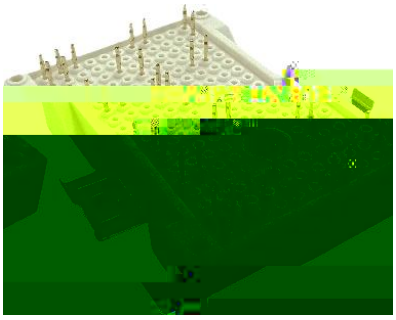
S1P05R120HBB

1200V / 240A All-Silicon Carbide MOSFET Half-Bridge Module

Features



Electrical features
V_{Dss} = 1200V
I_D nom = 240A
High-speed Switching Possible
High Power Density
High Frequency Operation
Ultra-low Losses

Applications



Servo drives
UPS system
Motor drives
High power converters
Photovoltaic
Wind power generation
Induction heating equipment

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1 Maximum ratings

Table 1 Maximum rating (Tc = 25°C unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions	Note
$V_{DS,max}$	Drain source voltage	1200	V	V_{GS} = 0V, I_D = 6	
$V_{GS,max}$	Gate source voltage	-8 /+22	V	Absolute maximum values	
V_{GSop}	Gate source voltage	-4 /+18	V	Recommended operational values	
I_D	Continuous drain current	240	A	V_{GS} = 18V, T_C = 100	
$I_{D(pulse)}$	Pulsed drain current	480	A	Pulse width tp limited by T_j,max	
T_J ,T_{stg}	Operating Junction and storage temperature	-40 to +175			

2 Packaging Characteristics

Table 2 Package Characteristics

Symbol	Description	Value	Unit	Note
R_{HS}	High-side Resistance	4.5		

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Datasheet

4 Electrical characteristic diagram

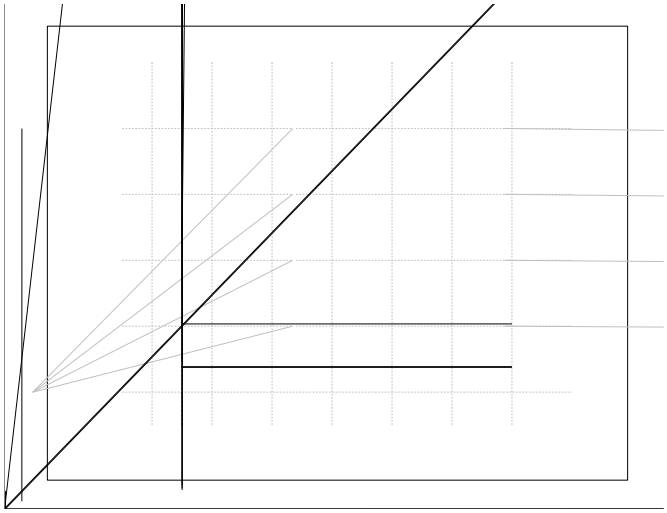


Figure 1. Output Characteristic, T_{vj}

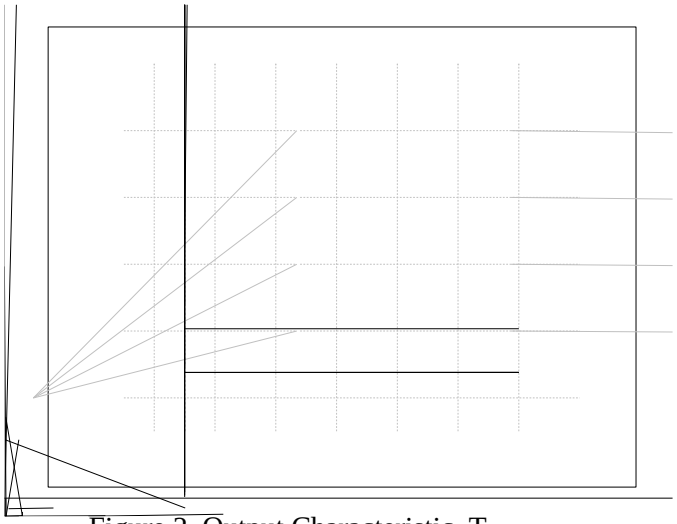


Figure 2. Output Characteristic, T_{vj}



Figure 3. Transfer Characteristic



Figure 4. On-resistance VS. Junction Temperature



Figure 5. On-resistance VS. Drain to Source Current

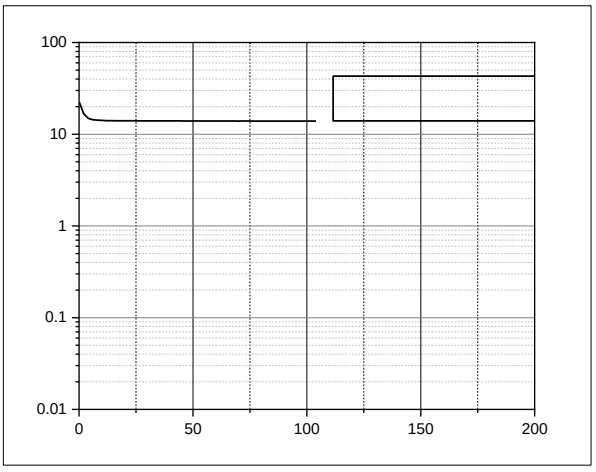


Figure 6. Capacitance VS. V_{DS}

Figure 7. 3rd Quadrant Characteristic

Figure 8. MOSFET Switching Energy vs. External Gate Resistance

Figure 9. MOSFET Switching Energy vs. Drain to Source Current

Figure 10. Transient Thermal Impedance (junction to case)

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