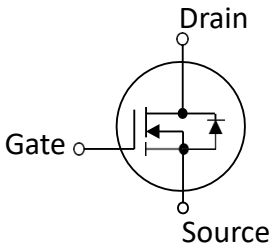
30V N-Channel MOSFET

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

SYMBOL



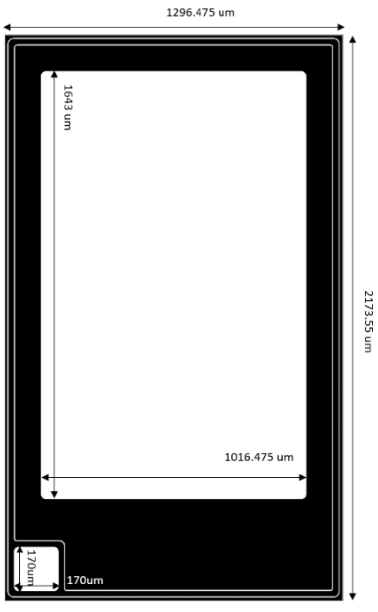
Electrical Characteristics in C/P Test (T_J at 25 ℃)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Condition
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	30	—	—	V	V_{GS} =0V, I_D =250μA
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	1.6	2	mΩ	V_{GS} =10V, I_D =1A(1)
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	1.8	2.2	mΩ	V_{GS} =4.5V, I_D =1A(1)
$V_{GS\ (th)}$	Gate Threshold Voltage	1	—	2.5	V	V_{DS} =V_{GS}, I_D =250μA
I_{DSS}	Drain-to-Source Leakage Current	—	—	1	μA	V_{DS} =30V, 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)	2174 μm X 1296 μm
Gate Pad Size	170 μm X 170 μm
Source Pad Size(1)	1643μm X 1016μm
Scribe Line Width	60 μm
Wafer Thickness	100 μm
Wafer Diameter	200 mm
Gross Die	9488 EA
Source Metallization	Ti-NiV-Ag / 1-3-1.5kA
Drain Metallization	Ti-Ni-Ag
Passivation	Polyimide
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	DFN5*6	
Die Attach Method	Soft solder	
Soft Solder Composition	Pb,Sn,Ag	
Gate Wire Bonding	Cu, 2 mil x1	
Source Wire Bonding	Cu, clip	
Molding Compound Manufacturer	G700HF	
Solder Plating Composition	Pure Tin	

Position			Bonding Diagram Top View
	X (μm)	Y (μm)	
ZERO	0	0	
TOP	2173.55	1296.475	
S1	140	140	
S2	1783	1156.475	
G1	1967	36.7	
G2	2137	206.7	

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

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Condition
I_{DSS}	Drain-to-Source Leakage Current	—	—	1	μA	V_{DS} =30V, 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	30	—	—	V	V_{GS} =0V, I_D =250μA
BV_{DSS}	Drain-Source Breakdown Voltage	30	—	—	V	V_{GS} =0V, I_D =1mA
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	—	2.4	mΩ	V_{GS} =10V, I_D =30A
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	—	2.7	mΩ	V_{GS} =4.5V, I_D =20A
$V_{GS\ (th)}$	Gate Threshold Voltage	1	—	2.5	V	V_{DS} =V_{GS}, I_D =250μA
V_{SD}	Body Diode Forward Voltage	—	—	1.1	V	V_{GS} =0V, I_{SD} =10A
I_{AS}	Avalanche Current				A	V_{DD}=30V, V_{GS}=10V, R_G=25Ω, L=0.5mH
T_J, T_{STG}	Operating and Storage Temperature	-55	—	150	℃	

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