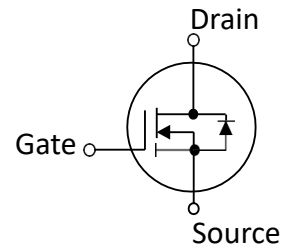


**30V N-Channel MOSFET**

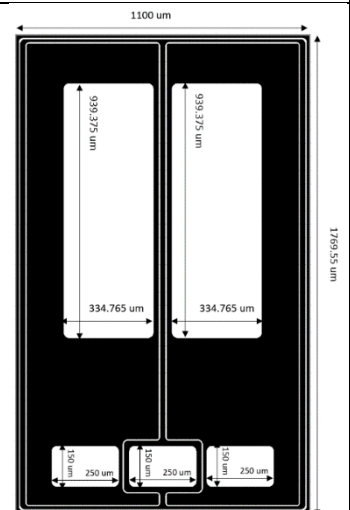
- Advanced Split Gate Device Design and Processes
- High Reliability Capability
- Sampled CP Probing and Inking

**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	30	—	—	V	$V_{GS} = 0V, I_D = 250\mu A$
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	2.6	3.2	m $\Omega$	$V_{GS} = 10V, I_D = 1A^{(1)}$
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	3.1	3.7	m $\Omega$	$V_{GS} = 4.5V, I_D = 1A^{(1)}$
$V_{GS(th)}$	Gate Threshold Voltage	1	—	2.5	V	$V_{DS} = V_{GS}, I_D = 250\mu A$
$I_{DSS}$	Drain-to-Source Leakage Current	—	—	1	$\mu A$	$V_{DS} = 30V, V_{GS} = 0V$
$I_{GSS}$	Gate-to-Source Leakage Current	-100	—	100	nA	$V_{DS} = 0V, V_{GS} = \pm 16V$
$T_J, T_{STG}$	Operating and Storage Temperature	-55°C to 150°C Max.				

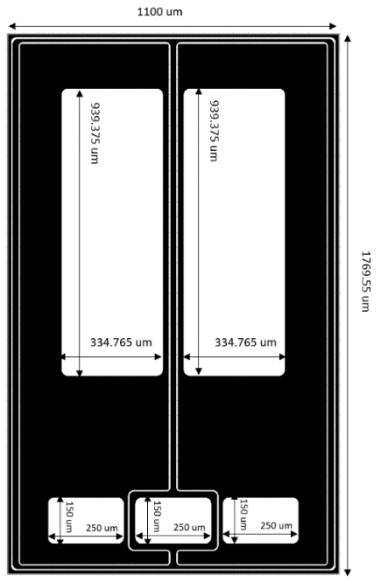
**Mechanical Data**


Chip Size <sup>(2)</sup>	1770 $\mu m$ X 1100 $\mu m$
Gate Pad Size	150 $\mu m$ X 250 $\mu m$
Source Pad Size(1)	939 $\mu m$ X 335 $\mu m$ 939 $\mu m$ X 335 $\mu m$
Source Pad Size(2)	150 $\mu m$ X 250 $\mu m$ 150 $\mu m$ X 250 $\mu m$
Scribe Line Width	60 $\mu m$
Wafer Thickness	100 $\mu m$
Wafer Diameter	200 mm
Gross Die	13620 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 $\pm$ 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	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, 2 mil x 8	
Molding Compound Manufacturer	G700HF	
Solder Plating Composition	Pure Tin	

Position			Bonding Diagram Top View
	X (μm)	Y (μm)	
ZERO	0	0	
TOP	1769.55	1100	
S1	180	180	
S2	1119.375	514.765	
S3	180	585.235	
S4	1119.375	920	
S5	1519.375	135	
S6	1669.375	385	
S7	1519.375	715	
S8	1669.375	965	
G1	1519.375	425	
G2	1669.375	675	

**Electrical Characteristics in F/P Test (T<sub>J</sub> at 25 °C)**

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Condition
I <sub>DSS</sub>	Drain-to-Source Leakage Current	—	—	1	μA	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V
I <sub>GSSF</sub>	Gate-to-Source Leakage Current	—	—	100	nA	V <sub>DS</sub> =0V, V <sub>GS</sub> =+16V
I <sub>GSSR</sub>	Gate-to-Source Leakage Current	-100	—	—	nA	V <sub>DS</sub> =0V, V <sub>GS</sub> =-16V
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	30	—	—	V	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	30	—	—	V	V <sub>GS</sub> =0V, I <sub>D</sub> =1mA
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance	—	—	5.5	mΩ	V <sub>GS</sub> =10V, I <sub>D</sub> =20A
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance	—	—	7	mΩ	V <sub>GS</sub> =4.5V, I <sub>D</sub> =20A
V <sub>GS(th)</sub>	Gate Threshold Voltage	1	—	2.5	V	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA
V <sub>SD</sub>	Body Diode Forward Voltage	—	—	1.2	V	V <sub>GS</sub> =0V, I <sub>SD</sub> =20A
I <sub>AS</sub>	Avalanche Current				A	V <sub>DD</sub> =30V, V <sub>GS</sub> =10V, R <sub>G</sub> =25Ω, L=0.1mH
T <sub>J</sub> , T <sub>STG</sub>	Operating and Storage Temperature	-55	—	150	°C	

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