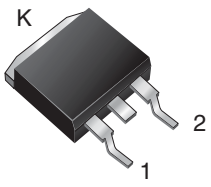
MBRB25H35CT, MBRB25H45CT, MBRB25H60CT

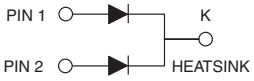
Dual Common Cathode Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance

D²PAK (TO-263AB)



MBRB25HxxCT



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

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: D²PAK (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

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 µA
T_J max.	175 °C
Package	D²PAK (TO-263AB)
Circuit configuration	Common cathode

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) total device	$I_{F(AV)}$	30			A
Max. average forward rectified current (fig. 1) per diode		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 µs, 1 kHz	I_{RRM}	1.0	1.0	0.5	A
Peak non-repetitive reverse energy (8/20 µs waveform)	E_{RSM}	25	25	20	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	10 000			V/µs
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +175			°C

ELECTRICAL CHARACTERISTICS (T_C = 25 °C unless otherwise noted)								
PARAMETER	**SYMBOL**	**TEST CONDITIONS**		**MBRB25H35CT MBRB25H45CT**		**MBRB25H60CT**		**UNIT**
				TYP.	**MAX.**	**TYP.**	**MAX.**	
Maximum instantaneous forward voltage per diode	V_F (1)	I_F = 15 A	T_J = 25 °C	-	0.64	-	0.70	V
			T_J = 125 °C	0.50	0.54	0.56	0.60	
		I_F = 30 A	T_J = 25 °C	-	0.74	-	0.85	
			T_J = 125 °C	0.63	0.67	0.68	0.72	
Maximum reverse current per diode	I_R (2)	Rated V_R	T_J = 25 °C	-	100	-	100	µA
			T_J = 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_C = 25 °C unless otherwise noted)			
PARAMETER	**SYMBOL**	**MBRB**	**UNIT**
Thermal resistance, junction to case per diode	$R_{\theta JC}$	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 (1)	1.35	P	50/tube	Tube
TO-263AB	MBRB25H60CTHE3_B/I (1)	1.35	I	800/reel	Tape and reel

Note

(1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES (T_C = 25 °C unless otherwise noted)

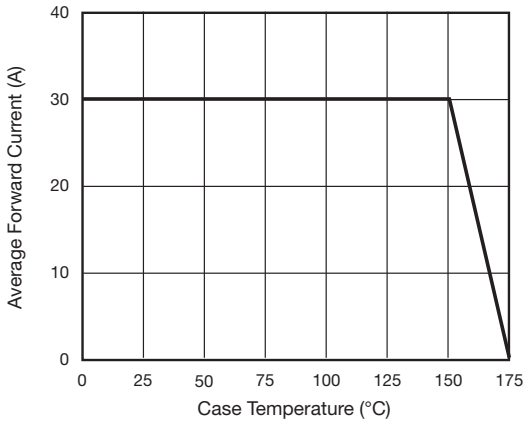


Fig. 1 - Forward Derating Curve (Total)

