

# X0103

## N-Channel Enhancement Mode MOSFET

20V(VDS) /  $\pm 12$ V(VGS) / 4A(ID)

Rev1.0

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# Wafer Specification

## 1. Order Information

| Part No. | Description                                                                            | Gross die / per 8" wafer |
|----------|----------------------------------------------------------------------------------------|--------------------------|
| X0103    | 20V( $V_{DS}$ ) / $\pm 12V(V_{GS})$ / 4A( $I_D$ )<br>N-Channel Enhancement Mode MOSFET | 125,000                  |

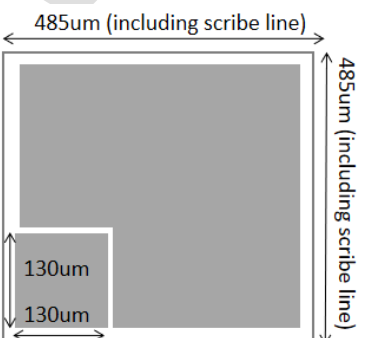
## 2. Mechanical Data

|                                            |                                     |
|--------------------------------------------|-------------------------------------|
| Nominal Back Metal Composition, Thickness  | Ti-Ni-Ag-Sn (1kA°-2kA°-10kA°-14kA°) |
| Nominal Front Metal Composition, Thickness | AlCu (4 $\mu$ m)                    |
| Wafer Diameter                             | 200mm, with 010 notch               |
| Wafer Thickness                            | 150 $\pm$ 10 $\mu$ m                |
| Scribe Line Width                          | 60 $\mu$ m                          |
| 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    | 20                                               |      |           | V          | $V_{GS}=0V$ , $I_D=250\mu A$     |
| $I_D$ (Device Ref) | Continuous Drain Current             |                                                  |      | 4         | A          | $T_J=25^\circ\text{C}$           |
| $R_{DS(on)}(CP)$   | Static Drain-to-Source On-Resistance |                                                  | 28   | 46        | m $\Omega$ | $V_{GS}=4.5V$ , $I_D=1A$         |
|                    |                                      |                                                  | 35   | 62        | m $\Omega$ | $V_{GS}=2.5V$ , $I_D=1A$         |
| $R_{DS(on)}(FT)$   | Static Drain-to-Source On-Resistance |                                                  | 34   | 54        | m $\Omega$ | $V_{GS}=4.5V$ , $I_D=4A$         |
|                    |                                      |                                                  | 41   | 70        | m $\Omega$ | $V_{GS}=2.5V$ , $I_D=3A$         |
| $V_{GS(th)}$       | Gate Threshold Voltage               | 0.4                                              | 0.65 | 1.5       | V          | $V_{DS}=V_{GS}$ , $I_D=250\mu A$ |
| $I_{DSS}$          | Drain-to-Source Leakage Current      |                                                  |      | 1         | $\mu A$    | $V_{DS}=20V$ , $V_{GS}=0V$       |
| $I_{GSS}$          | Gate-to-Source Leakage Current       |                                                  |      | $\pm 100$ | nA         | $V_{GS}=\pm 12V$ , $V_{DS}=0V$   |
| $T_J$ , $T_{STG}$  | Operating and Storage Temperature    | -55 $^\circ\text{C}$ to 150 $^\circ\text{C}$ Max |      |           |            |                                  |

## 4. Die Outline

|                                                                                     |                                                                                                                                                      |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Die Size: 485 $\mu$ m $\times$ 485 $\mu$ m (including scribe line)                                                                                   |
|                                                                                     | Gate: 130 $\mu$ m $\times$ 130 $\mu$ m                                                                                                               |
|                                                                                     | <p>For SOT23 package</p> <p>Suggest Bonding wire:</p> <p>Gate: 1 <math>\times</math> 1.0 mil Cu</p> <p>Source: 4 <math>\times</math> 1.65 mil Cu</p> |