MBRE200200 Series

Chip Integration Technology Corporation

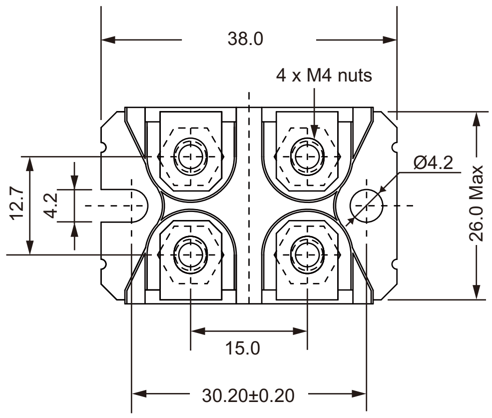
2X100A Power Schottky Module Rectifier

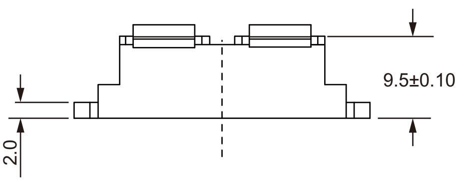
Main Product Characteristics

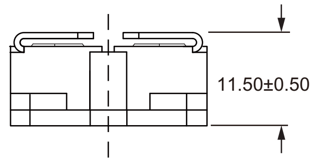
I_{FAV}	2X100A
V_{RRM}	200V
V_F	0.85V

■Outline

SOT-227







Dimensions in millimeters

■Features

- High Frequency operation.
- Very Low V_F.
- Extremely low switching losses.
- Low I_{RM}-values.
- Copper internally DBC isolated.
- Insulated package(V_{ISO} =2500V_{RMS}).

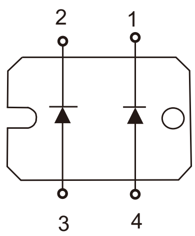
■Applications

- Rectifiers in switch mode power Supplies(SMPS).
- Free wheeling diode in low voltage converters.

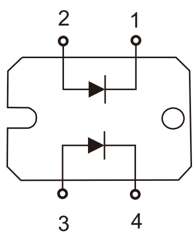
■Advantages

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

■Circuit Diagram



MBRE200200K1



MBRE200200K2

■Maximum ratings

Symbol	Conditions		Ratings	UNIT
I_{FRMS}			150	A
I_{FAVM}	T_C =105°C; Rectangular , d=0.5; per diode		100	
	T_C =105°C; Rectangular , d=0.5; per module		200	
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine		1400	
$(dv/dt)_{cr}$			5000	V/μs
T_{VJ}			-40 ~ +150	°C
T_{STG}			-40 ~ +150	°C
P_{tot}	T_C =25°C		310	W
M_d	Mounting torque(M4)		1.1~1.5	Nm
	Terminal connection torque(M4)		1.1~1.5	
Weight	Typical		30	g
V_{ISOL}	50/60Hz , RMS , I_{ISOL}<1mA	1 second	3000	V
		1 minute	2500	

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■Electrical and Thermal characteristics

Symbol	Conditions		Values		UNIT
			Typ.	Max.	
I_R	$V_R = V_{RRM}$; T_{VJ}=25°C (Pulse Width=5ms,Duty Cycle<2.0%)			0.5	mA
	$V_R = V_{RRM}$; T_{VJ}=125°C(Pulse Width=5ms,Duty Cycle<2.0%)			15	
V_F	I_F=100A ;T_{VJ}=125°C			0.85	V
	I_F=100A ;T_{VJ}=25°C			0.95	
	I_F=200A ;T_{VJ}=125°C			1.10	
$R_{\theta JC}$	Junction to case	Par leg		0.80	°C/W
		Total		0.4	
$R_{\theta CH}$			0.10		