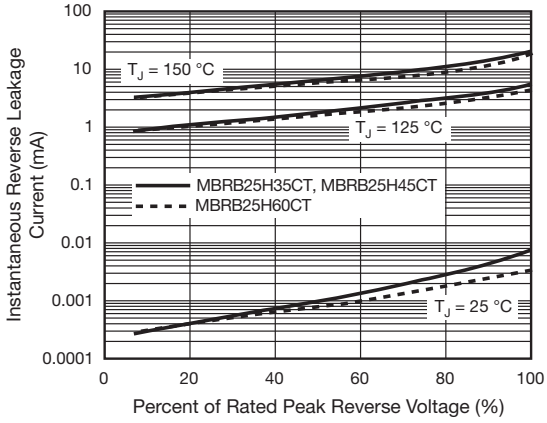


Fig. 4 - Typical Reverse Characteristics Per Diode

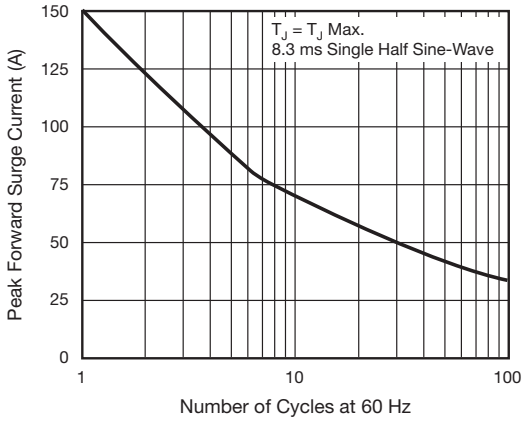


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

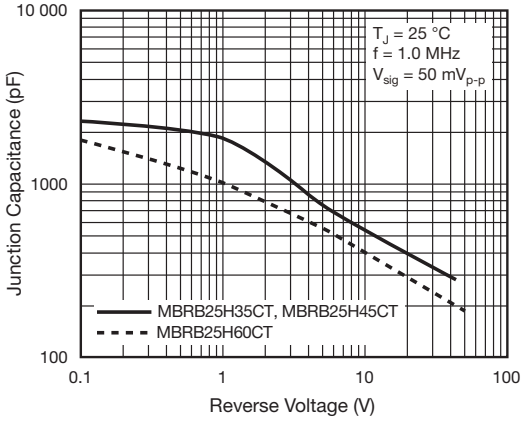


Fig. 5 - Typical Junction Capacitance Per Diode

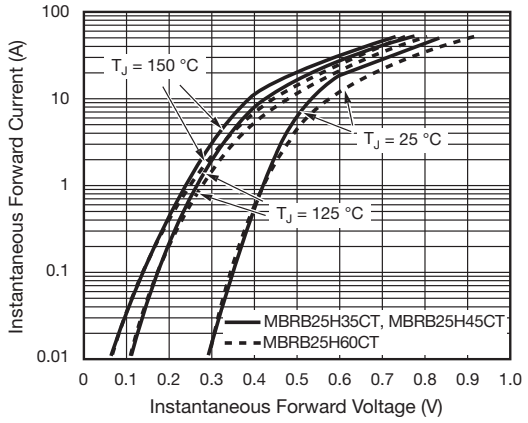


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

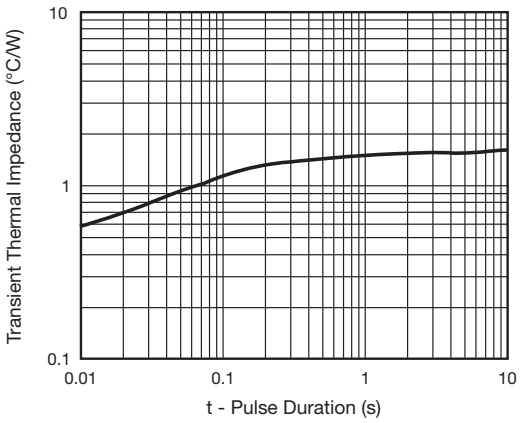
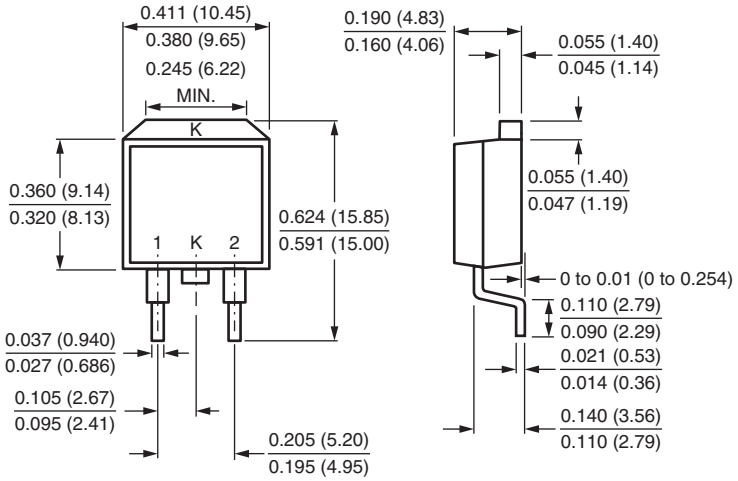


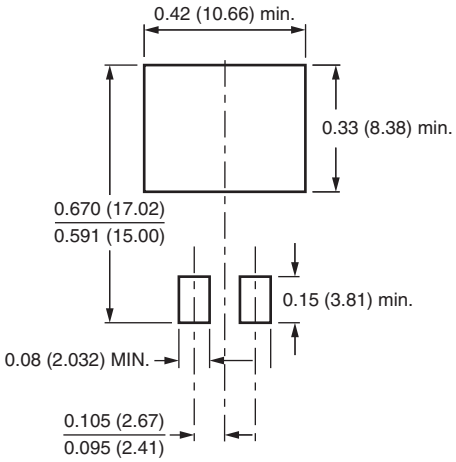
Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

D²PAK (TO-263AB)



Mounting Pad Layout



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