

# X0122

## N-Channel Enhancement Mode MOSFET

20V(VDS) /  $\pm 12$ V(VGS) / 3A(ID)

Rev0.6

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# Wafer Specification

## 1. Order Information

| Part No. | Description                                                                                                                       | Gross die / per 8" wafer |
|----------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| X0122    | <b>20V(V<sub>DS</sub>) / <math>\pm 12</math>V(V<sub>GS</sub>) / 3A(I<sub>D</sub>)</b><br><b>N-Channel Enhancement Mode MOSFET</b> | 178,000                  |

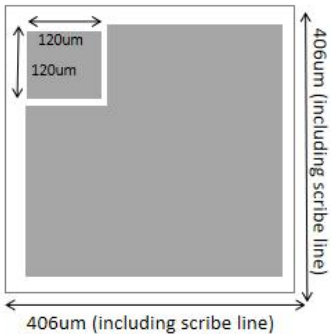
## 2. Mechanical Data

|                                            |                       |
|--------------------------------------------|-----------------------|
| Nominal Back Metal Composition, Thickness  | Ti-Ni-Ag-Sn (36kÅ°)   |
| Nominal Front Metal Composition, Thickness | AlCu (4μm)            |
| Wafer Diameter                             | 200mm, with 010 notch |
| Wafer Thickness                            | 125μm $\pm$ 10μm      |
| Scribe Line Width                          | 60μm                  |
| Passivation                                | SRO+SiN               |

## 3. Key Electrical Characteristics of Die (at T<sub>J</sub> = 25 °C, unless otherwise specified)

| Parameter                         | Description                          | Min.               | Typ. | Max. | Unit | Test Conditions                                          |
|-----------------------------------|--------------------------------------|--------------------|------|------|------|----------------------------------------------------------|
| V <sub>(BR)DSS</sub>              | Drain-to-Source Breakdown Voltage    | 20                 |      |      | V    | V <sub>GS</sub> =0V, I <sub>D</sub> =250μA               |
| I <sub>D</sub> (Device Ref)       | Continuous Drain Current             |                    |      | 3    | A    | T <sub>J</sub> =25°C                                     |
| R <sub>DS(on)</sub> (CP)          | Static Drain-to-Source On-Resistance |                    | 45   | 57   | mΩ   | V <sub>GS</sub> =4.5V, I <sub>D</sub> =1A                |
|                                   |                                      |                    | 54   | 68   | mΩ   | V <sub>GS</sub> =2.5V, I <sub>D</sub> =1A                |
| R <sub>DS(on)</sub> (FT)          | Static Drain-to-Source On-Resistance |                    | 48   | 60   | mΩ   | V <sub>GS</sub> =4.5V, I <sub>D</sub> =1A                |
|                                   |                                      |                    | 57   | 71   | mΩ   | V <sub>GS</sub> =2.5V, I <sub>D</sub> =1A                |
| V <sub>GS(th)</sub>               | Gate Threshold Voltage               | 0.3                | 0.7  | 1.5  | 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> =20V, V <sub>GS</sub> =0V                |
| I <sub>GSS</sub>                  | Gate-to-Source Leakage Current       |                    |      | ±100 | nA   | V <sub>GS</sub> =±10V, V <sub>DS</sub> =0V               |
| T <sub>J</sub> , T <sub>STG</sub> | Operating and Storage Temperature    | -55°C to 150°C Max |      |      |      |                                                          |

## 4. Die Outline

|                                                                                     |                                                                                              |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
|  | Die Size: 406μm × 406μm (including scribe line)                                              |
|                                                                                     | Gate: 120μm × 120μm                                                                          |
|                                                                                     | For SOT23 package<br>Suggest Bonding wire:<br>Gate: 1 × 1.5 mil Cu<br>Source: 3 × 1.5 mil Cu |