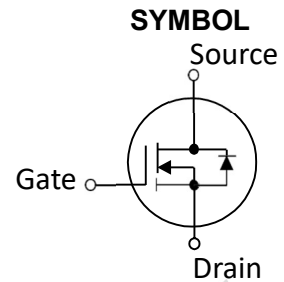



**40VP-Channel MOSFET**

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

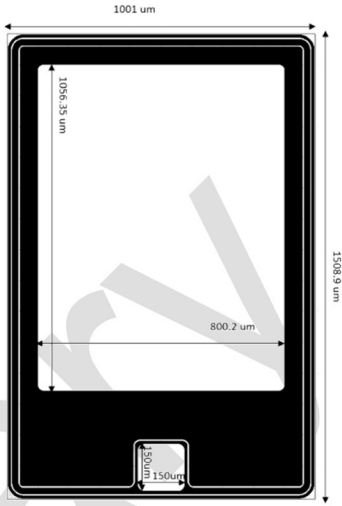

**Electrical Characteristics in C/P Test (T<sub>J</sub> at 25 °C)**


Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Condition
V <sub>(BR)DSS</sub>	Drain-Source Breakdown Voltage	—	—	-40	V	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance	—	22	26	mΩ	V <sub>GS</sub> = -10V, I <sub>D</sub> = -1A <sup>(1)</sup>
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance	—	29	35	mΩ	V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -1A <sup>(1)</sup>
V <sub>GS(th)</sub>	Gate Threshold Voltage	-2	—	-1.3	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA
I <sub>DSS</sub>	Drain-to-Source Leakage Current	-1	—	—	μA	V <sub>DS</sub> = -40V, V <sub>GS</sub> = 0V
I <sub>GSS</sub>	Gate-to-Source Leakage Current	-100	—	100	nA	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±20V
T <sub>J</sub> , T <sub>STG</sub>	Operating and Storage Temperature	-55°C to 150°C Max.				

<b>Mechanical Data</b>		<b>Die Drawing</b>
Chip Size <sup>(2)</sup>	1509 μm X 1001 μm	
Gate Pad Size	150 μm X 150 μm	
Source Pad Size	1056 μm X 800 μm	
Scribe Line Width	60 μm	
Wafer Thickness	150 μm	
Wafer Diameter	200 mm	
Gross Die	17404 EA	
Source Metallization	Al-Cu (4μm 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 ± 3°C	

(1) Pulse Width tp = < 1 mS, Duty Cycle < 2%.

(2) Chip size not include scribe line.

Specific Assembly Information Bill of Material (BOM)		Die Drawing
Package Type	DFN 5 x 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 x 6	
Molding Compound Manufacturer	G700HF	
Solder Plating Composition	Pure Tin	

Position			Bonding Diagram Top View
	X (um)	Y (um)	
ZERO	0	0	
TOP	1508.9	1001	
S1	100	100.4	
S2	1156.35	900.6	
G1	1331.05	425.5	
G2	1481.05	575.5	

**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	—	—	$\mu A$	$V_{DS} = -40V, V_{GS} = 0V$
$I_{GSSF}$	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	—	—	28	m $\Omega$	$V_{GS} = -10V, I_D = -8A$
$R_{DS(ON)}$	Static Drain-Source On-Resistance	—	—	37	m $\Omega$	$V_{GS} = -4.5V, I_D = -6A$
$V_{GS(th)}$	Gate Threshold Voltage	-2	—	-1.3	V	$V_{DS} = V_{GS}, I_D = -250\mu A$
$V_{SD}$	Body Diode Forward Voltage	—	—	-1.1	V	$V_{GS} = 0V, I_{SD} = -10A$
$T_J, T_{STG}$	Operating and Storage Temperature	-55	—	150	$^{\circ}C$	

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