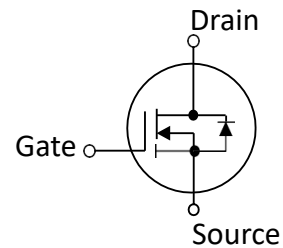


100V N-Channel MOSFET

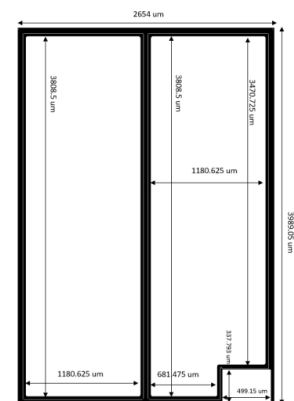
- Advanced Split Gate Device Design and Processes
- High Reliability Capability
- Sampled CP Probing and Inking

SYMBOL

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

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Condition
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	100	—	—	V	$V_{GS} = 0V, I_D = 250\mu A$
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	3.8	4.9	m Ω	$V_{GS} = 10V, I_D = 5A^{(1)}$
$V_{GS(th)}$	Gate Threshold Voltage	2	—	4	V	$V_{DS} = V_{GS}, I_D = 250\mu A$
I_{DSS}	Drain-to-Source Leakage Current	—	—	1	μA	$V_{DS} = 100V, V_{GS} = 0V$
I_{GSS}	Gate-to-Source Leakage Current	-100	—	100	nA	$V_{DS} = 0V, V_{GS} = \pm 20V$
T_J, T_{STG}	Operating and Storage Temperature	-55°C to 150°C Max.				

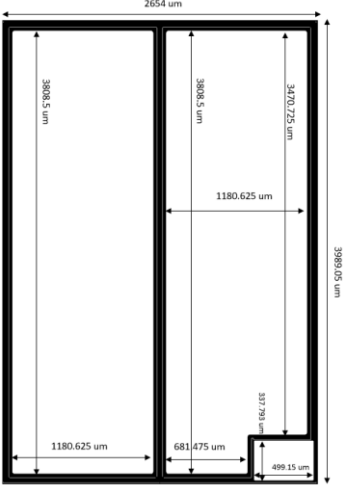
Mechanical Data

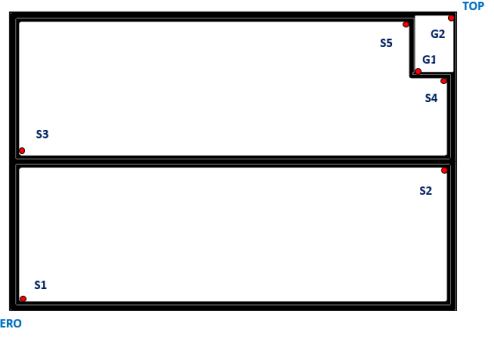
Chip Size ⁽²⁾	3989 μm X 2654 μm
Gate Pad Size	338 μm X 499 μm
Source Pad Size	3809 μm X 1181 μm
Scribe Line Width	80 μm
Wafer Thickness	150 μm
Wafer Diameter	200 mm
Gross Die	2532 EA
Source Metallization	Al-Cu (4 μm typical)
Drain Metallization	Ti-Ni-Ag
Passivation	Yes
Recommended Storage Environment	Store in original container, in dry nitrogen, 6 months at ambient temperature of 23°C \pm 3°C

Die Drawing


(1) Pulse Width $t_p = < 1$ mS, Duty Cycle $< 2\%$.

(2) Chip size not include scribe line.

Specific Assembly Information Bill of Material (BOM)		Die Drawing
Package Type	TO220	
Die Attach Method	Soft solder	
Soft Solder Composition	Pb,Sn,Ag	
Gate Wire Bonding	Al, 5 mil x1	
Source Wire Bonding	Al, 15 mil x2	
Molding Compound Manufacturer	G700HF	
Solder Plating Composition	Pure Tin	

Position			Bonding Diagram Top View
	X (um)	Y (um)	
ZERO	0	0	
TOP	3989.05	2654	
S1	90.275	90.275	
S2	3898.775	1270.9	
S3	90.275	1383.1	
S4	3898.775	2064.575	
S5	3561	2563.725	
G1	3617	2120.575	
G2	3954.793	2619.725	

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

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Condition
I_{DSS}	Drain-to-Source Leakage Current	—	—	1	μA	$V_{DS} = 100V, V_{GS} = 0V$
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	100	—	—	V	$V_{GS} = 0V, I_D = 250\mu A$
BV_{DSS}	Drain-Source Breakdown Voltage	100	—	—	V	$V_{GS} = 0V, I_D = 1mA$
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	—	5.5	m Ω	$V_{GS} = 10V, I_D = 50A$
$V_{GS(th)}$	Gate Threshold Voltage	2	—	4	V	$V_{DS} = V_{GS}, I_D = 250\mu A$
V_{SD}	Drain-Source Diode Forward Voltage			1.2	V	$V_{GS} = 0V, I_{SD} = 10A$
EAS test	IAS				A	$V_{DD} = 50V, V_{gs} = 10V, R_G = 25\Omega, L = 0.1mH$
T_J, T_{STG}	Operating and Storage Temperature	-55°C to 150°C Max.				

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