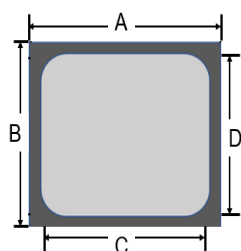




SPD100C120KM4 1200V 100A SiC Schottky Diode

DESCRIPTION: SM provides leading edge technology for the SiC Schottky barrier diodes with the advanced thin-wafer technology. The new family of 1200V products showing improved efficiency over all load conditions, attributed to its lower figure of merit ($Q_c \times V_f$).

DIE INFORMATION



FEATURES

- 1200V Schottky Barrier Diode
- Zero Reverse Recovery/Zero Forward Recovery
- 100% UIS screened
- Temperature Independent Switching Behavior

TYPICAL APPLICATIONS

- Switch mode power supply
- Power factor correction
- Solar inverter
- Uninterruptible power supply

MAJOR RATINGS AND CHARACTERISTICS

Symbol	Parameter	Value	Unit	Test Conditions
V_{RRM}	Repetitive Peak Reverse Voltage	1200	V	
V_R	DC Peak Blocking Voltage	1200	V	
I_F	Continuous Forward Current	100	A	$T_C=150^{\circ}\text{C}$
I_{FRM}	Repetitive Peak Forward Surge Current	200	A	$T_C=25^{\circ}\text{C}$, $t_p = 10$ ms, Half Sine Wave
I_{FSM}	Non-Repetitive Peak Forward Surge Current	400*	A	$T_C=25^{\circ}\text{C}$, $t_p = 10$ ms, Half Sine Wave
$\int i^2 dt$	i^2t value	800	A^2s	$T_C=25^{\circ}\text{C}$, $t_p=10$ ms, Half Sine Wave
T_j, T_{stg}	Operating Junction and Storage Temperature	-40 ~ +175	$^{\circ}\text{C}$	

**ELECTRICAL CHARACTERISTICS (25 °C unless otherwise noted)**

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
V _{DC}	DC blocking voltage	1200			V	I _R = 250μA, T _J = 25 °C
V _F	Forward Voltage		1.50 2.25	1.75	V	I _F = 100A, T _J = 25 °C I _F = 100A, T _J = 175 °C
I _R	Reverse Current		40 200	600	μA	V _R = 1200V, T _J = 25 °C V _R = 1200V, T _J = 175 °C
Q _C	Total Capacitive Charge		373		nC	V _R = 800V
C	Total Capacitance		6.473 0.348 0.250		nF	V _R = 0V, T _J = 25 °C, f = 1 MHz V _R = 400V, T _J = 25 °C, f = 1 MHz V _R = 800V, T _J = 25 °C, f = 1 MHz
E _C	Capacitance Stored Energy		80		μJ	V _R = 800V

MECHANICAL PARAMETERS

PARAMETERS	TYP	UNIT
Die Size	5.53×5.53	mm
Anode Pad Opening	5.13×5.14	mm
Thickness	100 ± 20	μm
Wafer Size	150	mm
Anode Metalization Al	4	um
Cathode Metalization	Ti/Ni/Ag	/
Frontside Passivation	Polyimide	/