

# **XG3016**

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

40V(VDS) /  $\pm 20$ V(VGS) / 198A(ID)

Rev0.1

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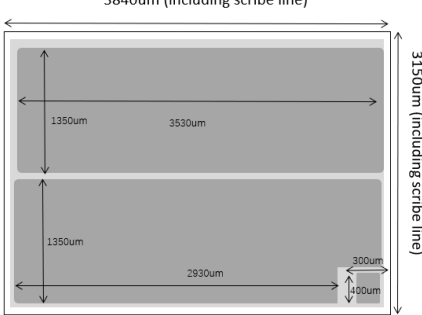
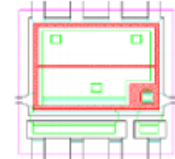


# Wafer Specification

## 1. Order Information

| Part No. | Description                                                                                  | Gross die / per 8,, wafer |
|----------|----------------------------------------------------------------------------------------------|---------------------------|
| XG3016   | 40V( $V_{DS}$ ) / $\pm 20V(V_{GS})$ / 198A( $I_D$ )<br>N-Channel Enhancement Mode SGT MOSFET | 2,354                     |

## 2. Physical Characteristics

|                                                                                   |                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Die Size: 3840 $\mu$ m $\times$ 3150 $\mu$ m (including scribe line)                                                                                                             |
|                                                                                   | Gate: 300 $\mu$ m $\times$ 400 $\mu$ m                                                                                                                                           |
|                                                                                   | For PDFN5X6 package<br>Suggest Bonding wire:<br>Gate: 0.203 mm Clip<br>Source: 0.203 mm Clip  |

## 3. Mechanical Data

|                                            |                              |
|--------------------------------------------|------------------------------|
| Nominal Back Metal Composition, Thickness  | Ti-Ni-Ag (1kA°-3kA°-10kA°)   |
| Nominal Front Metal Composition, Thickness | NIAu (3.05 $\mu$ m)          |
| Wafer Diameter                             | 200mm, with 010 notch        |
| Wafer Thickness                            | 125 $\mu$ m $\pm$ 10 $\mu$ m |
| Scribe Line Width                          | 100 $\mu$ 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    | 40                 | -    | -    | V    | V <sub>GS</sub> =0V, I <sub>D</sub> =250μA               |
| I <sub>D(Device Ref)</sub>        | Continuous Drain Current             | -                  | -    | 198  | A    | T <sub>J</sub> =25°C                                     |
| R <sub>DS(on)</sub> (FT)          | Static Drain-to-Source On-Resistance | -                  | 0.6  | 0.72 | mΩ   | V <sub>GS</sub> =10V, I <sub>D</sub> =15A                |
| V <sub>GS(th)</sub>               | Gate Threshold Voltage               | 1.4                | 1.6  | 1.9  | 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> =40V, 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               |
| E <sub>AS</sub>                   | Single Pulsed Avalanche Energy       | -                  | -    | 750  | mJ   | L=0.5mH, V <sub>DD</sub> =20V, V <sub>G</sub> =10V       |
| R <sub>g</sub>                    | Gate Poly Resistance                 | -                  | 2.0  | -    | Ω    | V <sub>DS</sub> =0V, V <sub>GS</sub> =0, f=1MHZ          |
| C <sub>iss</sub>                  | Input Capacitance                    | -                  | 7000 | -    | pF   | V <sub>DS</sub> =20V, V <sub>GS</sub> =0, f=1MHZ         |
| C <sub>oss</sub>                  | Output Capacitance                   | -                  | 4800 | -    | pF   |                                                          |
| C <sub>rss</sub>                  | Reverse Transfer Capacitance         | -                  | <250 | -    | pF   |                                                          |
| T <sub>J</sub> , T <sub>STG</sub> | Operating and Storage Temperature    | -55°C to 175°C Max |      |      |      |                                                          |