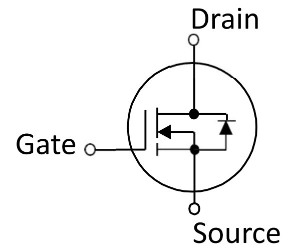
30V, 150A [1] N-Channel MOSFET

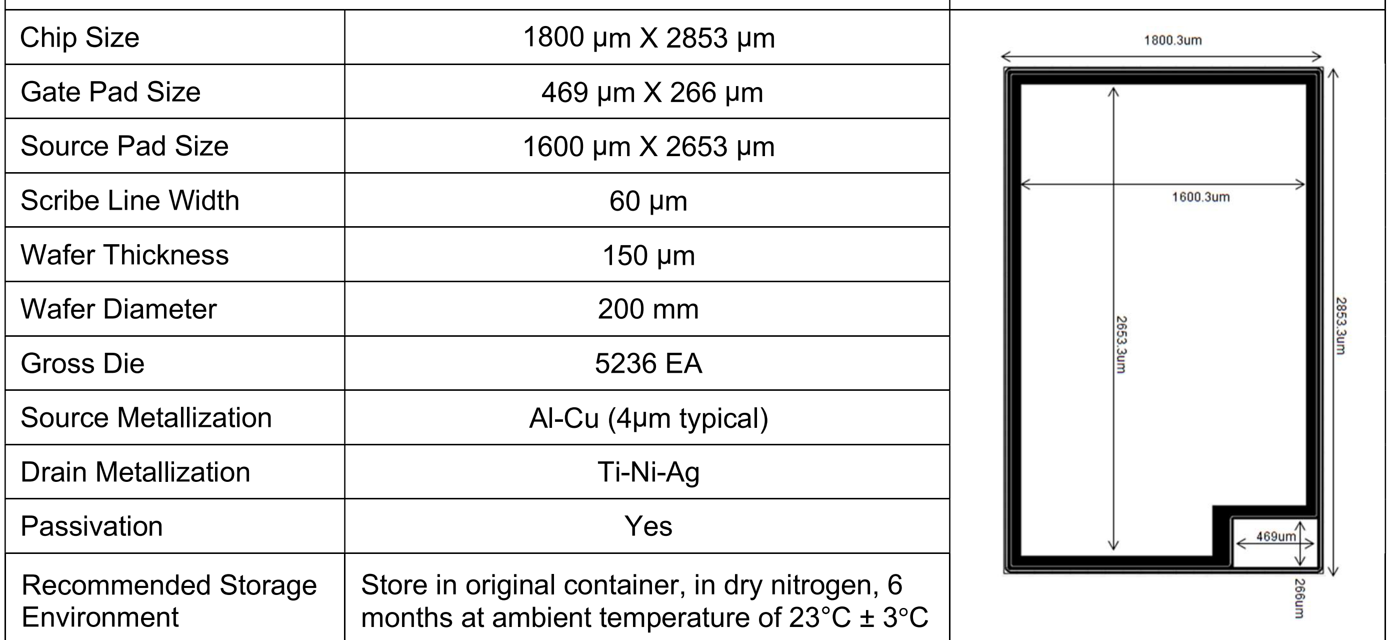
- Proprietary Trench Gate Device Design and Processes
- High Reliability Capability
- Sampled CP Probing and Inking

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	—	1.5	1.95	mΩ	V_{GS} =10V, I_D =1A(2)
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	2	2.6	mΩ	V_{GS} =4.5V, 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} =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.				



