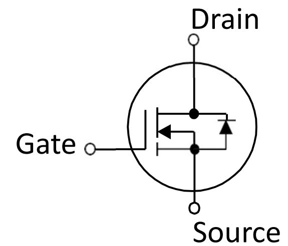
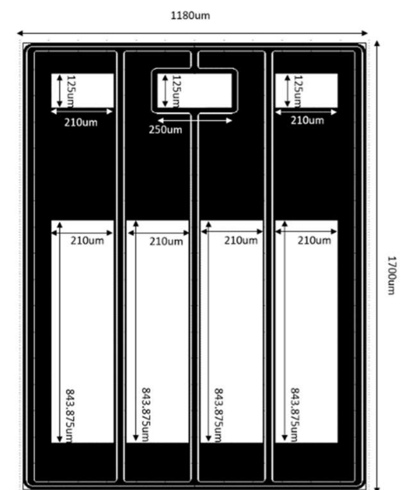
30V, 30A (1) N-Channel MOSFET

- 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	—	3.1	4	mΩ	V_{GS} =5V, I_D =1A(2)
$V_{GS\ (th)}$	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} =25V, V_{GS} =0V
I_{GSS}	Gate-to-Source Leakage Current	-100	—	100	nA	V_{DS} =0V, V_{GS} =±12V
T_J, T_{STG}	Operating and Storage Temperature	-55℃ to 150℃ Max.				

Mechanical Data		Die Drawing
Chip Size	1700 μm X 1180 μm	
Gate Pad Size	125 μm X 250 μm	
Source Pad Size(1)	844μm X 210 μm	
Source Pad Size(2)	125μm X 210 μm	
Scribe Line Width	60 μm	
Wafer Thickness	100 μm	
Wafer Diameter	200 mm	
Gross Die	13225 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	

(1) This characteristic assumes the die is assembled in DFN5*6 package. Actual performance may degrade when assembled.

