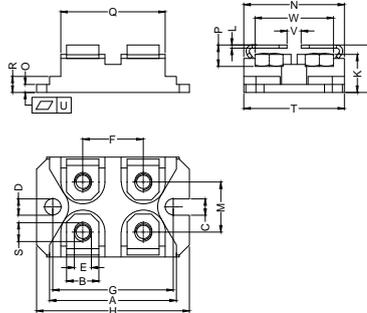


# MBR2x40-XX

## High T<sub>jm</sub> Low IRRM Schottky Barrier Diodes



Dimensions SOT-227(ISOTOP)



Dim.	Millimeter		Dim.	Millimeter	
	Min.	Max.		Min.	Max.
A	31.30	31.65	M	12.00	13.00
B	7.80	8.40	N	25.15	25.65
C	4.00	4.30	O	1.95	2.15
D	∅4.00	∅4.30	P	5.60	6.60
E	4.00	4.30	Q	25.30	26.30
F	14.90	15.20	R	3.90	4.30
G	30.10	30.30	S	4.45	4.85
H	38.00	38.50	T	24.50	25.10
J	12.10	12.90	U	0.05	0.10
K	9.00	9.60	V	3.00	4.80
L	0.75	0.85	W	19.30	20.50

	V <sub>RSM</sub> V	V <sub>RSM</sub> V
<b>MBR2X40-100</b>	100	100
<b>MBR2X40-150</b>	150	150
<b>MBR2X40-200</b>	200	200

Symbol	Test Conditions	Maximum Ratings	Unit
I <sub>FRMS</sub>		66	
I <sub>FAVM</sub>	T <sub>C</sub> =105°C; rectangular, d=0.5	40	A
I <sub>FAVM</sub>	T <sub>C</sub> =105°C; rectangular, d=0.5; per device	80	
I <sub>FSM</sub>	T <sub>VJ</sub> =45°C; t <sub>p</sub> =10ms (50Hz), sine	530	A
EAS	I <sub>AS</sub> =20A; L=180uH; T <sub>VJ</sub> =25°C; non-repetitive	50	mJ
I <sub>AR</sub>	V <sub>A</sub> =1.5·V <sub>RRM</sub> typ.; f=10kHz; repetitive	1.8	A
(dv/dt) <sub>cr</sub>		1000	V/us
T <sub>VJ</sub>		-40...+150	°C
T <sub>VJM</sub>		150	
T <sub>stg</sub>		-40...+150	
P <sub>tot</sub>	T <sub>C</sub> =25°C	100	W
V <sub>ISOL</sub>	50/60Hz, RMS; I <sub>ISOL</sub> ≤1mA	2500	V~
M <sub>d</sub>	mounting torque (M4); terminal connection torque (M4)	1.1-1.5/9-13	Nm/lb.in.
Weight	typical	30	g

Symbol	Test Conditions	Characteristic Values			Unit
		typ.			
I <sub>R</sub>	T <sub>VJ</sub> =25°C; V <sub>R</sub> =V <sub>RRM</sub> T <sub>VJ</sub> =125°C; V <sub>R</sub> =V <sub>RRM</sub>			20 200	mA
V <sub>F</sub>	I <sub>F</sub> =40A; T <sub>VJ</sub> =125°C I <sub>F</sub> =40A; T <sub>VJ</sub> =25°C I <sub>F</sub> =80A; T <sub>VJ</sub> =125°C	100 0.80 0.86 0.96	150 0.85 0.96 1.00	200 0.90 1.00 1.10	V
R <sub>thJC</sub> R <sub>thCH</sub>		0.08			0.75 K/W

### FEATURES

- \* International standard package SOT-227
- \* Isolation voltage 2500 V~
- \* 2 independent Schottky diodes in 1 package
- \* Low V<sub>F</sub>
- \* Extremely low switching losses
- \* Low I<sub>RM</sub>-values
- \* RoHS compliant

### APPLICATIONS

- \* Rectifiers in switch mode power supplies (SMPS)
- \* Free wheeling diode in low voltage converters

### ADVANTAGES

- \* High reliability circuit operation
- \* Low voltage peaks for reduced protection circuits
- \* Low noise switching
- \* Low losses

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## High T<sub>jm</sub> Low IRRM Schottky Barrier Diodes

