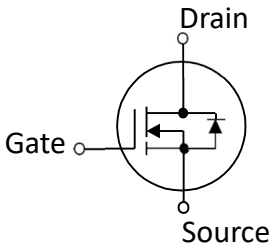
JUNSHINE

SPQ1RN30WPI2

30V N-Channel MOSFET

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

SYMBOL



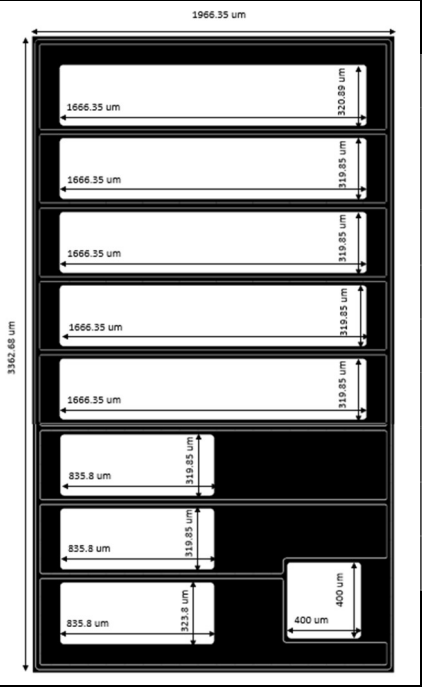
Electrical Characteristics in C/P Test (T_J at 25 ℃)

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	—	0.8	1.0	mΩ	V_{GS} =5V, I_D =1A(1)
$V_{GS\ (th)}$	Gate Threshold Voltage	1	—	2.3	V	V_{DS} =V_{GS}, I_D =250μA
I_{DSS}	Drain-to-Source Leakage Current	—	—	1	μA	V_{DS} =25V, V_{GS} =0V
I_{GSS}	Gate-to-Source Leakage Current	-100	—	100	nA	V_{DS} =0V, V_{GS} =±16V
T_J, T_{STG}	Operating and Storage Temperature	-55℃ to 150℃ Max.				

Mechanical Data

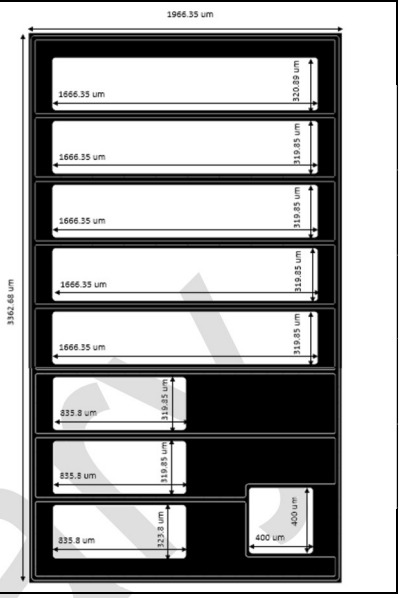
Chip Size(2)	1966 μm X 3363 μm
Gate Pad Size	400 μm X 400 μm
Source Pad Size	1666 μm X 320 μm x 5 836 μm X 320 μm 836 μm X 324 μm
Scribe Line Width	60 μm
Wafer Thickness	50 μm
Wafer Diameter	200 mm
Gross Die	3986 EA
Source Metallization	Ti-NiV-Ag / 1-3-1.5kA
Drain Metallization	Ti-Ni-Ag
Passivation	Polyimide
Recommended Storage Environment	Store in original container, in dry nitrogen, 6 months at ambient temperature of 23°C ± 3°C

Die Drawing

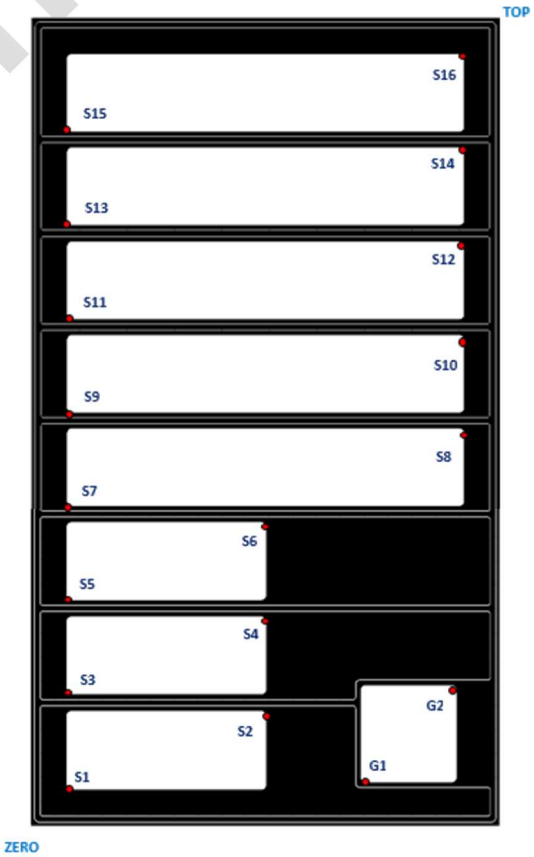


(1) Pulse Width tp = < 1 mS, Duty Cycle < 2%.

(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 x 1	
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	1966.35	3362.68	
S1	150	150	
S2	985.8	473.8	
S3	150	545.07	
S4	985.8	864.92	
S5	150	936.19	
S6	985.8	1256.04	
S7	150	1327.31	
S8	1816.35	1647.16	
S9	150	1718.43	
S10	1816.35	2038.28	
S11	150	2109.55	
S12	1816.35	2429.4	
S13	150	2500.67	
S14	1816.35	2820.52	
S15	150	2891.79	
S16	1816.35	3212.68	
G1	1385.8	180.775	
G2	1785.8	580.775	



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} =+16V
I_{GSSR}	Gate-to-Source Leakage Current	-100	—	—	nA	V_{DS} =0V, V_{GS} =-16V
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	—	—	1.4	mΩ	V_{GS} =5V, I_D =20A
$V_{GS\ (th)}$	Gate Threshold Voltage	1	—	2.3	V	V_{DS} =V_{GS}, I_D =250μA
V_{SD}	Body Diode Forward Voltage	—	—	1.2	V	V_{GS} =0V, I_{SD} =20A
I_{AS}	Avalanche Current				A	V_{DD}=30V, V_{GS}=10V, R_G=25Ω, L=0.1mH
T_J, T_{STG}	Operating and Storage Temperature	-55	—	150	℃	

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