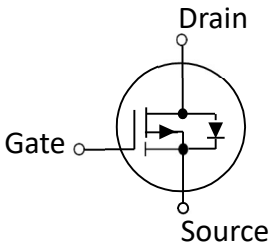
30V P-Channel MOSFET

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

SYMBOL



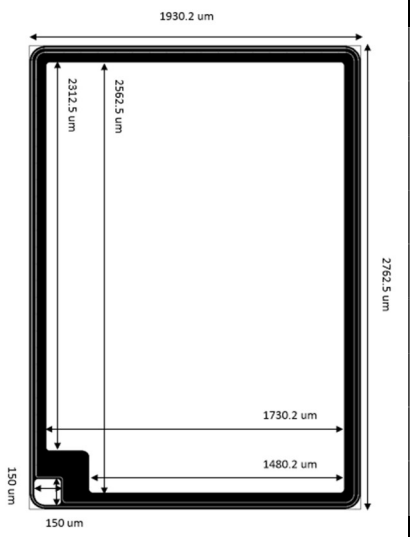
Electrical Characteristics in C/P Test (T_J at 25 ℃)

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	—	3.8	4.7	mΩ	V_{GS} =10V, I_D =-1A(2)
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	6	7.5	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

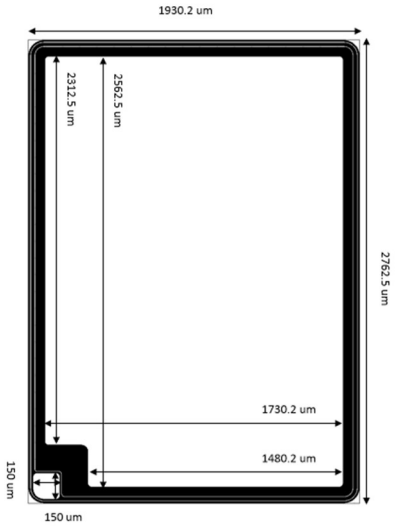
Chip Size	1930 μm X 2763 μm
Gate Pad Size	150 μm X 150 μm
Source Pad Size	1730 μm X 2563 μm
Scribe Line Width	60 μm
Wafer Thickness	150 μm
Wafer Diameter	200 mm
Gross Die	5081 EA
Source Metallization	Al-Cu (4μm typical)
Drain Metallization	Ti-Ni-Ag
Passivation	SiN
Recommended Storage Environment	Store in original container, in dry nitrogen, 6 months at ambient temperature of 23°C ± 3°C

Die Drawing

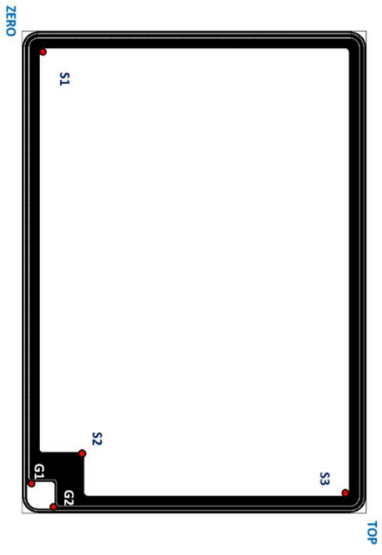


(1) This characteristic assumes the die is assembled in SOP-8 package. Actual performance may degrade when assembled.

(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	Cu, 2 mil x8	
Molding Compound Manufacturer	G700HF	
Solder Plating Composition	Pure Tin	

Position			Bonding Diagram Top View
	X (um)	Y (um)	
ZERO	0	0	
TOP	2762.5	1930.2	
S1	100	100	
S2	2412.5	350	
S3	2662.5	1830.2	
G1	2584.65	31.15	
G2	2734.65	181.15	



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	—	—	6.5	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	—	—	-1.2	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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