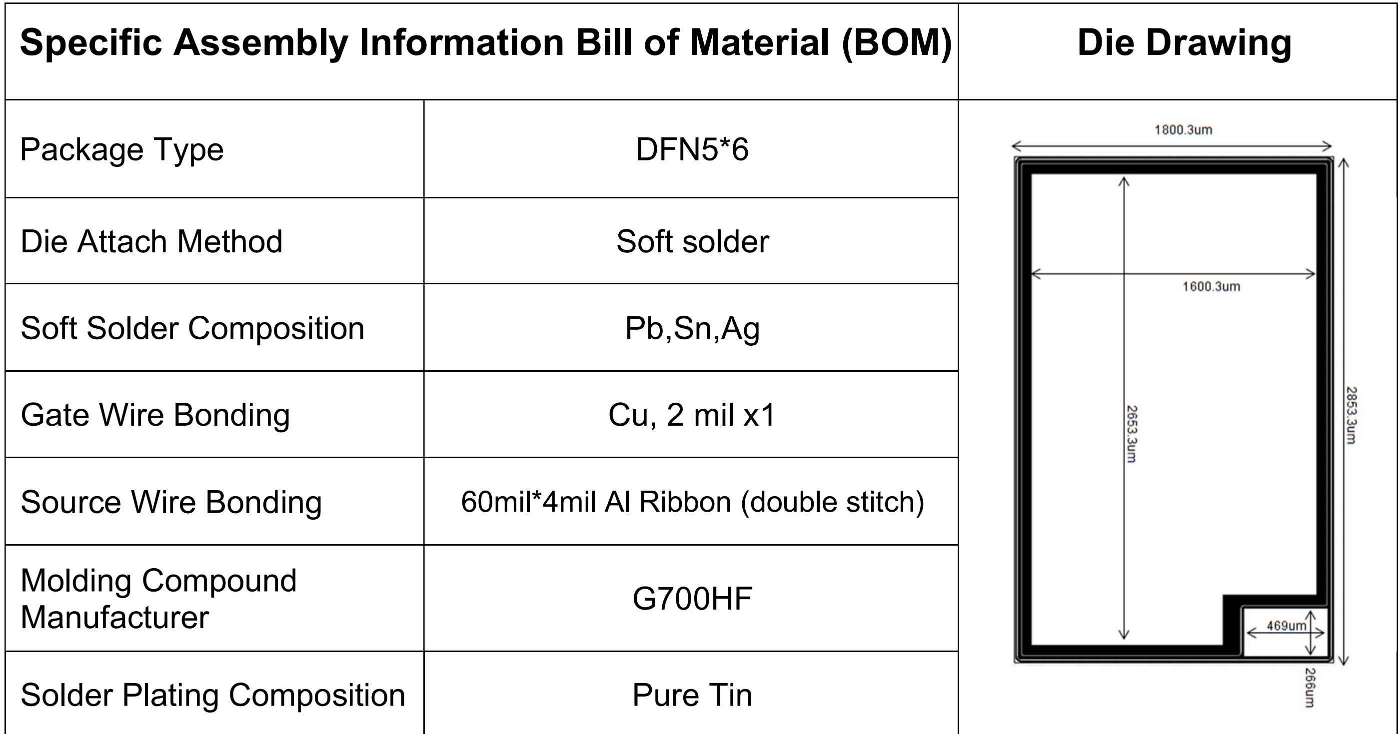
Mechanical Data

Chip Size	1800 μm X 2853 μm
Gate Pad Size	469 μm X 266 μm
Source Pad Size	1600 μm X 2653 μm
Scribe Line Width	60 μm
Wafer Thickness	150 μm
Wafer Diameter	200 mm
Gross Die	5236 EA
Source Metallization	Al-Cu (4μm typical)
Drain Metallization	Ti-Ni-Ag
Passivation	Yes
Recommended Storage Environment	Store in original container, in dry nitrogen, 6 months at ambient temperature of 23°C ± 3°C

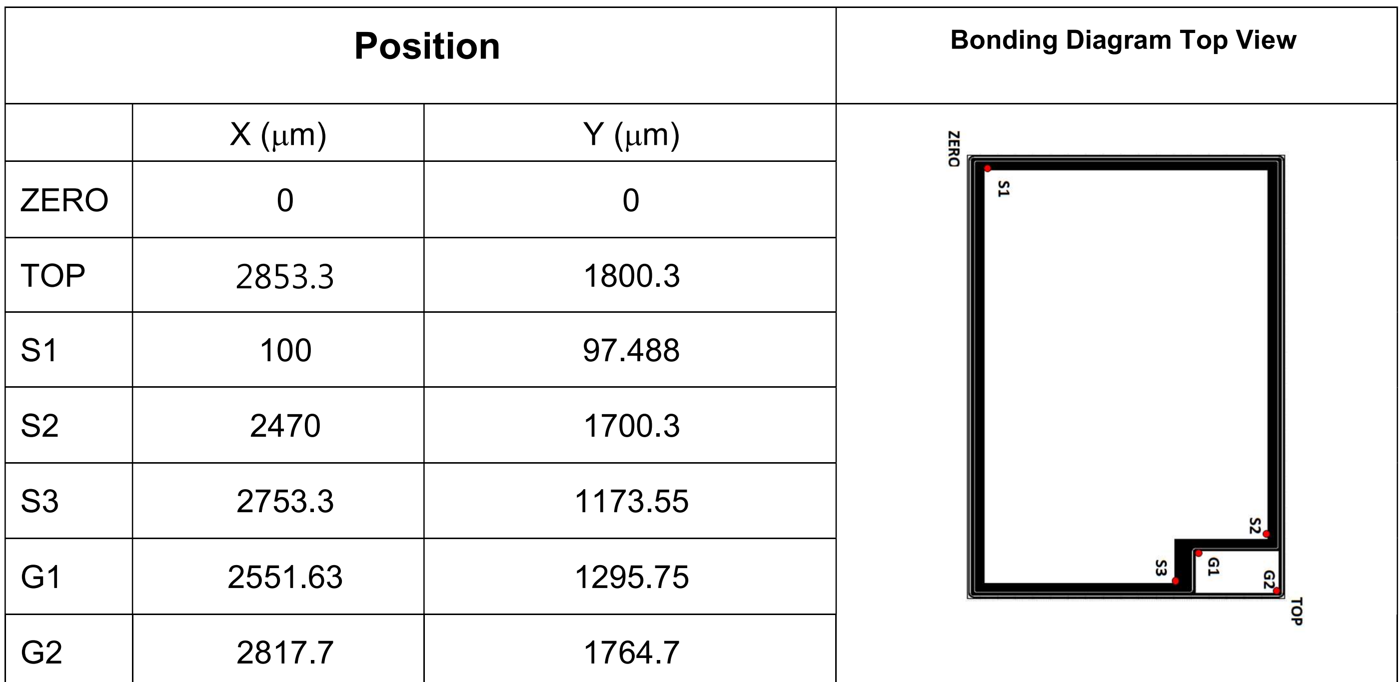
Die Drawing

(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%.



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	60mil*4mil Al Ribbon (double stitch)	
Molding Compound Manufacturer	G700HF	
Solder Plating Composition	Pure Tin	



Position			Bonding Diagram Top View
	X (μm)	Y (μm)	
ZERO	0	0	
TOP	2853.3	1800.3	
S1	100	97.488	
S2	2470	1700.3	
S3	2753.3	1173.55	
G1	2551.63	1295.75	
G2	2817.7	1764.7	

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	—	—	3	mΩ	V_{GS} =10V, I_D =10A
$V_{GS\ (th)}$	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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