

# **XG0002**

## **N-Channel Enhancement Mode SGT MOSFET**

100V(VDS) /  $\pm 20$ V(VGS) / 120A(ID)

Rev0.3

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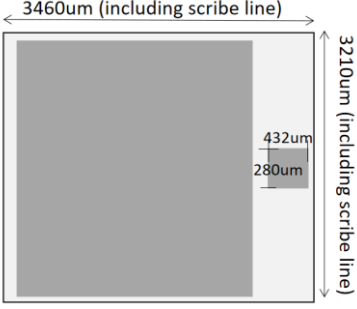
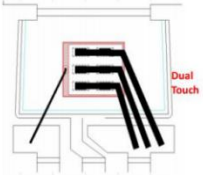


# Wafer Specification

## 1. Order Information

| Part No. | Description                                                                                                                             | Gross die / per 8" wafer |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| XG0002   | <b>100V(<math>V_{DS}</math>) / <math>\pm 20V(V_{GS})</math>/ 120A(<math>I_D</math>)</b><br><b>N-Channel Enhancement Mode SGT MOSFET</b> | 2,500                    |

## 2. Physical Characteristics

|                                                                                   |                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Die Size: 3460 $\mu$ m $\times$ 3210 $\mu$ m (including scribe line)                                                                                                                             |
|                                                                                   | Gate: 280 $\mu$ m $\times$ 432 $\mu$ m                                                                                                                                                           |
|                                                                                   | For TO-220C-3L package<br>Suggest Bonding wire:<br>Gate: 1 $\times$ 5 mil AL<br>Source: 3 $\times$ 15 mil AL  |

## 3. Mechanical Data

|                                            |                       |
|--------------------------------------------|-----------------------|
| Nominal Back Metal Composition, Thickness  | Ti-Ni-Ag (13kA°)      |
| Nominal Front Metal Composition, Thickness | AlCu (4 $\mu$ m)      |
| Wafer Diameter                             | 200mm, with 010 notch |
| Wafer Thickness                            | 200 $\pm$ 10 $\mu$ m  |
| Scribe Line Width                          | 60 $\mu$ m            |

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

| Parameter                         | Description                          | Min.               | Typ. | Max. | Unit | Test Conditions                                          |
|-----------------------------------|--------------------------------------|--------------------|------|------|------|----------------------------------------------------------|
| V <sub>(BR)DSS</sub>              | Drain-to-Source Breakdown Voltage    | 100                | -    | -    | V    | V <sub>GS</sub> =0V, I <sub>D</sub> =250μA               |
| I <sub>D(Device Ref)</sub>        | Continuous Drain Current             | -                  | -    | 120  | A    | T <sub>J</sub> =25°C                                     |
| R <sub>DS(on)</sub> (FT)          | Static Drain-to-Source On-Resistance | -                  | 4.2  | 5.25 | mΩ   | V <sub>GS</sub> =10V, I <sub>D</sub> =20A                |
| V <sub>GS(th)</sub>               | Gate Threshold Voltage               | 2.0                | 3.0  | 4.0  | 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> =100V, V <sub>GS</sub> =0V               |
| I <sub>GSS</sub>                  | Gate-to-Source Leakage Current       | -                  | -    | ±100 | nA   | V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V               |
| R <sub>g</sub>                    | Gate Poly Resistance                 | 1                  | 2.1  | 4    | Ω    | V <sub>DS</sub> =0V, V <sub>GS</sub> =0,f=1MHZ           |
| C <sub>iss</sub>                  | Input Capacitance                    | -                  | 4800 | -    | pF   | V <sub>DS</sub> =50V, V <sub>GS</sub> =0,<br>f=1MHZ      |
| C <sub>oss</sub>                  | Output Capacitance                   | -                  | 2500 | -    | pF   |                                                          |
| C <sub>rss</sub>                  | Reverse Transfer Capacitance         | -                  | 180  | -    | pF   |                                                          |
| T <sub>J</sub> , T <sub>STG</sub> | Operating and Storage Temperature    | -55°C to 150°C Max |      |      |      |                                                          |