

# X0059

## N-Channel Enhancement Mode MOSFET

16V(VDS) /  $\pm 12$ V(VGS) / 40A(ID)

Rev0.5

---



# Wafer Specification

## 1. Order Information

| Part No. | Description                                                                                                                        | Gross die / per 8" wafer |
|----------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| X0059    | <b>16V(<math>V_{DS}</math>) / <math>\pm 12V(V_{GS})</math> / 40A(<math>I_D</math>)</b><br><b>N-Channel Enhancement Mode MOSFET</b> | 36,860                   |

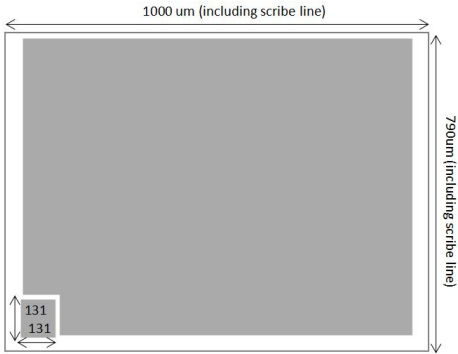
## 2. Mechanical Data

|                                            |                       |
|--------------------------------------------|-----------------------|
| Nominal Back Metal Composition, Thickness  | Ti-Ni-Ag (13kÅ°)      |
| Nominal Front Metal Composition, Thickness | AlCu (4µm)            |
| Wafer Diameter                             | 200mm, with 010 notch |
| Wafer Thickness                            | 150±10µm              |
| Scribe Line Width                          | 60µm                  |
| Passivation                                | SRO+SiN               |

## 3. Key Electrical Characteristics of Die (at $T_J = 25^\circ\text{C}$ , unless otherwise specified)

| Parameter          | Description                          | Min.               | Typ. | Max. | Unit | Test Conditions                  |
|--------------------|--------------------------------------|--------------------|------|------|------|----------------------------------|
| $V_{(BR)DSS}$      | Drain-to-Source Breakdown Voltage    | 16                 |      |      | V    | $V_{GS}=0V$ , $I_D=250\mu A$     |
| $I_D$ (Device Ref) | Continuous Drain Current             |                    |      | 40   | A    | $T_J=25^\circ\text{C}$           |
| $R_{DS(on)}(CP)$   | Static Drain-to-Source On-Resistance |                    | 6.3  | 18   | mΩ   | $V_{GS}=4.5V$ , $I_D=1A$         |
|                    |                                      |                    | 9    | 21   | mΩ   | $V_{GS}=2.5V$ , $I_D=1A$         |
| $R_{DS(on)}(FT)$   | Static Drain-to-Source On-Resistance |                    | 7.7  | 10   | mΩ   | $V_{GS}=4.5V$ , $I_D=20A$        |
|                    |                                      |                    | 10.5 | 15   | mΩ   | $V_{GS}=2.5V$ , $I_D=10A$        |
| $V_{GS(th)}$       | Gate Threshold Voltage               | 0.5                | 0.8  | 1.1  | V    | $V_{DS}=V_{GS}$ , $I_D=250\mu A$ |
| $I_{DSS}$          | Drain-to-Source Leakage Current      |                    |      | 1    | µA   | $V_{DS}=16V$ , $V_{GS}=0V$       |
| $I_{GSS}$          | Gate-to-Source Leakage Current       |                    |      | ±100 | nA   | $V_{GS}=\pm 12V$ , $V_{DS}=0V$   |
| $T_J$ , $T_{STG}$  | Operating and Storage Temperature    | -55°C to 150°C Max |      |      |      |                                  |

## 4. Die Outline & FT Data

|                                                                                     |                                                                                                                 |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
|  | Die Size: 1000µm × 790µm (including scribe line)                                                                |
|                                                                                     | Gate: 131µm × 131µm                                                                                             |
|                                                                                     | <p>For TO-252 package</p> <p>Suggest Bonding wire:</p> <p>Gate: 1 × 1.0 mil Cu</p> <p>Source: 2 × 15 mil Al</p> |