■Performance Curves

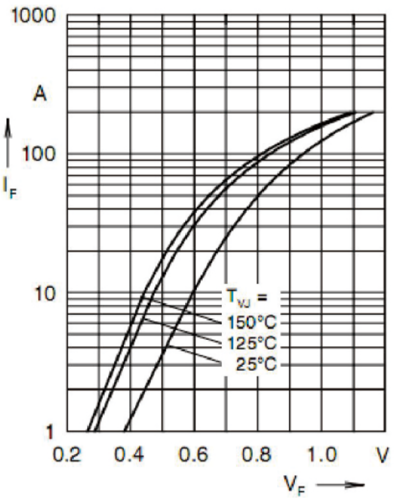

Fig. 1 Max. forward voltage drop characteristics

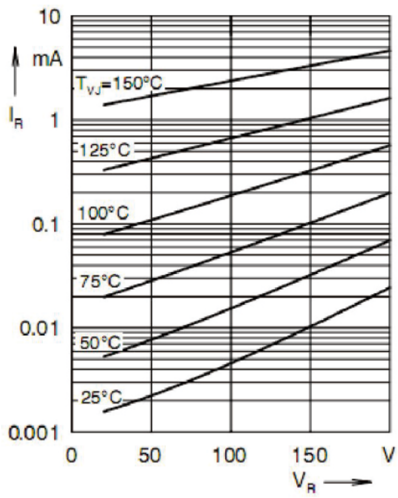

Fig. 2 Typ. reverse current I_R vs. reverse voltage V_R

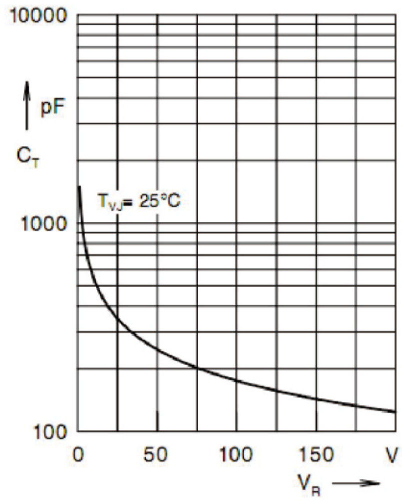

Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

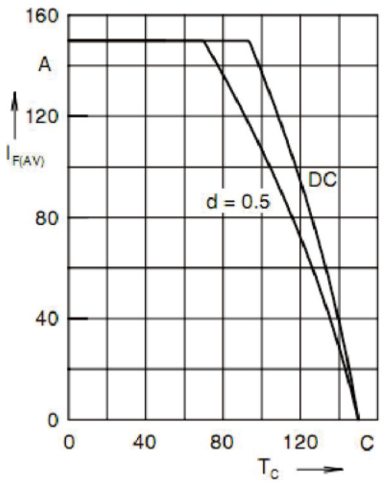

Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

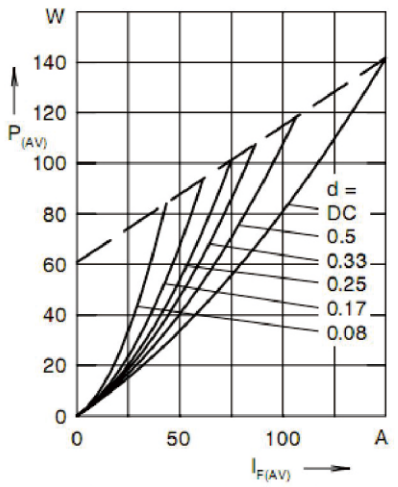

Fig. 5 Forward power loss characteristics

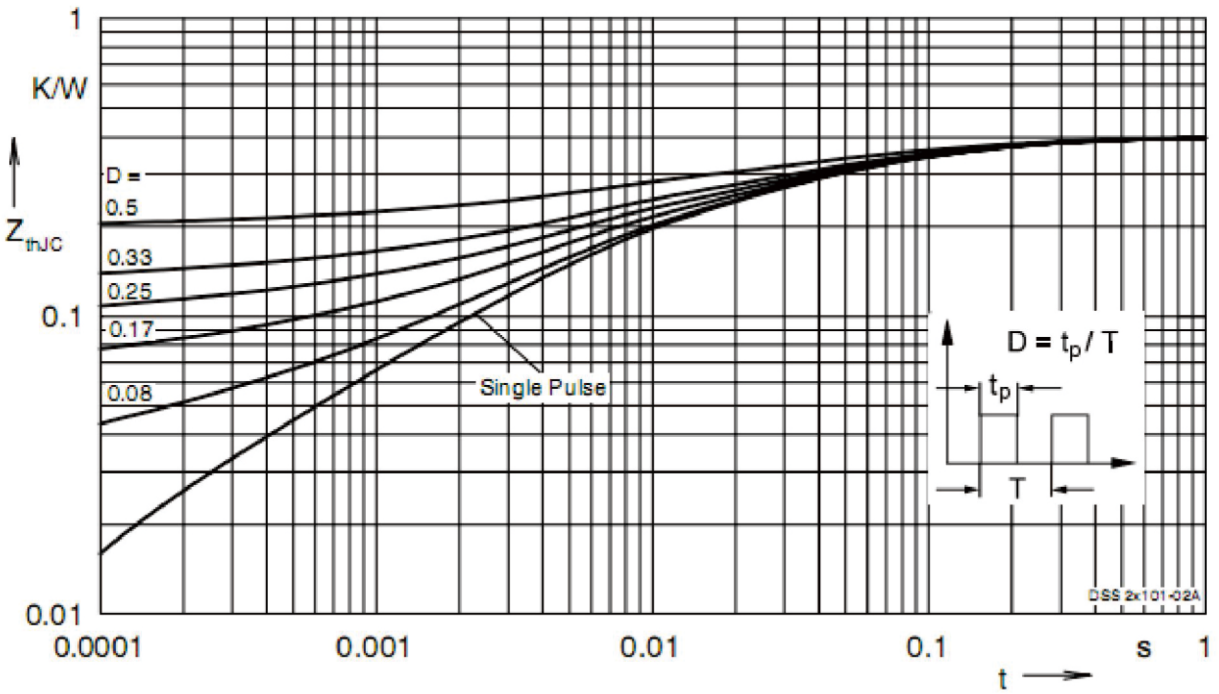

Fig. 6 Transient thermal impedance junction to case at various duty cycles