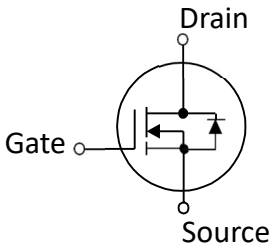
40V, 7.2A (1) N-Channel MOSFET

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

SYMBOL



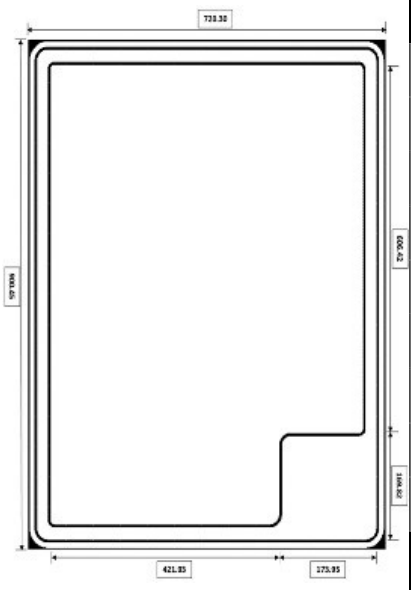
Electrical Characteristics in C/P Test (T_J at 25 ℃)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Condition
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	40	—	—	V	V_{GS} =0V, I_D =250μA
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	13	17	mΩ	V_{GS} =10V, I_D =1A(2)
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	22	31	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} =40V, 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

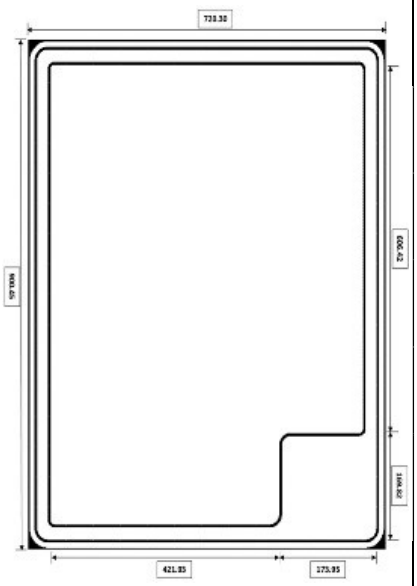
Chip Size	840 μm X 660 μm
Gate Pad Size	174 μm X 170 μm
Source Pad Size	577 μm X 757 μm
Scribe Line Width	60 μm
Wafer Thickness	150 μm
Wafer Diameter	200 mm
Gross Die	44884 EA
Source Metallization	Al-Cu (4μm typical)
Drain Metallization	Ti-Ni-Ag
Passivation	N/A
Recommended Storage Environment	Store in original container, in dry nitrogen, 6 months at ambient temperature of 23°C ± 3°C

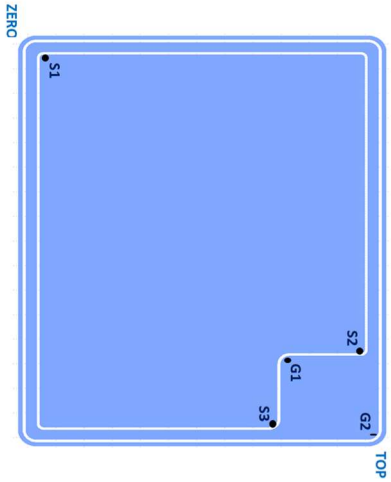
Die Drawing



(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	SOP-8	
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	840.45	660.3	
S1	41.6	41.6	
S2	648.025	618.7	
S3	798.85	463.55	
G1	654.025	469.75	
G2	823.85	640.7	

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

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Condition
I_{DSS}	Drain-to-Source Leakage Current	—	—	1	μA	V_{DS} =40V, 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	40	—	—	V	V_{GS} =0V, I_D =250μA
BV_{DSS}	Drain-Source Breakdown Voltage	40	—	—	V	V_{GS} =0V, I_D =1mA
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	—	20	mΩ	V_{GS} =10V, I_D =7A
$V_{GS\ (th)}$	Gate Threshold Voltage	1	—	2.5	V	V_{DS} =V_{GS}, I_D =250μA
V_{SD}	Drain-Source Diode Forward Voltage			1.1	V	V_{GS} = 0V, I_{SD} = 7A
EAS test	IAS				A	VDD=40V,Vgs=10V, RG=25ohm,L=0.5mH
T_J, T_{STG}	Operating and Storage Temperature	-55℃ to 150℃ Max.				

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