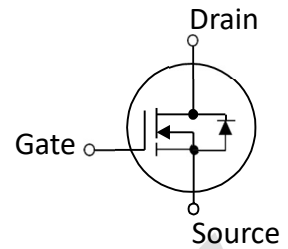
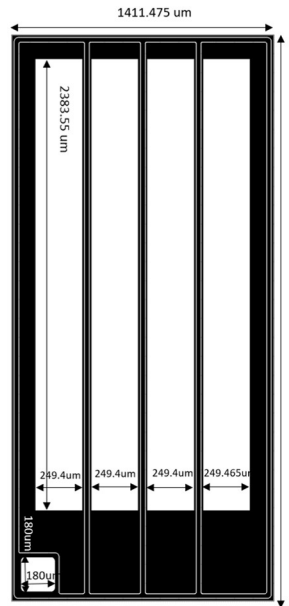


30V N-Channel MOSFET

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

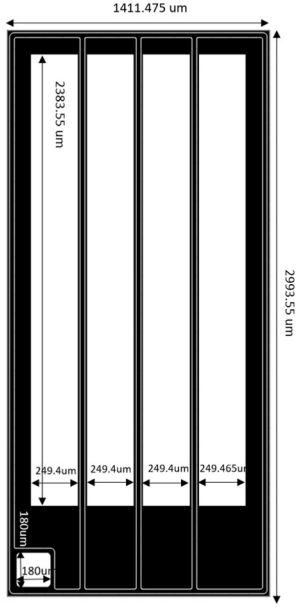
SYMBOL

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

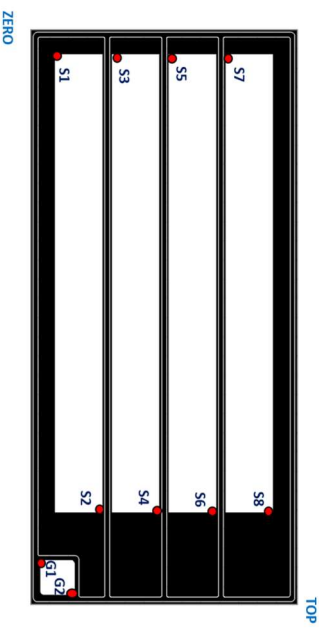
| Symbol | Parameter | Min. | Typ. | Max. | Unit | Test Condition |
|-----------------------------------|-----------------------------------|---------------------|------|------|------|--|
| V _{(BR)DSS} | Drain-Source Breakdown Voltage | 30 | — | — | V | V _{GS} = 0V, I _D = 250μA |
| R _{DS(ON)} | Static Drain-Source On-Resistance | — | 1.4 | 1.8 | mΩ | V _{GS} = 10V, I _D = 1A(1) |
| R _{DS(ON)} | Static Drain-Source On-Resistance | — | 1.6 | 2 | mΩ | V _{GS} = 4.5V, I _D = 1A(1) |
| V _{GS(th)} | Gate Threshold Voltage | 1 | — | 3 | V | V _{DS} = V _{GS} , I _D = 250μA |
| I _{DSS} | Drain-to-Source Leakage Current | — | — | 1 | μA | V _{DS} = 30V, 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 ⁽²⁾ | 1411 μm X 2993 μm |  |
| Gate Pad Size | 180 μm X 180 μm | |
| Source Pad Size | 2383 X 249 μm (4 Pads) | |
| Scribe Line Width | 60 μm | |
| Wafer Thickness | 100 μm | |
| Wafer Diameter | 200 mm | |
| Gross Die | 6328 EA | |
| Source Metallization | Ni 2-4um / Pd 2k-3kA / Au 200-500A | |
| 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 ± 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 | DFN5*6 |  |
| Die Attach Method | Soft solder | |
| Soft Solder Composition | Pb,Sn,Ag | |
| Gate Wire Bonding | Cu, 2 mil x1 | |
| Source Wire Bonding | Cu clip | |
| Molding Compound Manufacturer | G700HF | |
| Solder Plating Composition | Pure Tin | |
| | | |

| Position | | | Bonding Diagram Top View |
|----------|---------|----------|---|
| | X (μm) | Y (μm) | |
| ZERO | 0 | 0 |  |
| TOP | 2993.55 | 1411.475 | |
| S1 | 130 | 130 | |
| S2 | 2513.55 | 379.4 | |
| S3 | 130 | 430.67 | |
| S4 | 2513.55 | 680.07 | |
| S5 | 130 | 731.34 | |
| S6 | 2513.55 | 980.74 | |
| S7 | 130 | 1032.01 | |
| S8 | 2513.55 | 1281.475 | |
| G1 | 2763 | 51.7 | |
| G2 | 2943 | 231.7 | |

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 | $V_{DS} = 30V, V_{GS} = 0V$ |
| 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 | 30 | — | — | V | $V_{GS} = 0V, I_D = 250\mu A$ |
| BV_{DSS} | Drain-Source Breakdown Voltage | 30 | — | — | V | $V_{GS} = 0V, I_D = 1mA$ |
| $R_{DS(ON)}$ | Static Drain-Source On-Resistance | — | — | 2.4 | m Ω | $V_{GS} = 10V, I_D = 20A$ |
| $R_{DS(ON)}$ | Static Drain-Source On-Resistance | — | — | 2.9 | m Ω | $V_{GS} = 4.5V, I_D = 18A$ |
| $V_{GS(th)}$ | Gate Threshold Voltage | 1 | — | 3 | V | $V_{DS} = V_{GS}, I_D = 250\mu A$ |
| V_{SD} | Body Diode Forward Voltage | — | — | 1.2 | V | $V_{GS} = 0V, I_{SD} = 20A$ |
| I_{AS} | Avalanche Current | | | | A | $V_{DD} = 30V, V_{GS} = 10V, R_G = 25\Omega, L = 0.5mH$ |
| T_J, T_{STG} | Operating and Storage Temperature | -55 | — | 150 | $^{\circ}C$ | |

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