ASC100N1200MB

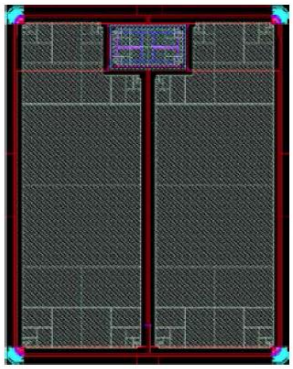
1200V N-Channel MOSFET

Description

Silicon Carbide (SiC) MOSFET use a completely new technology that provide superior switching performance and higher reliability compared to Silicon. In addition, the low ON resistance and compact chip size ensure low capacitance and gate charge. Consequently, system benefits include highest efficiency, faster operating frequency, increased power density, reduced EMI, and reduced system size.

Features

- High Speed Switching with Low Capacitances
- High Blocking Voltage with Low RDS(on)
- Easy to parallel and simple to drive
- ROHS Compliant, Halogen free



Application

- EV motor drive
- High Voltage DC/DC Converters
- Switch Mode Power Supplies
- Solar inverters
- EV charging

Absolute Maximum Ratings(Tc=25℃)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	1200	V
I_D	Drain Current(continuous)at Tc=25℃	115	A
I_D	Drain Current(continuous)at Tc=100℃	85	A
I_{DM}	Drain Current (pulsed)	250	A
V_{GS}	Gate-Source Voltage	-10/+22	V
P_D	Power Dissipation T_C = 25°C	550	W
T_J, Tstg	Junction and Storage Temperature Range	-55 to +175	℃

Electrical Characteristics(T_J = 25℃ unless otherwise specified)

Typical Performance-Static

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
BV_{DS}	Drain-source Breakdown Voltage	I_D=250uA,V_{GS}=0V	1200			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} =1200V, V_{GS} =0V, T_J=25°C			100	uA
I_{GSS}	Gate-body Leakage Current	V_{DS} =0V ; V_{GS} =-10 to 20V			250	nA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}= V_{GS}, I_D=22mA	2	3	4	V
V_{GSon}	Recommended turn-on Voltage	Static		20		V
V_{GSoff}	Recommended turn-off Voltage			-5		V
$R_{DS(on)}$	Static Drain-source On Resistance	V_{GS}=20V, I_D=50A		16	22	mΩ
		V_{GS}=20V, I_D=50A T_J=175℃		25.2		mΩ

Mechanical Parameters

Parameter	Typical Value	Unit
Die Dimensions(L×W) without scribe line	5.000×6.308	mm
Gate Pad Dimensions(L×W)	1.18×0.6	mm
Source Pad Metal Dimensions (LxW) Each	2.038×5.690×2	mm
Scribe Line	80	um
Die Thickness	175±20	um
Top Side Source metallization (Al)	4	um
Top Side Gate metallization (Al)	4	um
Bottom Drain metallization (Ti/Ni/Ag)	0.2/0.3/2	um

Chip Dimensions