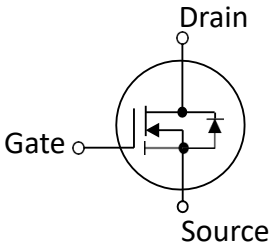
100V N-Channel MOSFET

- Advanced Split Gate Device Design and Processes
- High Reliability Capability
- Sampled CP Probing and Inking

SYMBOL



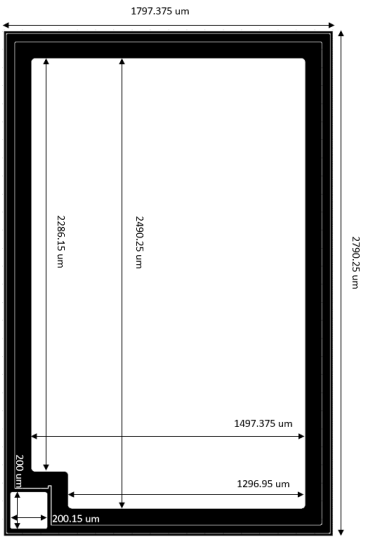
Electrical Characteristics in C/P Test (T_J at 25 ℃)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Condition
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	100	—	—	V	V_{GS} =0V, I_D =250μA
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	7.5	9	mΩ	V_{GS} =10V, I_D =5A(1)
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	11	13.5	mΩ	V_{GS} =4.5V, I_D =5A(1)
$V_{GS\ (th)}$	Gate Threshold Voltage	1.6	—	2.6	V	V_{DS} =V_{GS}, I_D =250μA
I_{DSS}	Drain-to-Source Leakage Current	—	—	1	μA	V_{DS} =100V, V_{GS} =0V
I_{GSS}	Gate-to-Source Leakage Current	-100	—	100	nA	V_{DS} =0V, V_{GS} =±20V
T_J, T_{STG}	Operating and Storage Temperature	-55℃ to 150℃ Max.				

Mechanical Data

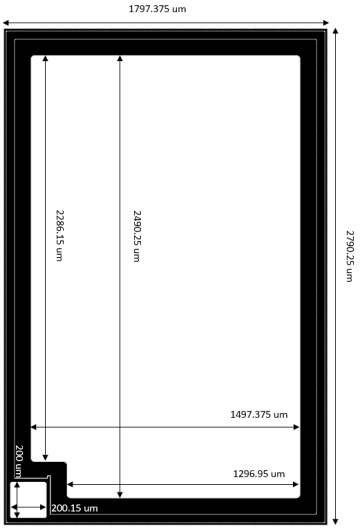
Chip Size(2)	2790 μm X 1797 μm
Gate Pad Size	200 μm X 200 μm
Source Pad Size	2490 μm X 1497 μm
Scribe Line Width	60 μm
Wafer Thickness	150 μm
Wafer Diameter	200 mm
Gross Die	5395 EA
Source Metallization	Al-Cu (4μm typical)
Drain Metallization	Ti-Ni-Ag
Passivation	SiN
Recommended Storage Environment	Store in original container, in dry nitrogen, 6 months at ambient temperature of 23°C ± 3°C

Die Drawing



(1) Pulse Width tp = < 1 mS, Duty Cycle < 2%.

(2) Chip size not include scribe line.

Specific Assembly Information Bill of Material (BOM)		Die Drawing
Package Type	DFN 5 x 6	
Die Attach Method	Soft solder	
Soft Solder Composition	Pb,Sn,Ag	
Gate Wire Bonding	Cu, 2 mil x1	
Source Wire Bonding	Al Ribbon 60 x 4mil	
Molding Compound Manufacturer	G700HF	
Solder Plating Composition	Pure Tin	

Position			Bonding Diagram Top View
	X (um)	Y (um)	
ZERO	0	0	
TOP	2790.25	1797.375	
S1	2640.25	1647.375	
S2	150	150	
S3	2436.15	350.425	
G1	2752.15	234.425	
G2	2552.15	34.275	

Electrical Characteristics in F/P Test (T_J at 25 ℃)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Condition
I_{DSS}	Drain-to-Source Leakage Current	—	—	1	μA	V_{DS} =100V, V_{GS} =0V
I_{GSSF}	Gate-to-Source Leakage Current	—	—	100	nA	V_{DS} =0V, V_{GS} =+20V
I_{GSSR}	Gate-to-Source Leakage Current	-100	—	—	nA	V_{DS} =0V, V_{GS} =-20V
BV_{DSS}	Drain-Source Breakdown Voltage	100	—	—	V	V_{GS} =0V, I_D =250μA
BV_{DSS}	Drain-Source Breakdown Voltage	100	—	—	V	V_{GS} =0V, I_D =1mA
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	—	9.5	mΩ	V_{GS} =10V, I_D =20A
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	—	14	mΩ	V_{GS} =4.5V, I_D =20A
$V_{GS\ (th)}$	Gate Threshold Voltage	1.6	—	2.6	V	V_{DS} =V_{GS}, I_D =250μA
V_{SD}	Drain-Source Diode Forward Voltage	—	—	1.2	V	V_{GS} = 0V, I_{SD} = 10A
EAS test	IAS				A	VDD=50V,Vgs=10V, RG=25ohm,L=0.1mH
T_J, T_{STG}	Operating and Storage Temperature	-55℃ to 150℃ Max.				

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