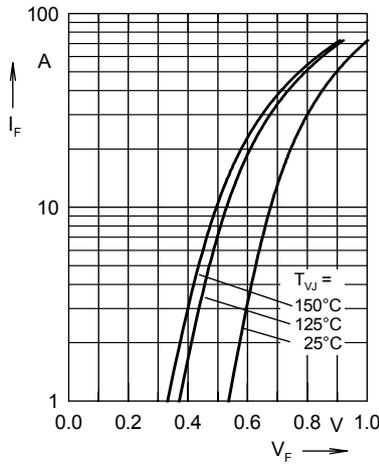


Fig. 1 Maximum forward voltage drop characteristics

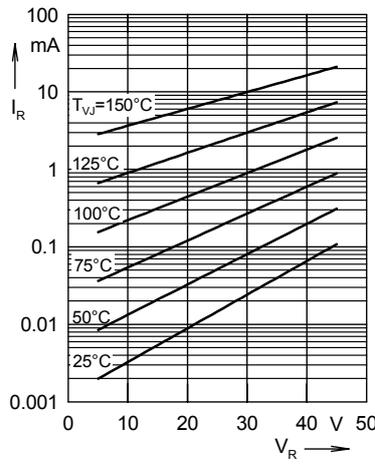


Fig. 2 Typ. value of reverse current  $I_R$  versus reverse voltage  $V_R$

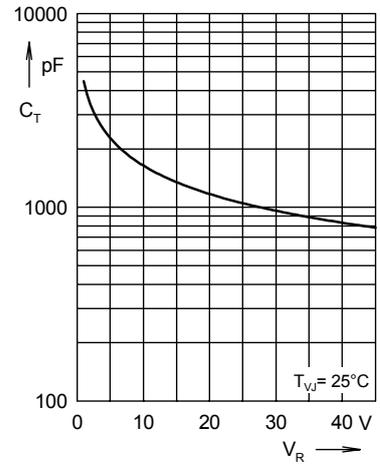


Fig. 3 Typ. junction capacitance  $C_T$  versus reverse voltage  $V_R$

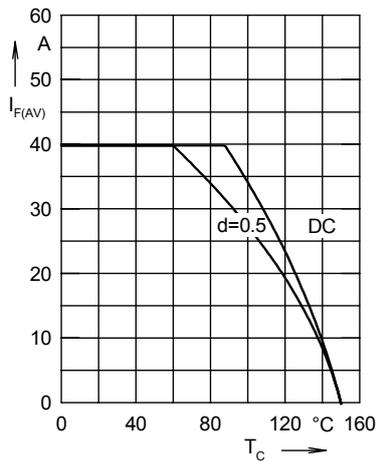


Fig. 4 Average forward current  $I_{F(AV)}$  versus case temperature  $T_c$

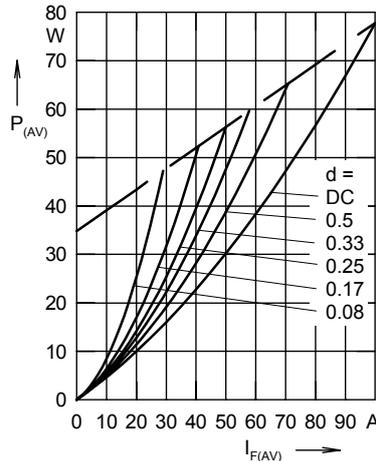


Fig. 5 Forward power loss characteristics

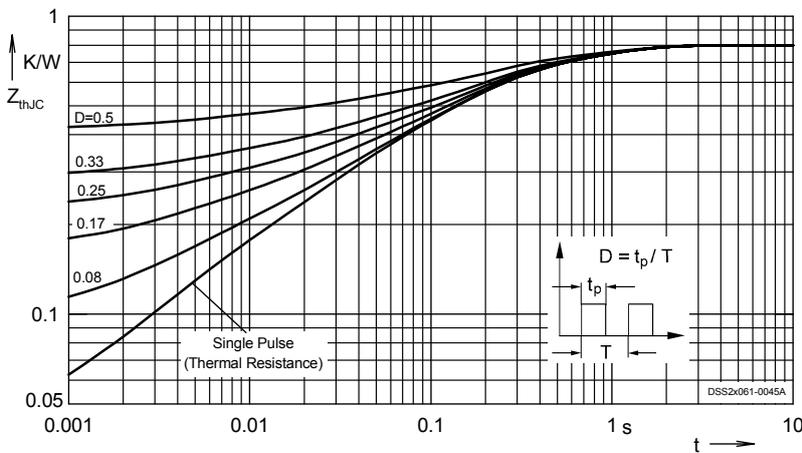


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode