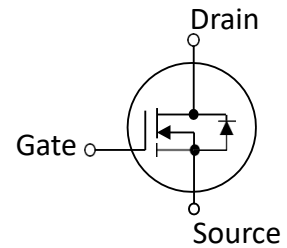


**100V N-Channel MOSFET**

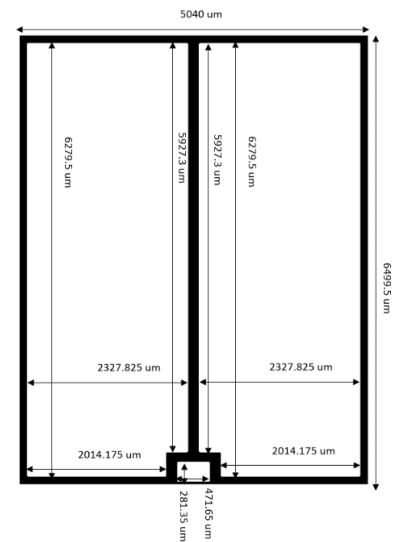
- Advanced Split Gate Device Design and Processes
- High Reliability Capability
- Sampled CP Probing and Inking

**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    | 100                 | —    | —    | V          | $V_{GS} = 0V, I_D = 250\mu A$     |
| $R_{DS(ON)}$   | Static Drain-Source On-Resistance | —                   | 0.9  | 1.1  | m $\Omega$ | $V_{GS} = 10V, I_D = 5A^{(1)}$    |
| $V_{GS(th)}$   | Gate Threshold Voltage            | 2                   | —    | 4    | V          | $V_{DS} = V_{GS}, I_D = 250\mu A$ |
| $I_{DSS}$      | Drain-to-Source Leakage Current   | —                   | —    | 1    | $\mu A$    | $V_{DS} = 100V, V_{GS} = 0V$      |
| $I_{GSS}$      | 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. |      |      |            |                                   |

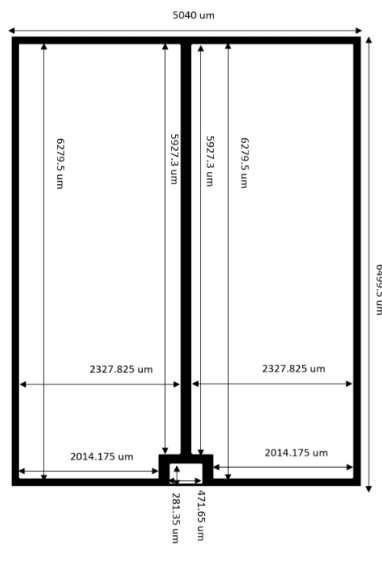
**Mechanical Data**


|                                 |   |
|---------------------------------|---|
| Chip Size <sup>(2)</sup>        | 6500 $\mu m$ X 5040 $\mu m$   |
| Gate Pad Size                   | 281 $\mu m$ X 472 $\mu m$   |
| Source Pad Size                 | 6280 $\mu m$ X 2328 $\mu m$ X 2   |
| Scribe Line Width               | 60 $\mu m$  |
| Wafer Thickness                 | 150 $\mu m$   |
| Wafer Diameter                  | 200 mm  |
| Gross Die                       | 805 EA  |
| Source Metallization            | AlCu  |
| 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   | TOLL                |  |
| Die Attach Method                                    | Soft solder         |   |
| Soft Solder Composition                              | Pb,Sn,Ag            |   |
| Gate Wire Bonding                                    | Al wire, 5 mil x 1  |   |
| Source Wire Bonding                                  | Al wire, 20 mil x 6 |   |
| Molding Compound Manufacturer                        | G700HF              |   |
| Solder Plating Composition                           | Pure Tin            |   |

| Position |          |          | Bonding Diagram Top View   |
|----------|----------|----------|--|
|          | X (μm)   | Y (μm)   |  |
| ZERO     | 0        | 0        |  |
| TOP      | 6499.5   | 5040     |  |
| S1       | 110      | 110      |  |
| S2       | 6389.5   | 2124.175 |  |
| S3       | 6037.3   | 2437.825 |  |
| S4       | 110      | 2602.175 |  |
| S5       | 6037.3   | 2915.825 |  |
| S6       | 6389.5   | 4930     |  |
| G1       | 6183.875 | 2284.175 |  |
| G2       | 6465.225 | 2755.825 |  |

| <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> =100V, 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    | 100  | —    | —    | V    | V <sub>GS</sub> =0V, I <sub>D</sub> =250μA                                  |
| BV <sub>DSS</sub>  | Drain-Source Breakdown Voltage    | 100  | —    | —    | V    | V <sub>GS</sub> =0V, I <sub>D</sub> =1mA                                    |
| R <sub>DS(ON)</sub>  | Static Drain-Source On-Resistance | —    | —    | 1.5  | mΩ   | V <sub>GS</sub> =10V, I <sub>D</sub> =20A                                   |
| V <sub>GS(th)</sub>  | Gate Threshold Voltage            | 2    | —    | 4    | V    | V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA                    |
| V <sub>SD</sub>  | Body Diode Forward Voltage        | —    | —    | 1.1  | V    | V <sub>GS</sub> =0V, I <sub>SD</sub> =10A                                   |
| I <sub>AS</sub>  | Avalanche Current                 |      |      |      | A    | V <sub>DD</sub> =50V, V <sub>GS</sub> =10V,<br>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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