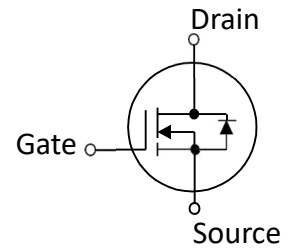
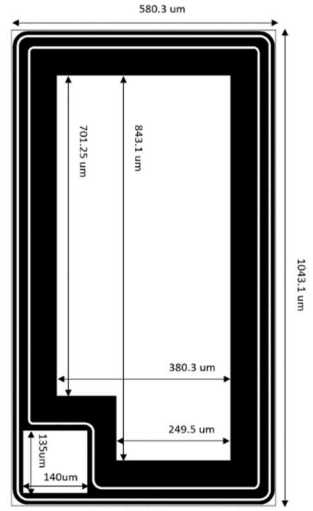


**45V N-Channel MOSFET**

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

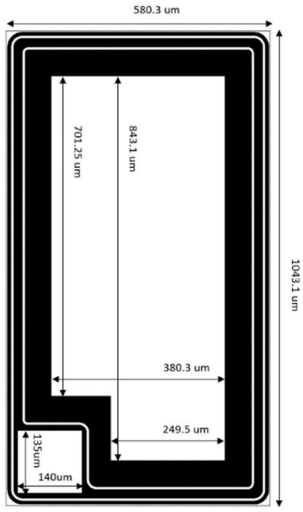
**SYMBOL**

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

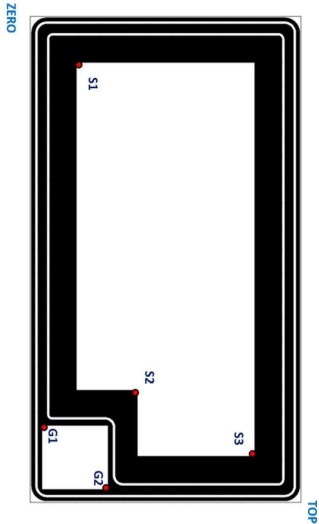
Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Condition
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	45	—	—	V	$V_{GS} = 0V, I_D = 250\mu A$
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	13.7	17.5	m $\Omega$	$V_{GS} = 10V, I_D = 1A^{(1)}$
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	22.1	28.7	m $\Omega$	$V_{GS} = 4.5V, I_D = 1A^{(1)}$
$V_{GS(th)}$	Gate Threshold Voltage	1.0	—	2.0	V	$V_{DS} = V_{GS}, I_D = 250\mu A$
$I_{DSS}$	Drain-to-Source Leakage Current	—	—	1	$\mu A$	$V_{DS} = 45V, V_{GS} = 0V$
$I_{GSS}$	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		Die Drawing
Chip Size	1043 $\mu m$ X 580 $\mu m^{(2)}$	
Gate Pad Size	140 $\mu m$ X 135 $\mu m$	
Source Pad Size	843 $\mu m$ X 380 $\mu m$	
Scribe Line Width	60 $\mu m$	
Wafer Thickness	150 $\mu m$	
Wafer Diameter	200 mm	
Gross Die	41321 EA	
Source Metallization	Al-Cu (4 $\mu m$ 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 $\pm$ 3°C	

(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 x1	
Source Wire Bonding	Cu, 2 mil x7	
Molding Compound Manufacturer	G700HF	
Solder Plating Composition	Pure Tin	

Position			Bonding Diagram Top View
	X (um)	Y (um)	
ZERO	0	0	
TOP	1043.1	580.3	
S1	100	100	
S2	801.25	230.8	
S3	943.1	480.3	
G1	879.325	25.75	
G2	1014.325	165.75	

<b>Electrical Characteristics in F/T Test (T<sub>J</sub> at 25 °C)</b>						
Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Condition
I <sub>DSS</sub>	Drain-to-Source Leakage Current	—	—	1	μA	V <sub>DS</sub> =45V, 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> =+20V
I <sub>GSSR</sub>	Gate-to-Source Leakage Current	-100	—	—	nA	V <sub>DS</sub> =0V, V <sub>GS</sub> =-20V
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	45	—	—	V	V <sub>GS</sub> =0V, I <sub>D</sub> =250μA
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	45	—	—	V	V <sub>GS</sub> =0V, I <sub>D</sub> =1mA
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance	—	—	20	mΩ	V <sub>GS</sub> =10V, I <sub>D</sub> =20A
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance	—	—	31	mΩ	V <sub>GS</sub> =4.5V, I <sub>D</sub> =15A
V <sub>GS(th)</sub>	Gate Threshold Voltage	1.0	—	2.0	V	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA
V <sub>SD</sub>	Drain-Source Diode Forward Voltage			1.1	V	V <sub>GS</sub> = 0V, I <sub>SD</sub> = 20A
EAS test	IAS				A	V <sub>DD</sub> =45V, V <sub>GS</sub> =10V, R <sub>G</sub> =25ohm, L=0.5mH
T <sub>J</sub> , T <sub>STG</sub>	Operating and Storage Temperature	-55°C to 150°C Max.				

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