

SLC2C400N&P120

1200V SiC Schottky Diode Module

Features

- Revolutionary semiconductor material - Silicon Carbide
- No reverse recovery current
- Temperature independent switching behavior
- Excellent thermal performance
- High reliability
- Isolation Type Package

Applications

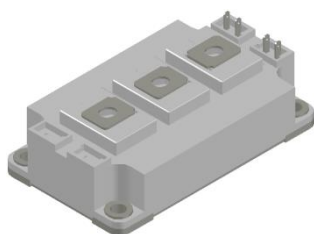
- Power Quality Management
- Energy Storage

Description

The SiC Schottky Diode Module 7SM-3 package devices are optimized to reduce losses and switching noise in high frequency power conditioning electrical systems.

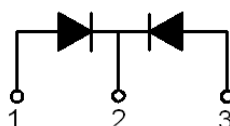
These SiC Schottky Diode Module series are ideally suited for Energy Storage ,High Power inverters, Power Quality Management and other applications where switching losses are significant portion of the total losses.

Package Type & Internal Circuit

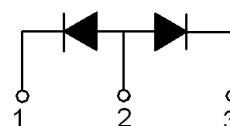


7SM-3

SLC2C400N120



SLC2C400P120



Equivalent Circuit

Absolute Maximum Ratings (at $T_c=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter		Ratings	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		1200	V
V_{DC}	DC Blocking Voltage		1200	V
$I_{F(AVG)}$	Average Forward Current	$T_c \leq 135^\circ\text{C}$	400	A
I_{FSM}	Non-Repetitive Forward Current , $t_p=8.3\text{ms}$, Half Sine Wave		2500	A
P_D	Maximum Power Dissipation		2000	W
T_J	Operating Junction Temperature Range		-55~+175	$^\circ\text{C}$
T_{STG}	Storage Temperature Range		-55~+150	$^\circ\text{C}$
V_{ISO}	Isolation Voltage	AC 1minute	2500	V
	Mounting screw Torque: M6		4	N.M
	Weight		300	g

Thermal Characteristics

Symbol	Parameter	Ratings	Unit
$R_{th(J-C)}$ (Diode)	Thermal Resistance, Junction to case for Diode	0.075	$^\circ\text{C/W}$

**Electrical Characteristics of Diode** @ $T_C=25\text{ }^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_F	Diode Forward Voltage	$I_F=400\text{A}$	-	1.3	1.6	V
		$I_F=400\text{A}, T_J=150^{\circ}\text{C}$	-	1.5	-	V
I_R	Reverse Current	$V_R=1200\text{V}$			200	μA
		$V_R=1200\text{V}, T_J=150^{\circ}\text{C}$			1000	μA
Q_C	Total Capacitive Charge	$V_R=800\text{V}, I_F=400\text{A}, di/dt=200\text{A}/\mu\text{s}$		1344		nC
C	Total Capacitance	$V_R=800\text{V}, f=1\text{MHz}$		1540		pF

