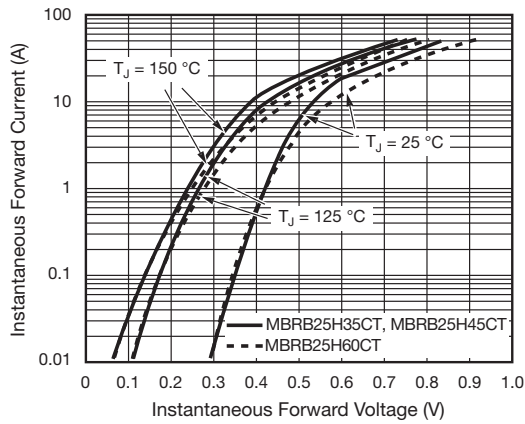


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

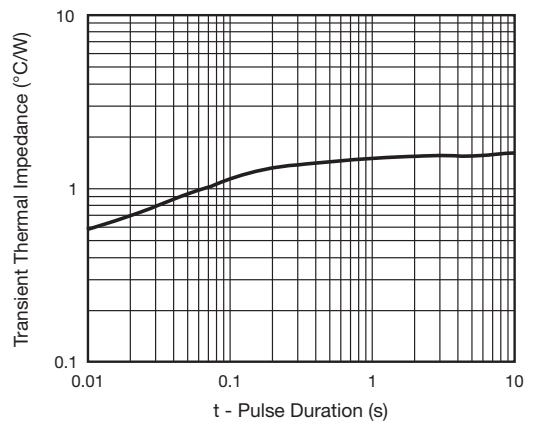
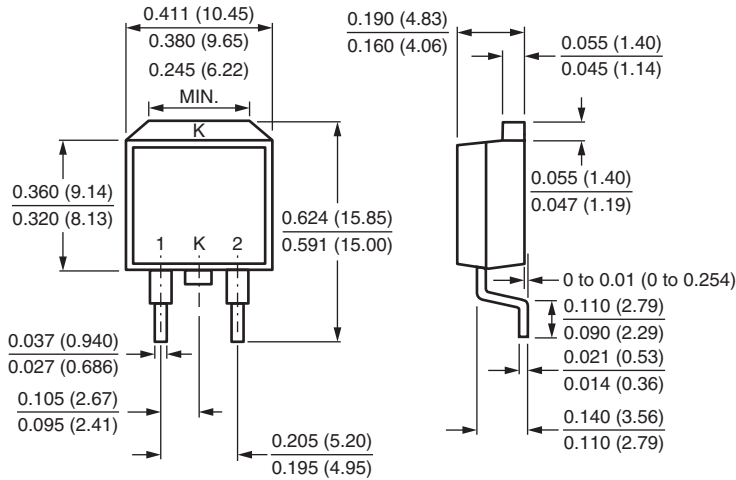


Fig. 6 - Typical Transient Thermal Impedance Per Diode

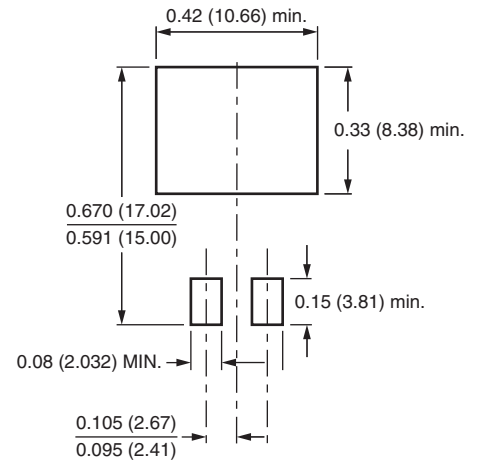


### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

#### D<sup>2</sup>PAK (TO-263AB)



#### Mounting Pad Layout





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