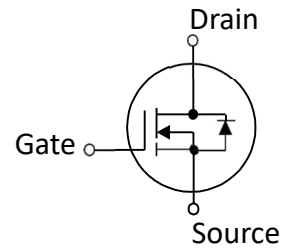


40V, 54A ⁽¹⁾ N-Channel MOSFET

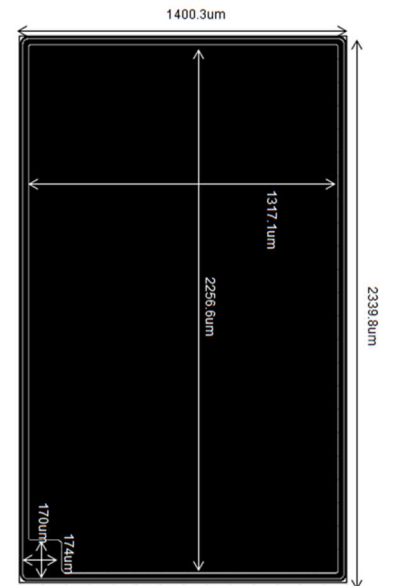
- Proprietary Trench Gate Device Design and Processes
- High Reliability Capability
- Sampled CP Probing and Inking

SYMBOL

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

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	—	2	2.7	mΩ	V _{GS} = 10V, I _D = 1A ⁽²⁾
R _{DS(ON)}	Static Drain-Source On-Resistance	—	3.3	4.8	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°C to 150°C Max.				

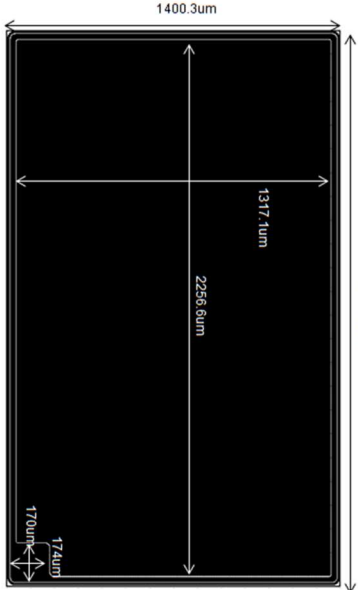
Mechanical Data
Die Drawing

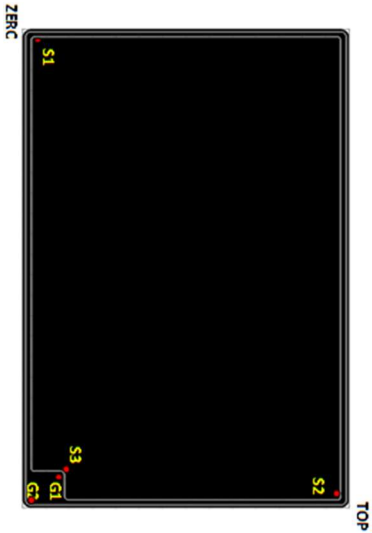
Chip Size	1400 μm X 2340 μm
Gate Pad Size	174 μm X 170 μm
Source Pad Size	1317 μm X 2257 μm
Scribe Line Width	60 μm
Wafer Thickness	150 μm
Wafer Diameter	200 mm
Gross Die	8153 EA
Source Metallization	Al-Cu (4μm typical)
Drain Metallization	Ti-Ni-Ag
Passivation	N/A
Recommended Storage Environment	Store in original container, in dry nitrogen, 6 months at ambient temperature of 23°C ± 3°C



(1) This characteristic assumes the die is assembled in DFN5*6 package. Actual performance may degrade when assembled.

(2) Pulse Width $t_p = < 1$ 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	60mil*4mil Al Ribbon (double stitch)	
Molding Compound Manufacturer	G700HF	
Solder Plating Composition	Pure Tin	

Position			Bonding Diagram Top View
	X (μm)	Y (μm)	
ZERO	0	0	
TOP	2339.9	1400.3	
S1	42.6	42.6	
S2	1348.7	2288.3	
S3	2146.9	192.8	
G1	2172.9	166.6	
G2	2313.3	26.6	

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

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Condition
I_{DSS}	Drain-to-Source Leakage Current	—	—	1	μA	$V_{DS} = 40V, V_{GS} = 0V$
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	$V_{GS} = 0V, I_D = 250\mu A$
BV_{DSS}	Drain-Source Breakdown Voltage	40	—	—	V	$V_{GS} = 0V, I_D = 1mA$
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	—	4	m Ω	$V_{GS} = 10V, I_D = 10A$
$V_{GS(th)}$	Gate Threshold Voltage	1	—	2.5	V	$V_{DS} = V_{GS}, I_D = 250\mu A$
V_{SD}	Body Diode Forward Voltage	—	—	1.1	V	$V_{GS} = 0V, I_{SD} = 10A$
I_{AS}	Avalanche Current				A	$V_{DD} = 40V, V_{GS} = 10V, R_G = 25\Omega, L = 0.5mH$
T_J, T_{STG}	Operating and Storage Temperature	-55	—	150	$^{\circ}C$	

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