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

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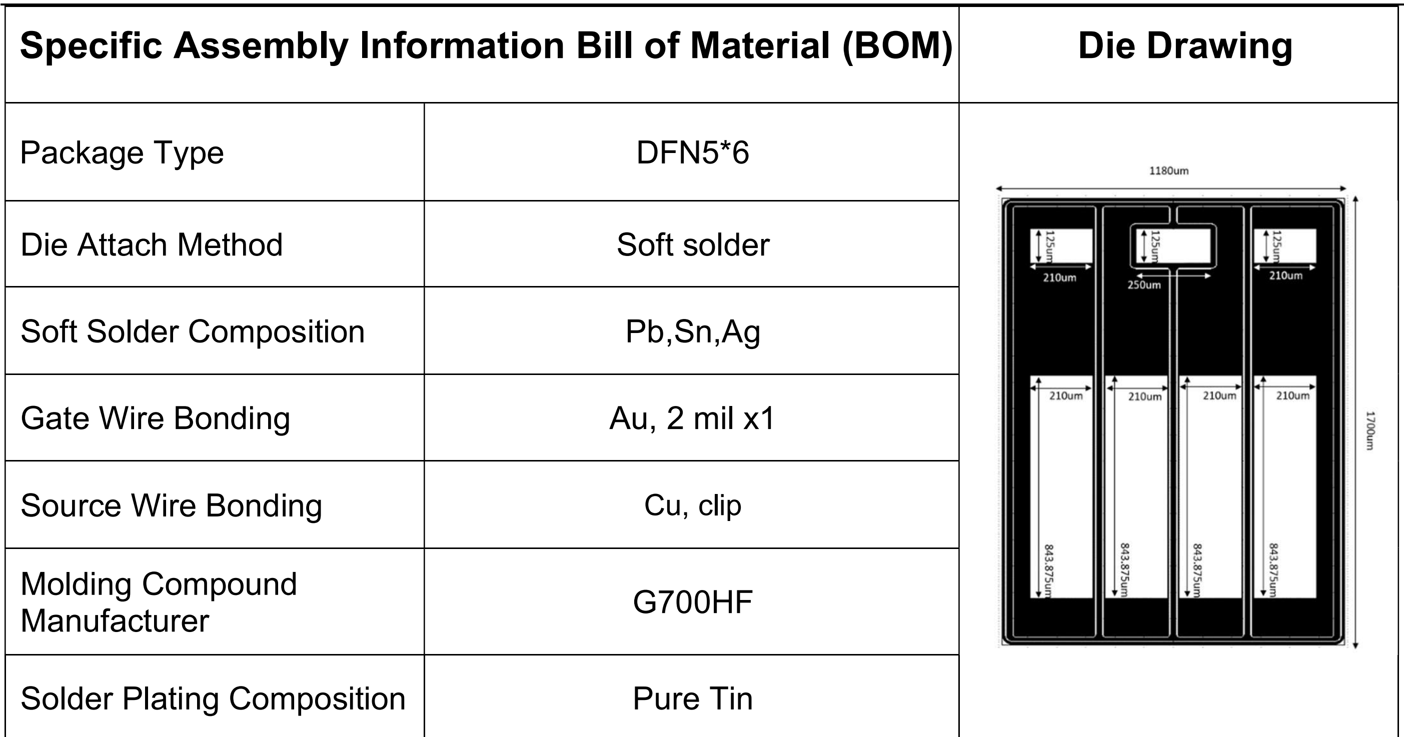
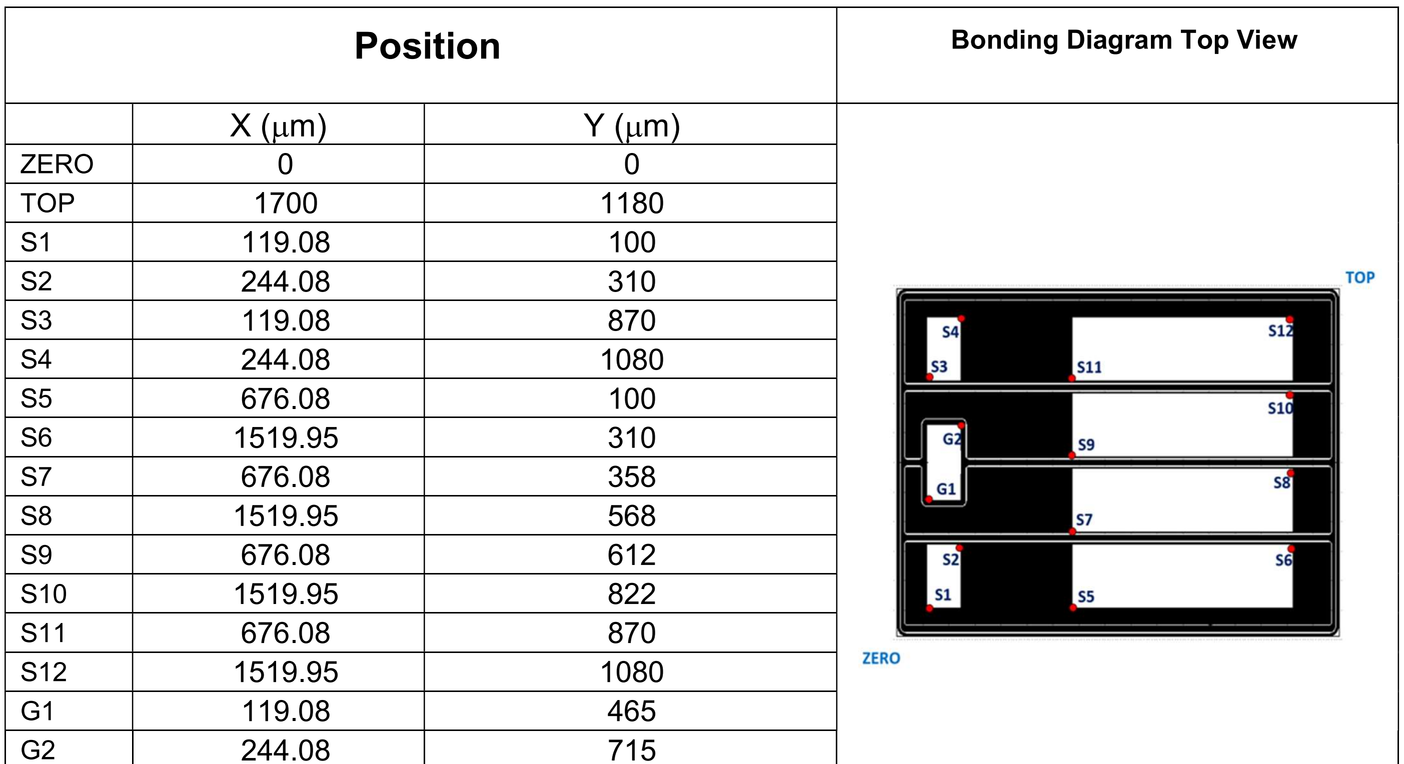


Specific Assembly Information Bill of Material (BOM)		Die Drawing
Package Type	DFN5*6	
Die Attach Method	Soft solder	
Soft Solder Composition	Pb,Sn,Ag	
Gate Wire Bonding	Au, 2 mil x1	
Source Wire Bonding	Cu, clip	
Molding Compound Manufacturer	G700HF	
Solder Plating Composition	Pure Tin	



Position			Bonding Diagram Top View
	X (µm)	Y (µm)	
ZERO	0	0	
TOP	1700	1180	
S1	119.08	100	
S2	244.08	310	
S3	119.08	870	
S4	244.08	1080	
S5	676.08	100	
S6	1519.95	310	
S7	676.08	358	
S8	1519.95	568	
S9	676.08	612	
S10	1519.95	822	
S11	676.08	870	
S12	1519.95	1080	
G1	119.08	465	
G2	244.08	715	

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} =25V, V_{GS} =0V
I_{GSSF}	Gate-to-Source Leakage Current	—	—	100	nA	V_{DS} =0V, V_{GS} =+12V
I_{GSSR}	Gate-to-Source Leakage Current	-100	—	—	nA	V_{DS} =0V, V_{GS} =-12V
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	—	—	4.3	mΩ	V_{GS} =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}=25V, V_{GS}=10V, R_G=25Ω, L=0.5mH
T_J, T_{STG}	Operating and Storage Temperature	-55	—	150	℃	

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