Typical Performance Characteristics

Fig. 1. Forward Characteristics

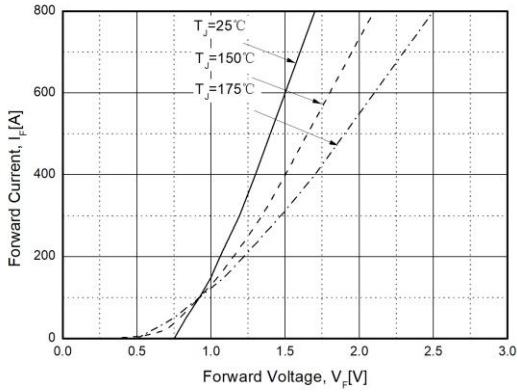


Fig. 2. Rate Current vs. T_C

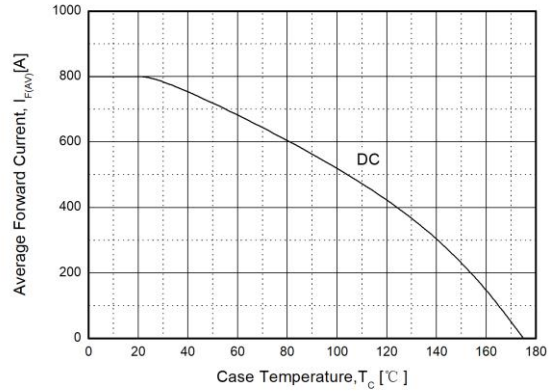


Fig. 3. Power Dissipation vs. T_C

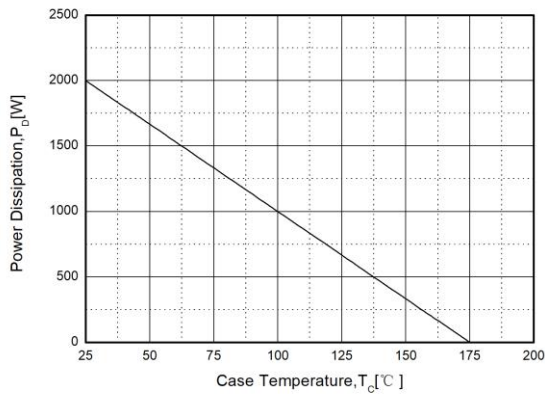


Fig. 4. Transient Thermal Impedance

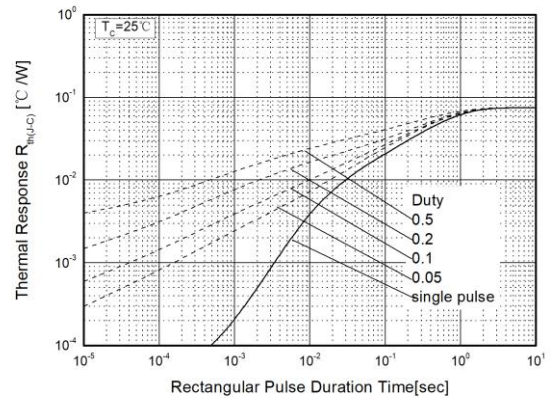


Fig. 5. Total Capacitance vs. Reverse Voltage

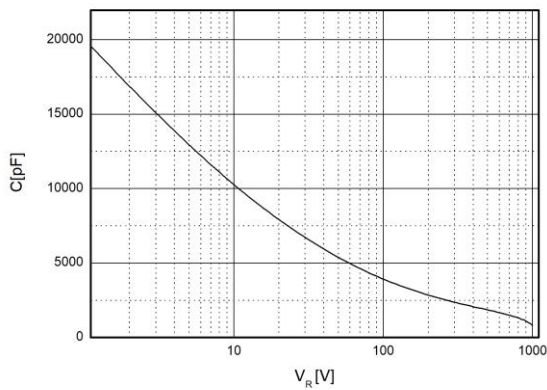
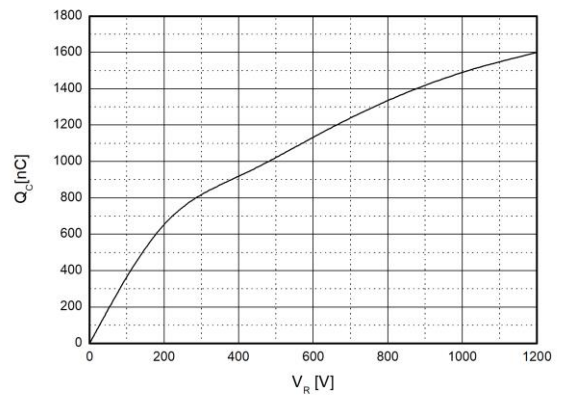
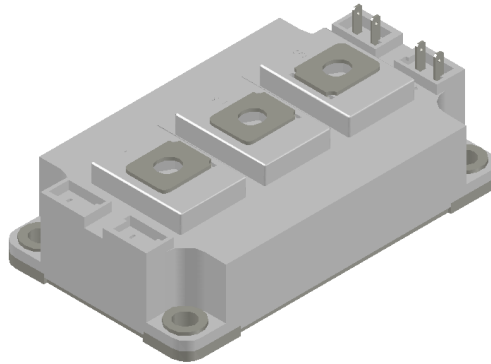


Fig. 6. Total Capacitive Charge vs. Reverse Voltage

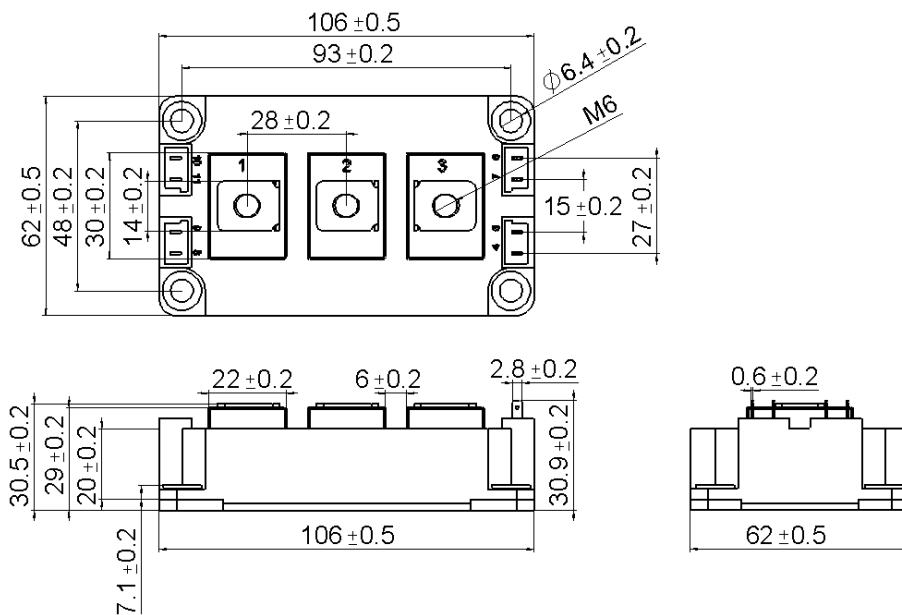


Package Dimensions

7SM-3



(Dimensions in Millimeters)



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