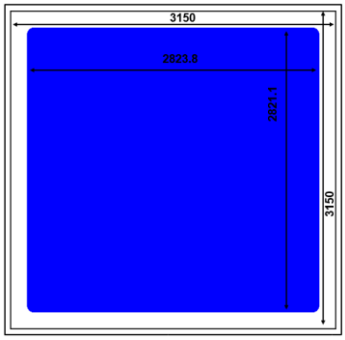
i. Physical Characteristics

Wafer Name	MS650N1100PAG
Chip size w/i scribe line	3.23mm x 3.23mm
Anode pad size	2.8238mm x 2.8211mm
Wafer Diameter	6inch SiC
Gross Die	1472pcs
Basic Package	TO-247
Source Wire Bonding	Al 20mil x 2



ii. Mechanical Data

Nominal Back Metal Composition, Thickness:	Ti-Ni-Ag (1kA°-5kA°-10kA°)
Nominal Front Metal Composition, Thickness:	AlCu(4μm)
Wafer Thickness:	150μm
Scribe line width:	80μm
Passivation:	SiN 3kA°+ Polyimide 9μm

iii. Maximum Ratings (T_J=25℃ unless otherwise noted)

Symbol	Parameter		Value	Units
V_{RRM}	Repetitive Peak Reverse Voltage		650	V
V_{RSM}	Surge Peak Reverse Voltage		650	V
V_{DC}	DC Blocking Voltage		650	V
I_F	Continuous Forward Current	Tc=154℃	50	A
I_{FSM}	Non-repetitive Forward Surge Current	t_p=10ms,Half Sine Pulse	400	A
I_{FRM}	Repetitive Peak Forward Surge Current	t_p=10ms,Half Sine Pulse	350	A

iv. Electrical Characteristics (T_J=25°C unless otherwise noted)

Symbol	Description	Min	Typ	Max	Test Conditions
Static Characteristics					
V_{RRM}	Reverse Breakdown Voltage	650V			I_R = 250μA
V_F	Forward Voltage		0.97V	1.16V	I_F = 5A, T_J = 25 °C
			1.15V	1.38V	I_F = 25 A, T_J = 25 °C
			1.37V	1.65V	I_F = 50 A, T_J = 25 °C
I_R	Reverse Leakage Current		0.7μA	10μA	V_R=650V, T_J=25°C

Handling

• Product must be handled only at ESD safe workstations. Standard ESD precautions and safe work environments are as defined in MIL-HDBK-263.
• Product must be handled only in a class 10,000 or better-designated clean room environment.

Wafer/Die storage

• Proper storage conditions are necessary to prevent product contamination and/or degradation after shipment.
• 8-inch wafers that are not sawn can be stored for up to 12 months when in the original sealed packaging at room temperature (45% +/- 15% RH controlled environment).
• 12-inch wafers that are not sawn and pasted with UV film can be stored for up to 3 months when in the original sealed packaging at room temperature (45% +/- 15% RH controlled environment).
• Un-sawn wafers that have been opened can be stored when returned to their containers and placed in a Nitrogen purged cabinet, at room temperature (45% +/- 15% RH controlled environment).
• Note: To reduce the risk of contamination or degradation, it is recommended that product not being used in the assembly process must be returned to their original containers and resealed with a vacuum seal process.
• Sawn wafers on a film frame are intended for immediate use and have a limited shelf life.

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• Any information within this document that you feel is wrong, unclear or missing at all? Your feedback will help us to continuously improve the quality of this document.

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