

General Features

- High speed power switching
- $R_{DS(ON),typ}^{(1)}=5.4m\Omega @ V_{GS}=10V, I_D=20A$
- Enhanced body diode dv/dt capability
- Enhanced avalanche ruggedness

| | |
|------------|------------------------|
| BV_{DSS} | $R_{DS(ON),typ}^{(1)}$ |
| 80V | 5.4m Ω |

Applications

- Synchronous rectification in SMPS
- Hard switching and High speed circuit
- DC/DC in telecoms and industrial

Wafer Information

| Item | Description |
|--|---|
| Wafer Diameter | 200mm |
| Wafer Thickness | 200um |
| Die Size | 3.14mm x 2.56mm |
| Gross Die Per Wafer | 3460ea |
| Width of Scribe Line | 60um |
| Gate Bonding Pad Size | 376um x 500um |
| Source Bonding Pad Size | See die drawing |
| Top Passivation | Silicon Nitride |
| Top Metal | AlCu system, 4.0um |
| Backside Metal | Ti/Ni/Ag system |
| Storage environment for original and sealed MBB bags | Ambient atmosphere air, Temperature 17°C~25°C |
| Storage environment for open MBB bags | Acc. to IEC62258-5: Atmosphere >99% Nitrogen or inert gas, Humidity <25%RH, Temperature 17°C~25°C |

Absolute Maximum Ratings

$T_j=25^\circ C$ unless otherwise specified

| Symbol | Parameter | Value | Unit |
|----------------|-------------------------------|----------|------|
| V_{DSS} | Drain to Source Voltage | 80 | V |
| V_{GS} | Gate to Source Voltage | ± 20 | V |
| $E_{AS}^{(1)}$ | Single Pulse Avalanche Energy | 300 | mJ |

Caution: Stresses greater than those listed in the "Absolute Maximum Ratings" may cause permanent damage to the device.

Electrical Characteristics on Wafer Level

OFF Characteristics

$T_j=25^\circ C$ unless otherwise specified

| Symbol | Parameter | Min. | Typ. | Max. | Unit | Test Conditions |
|------------|-----------------------------------|------|------|-----------|---------|-----------------------------|
| BV_{DSS} | Drain-to-Source Breakdown Voltage | 80 | | | V | $V_{GS}=0V, I_D=10mA$ |
| I_{DSS} | Drain-to-Source Leakage Current | | | 1 | μA | $V_{DS}=80V, V_{GS}=0V$ |
| I_{GSS} | Gate-to-Source Leakage Current | | | ± 100 | nA | $V_{GS}=\pm 20V, V_{DS}=0V$ |

ON Characteristics

$T_j=25^\circ C$ unless otherwise specified

| Symbol | Parameter | Min. | Typ. | Max. | Unit | Test Conditions |
|--------------|--------------------------------------|------|--------------------|--------------------|------------|------------------------|
| $R_{DS(ON)}$ | Static Drain-to-Source On-Resistance | - | 5.4 ⁽¹⁾ | 6.0 ⁽¹⁾ | m Ω | $V_{GS}=10V, I_D=20$ |
| $V_{GS(th)}$ | Gate Threshold Voltage | 2.5 | | 3.4 | V | $V_{DS}=V_{GS}, I_D=2$ |
| V_{SD} | Body Diode Forward Voltage | | 0.7 | | V | $I_S=1.0A, V_{GS}=0$ |

Dynamic Characteristics

Essentially independent of operating temperature

| Symbol | Parameter | Min. | Typ. | Max. | Unit | Test Conditions |
|-----------------|------------------------------|------|-------|------|----------|---------------------------------|
| $C_{iss}^{(1)}$ | Input Capacitance | | 3730 | | pF | $V_{GS}=0V, V_{DS}=40V, f=1MHz$ |
| $C_{rss}^{(1)}$ | Reverse Transfer Capacitance | | 24.24 | | | |
| $C_{oss}^{(1)}$ | Output Capacitance | | 674 | | | |
| $R_g^{(1)}$ | Gate Series Resistance | | 1.2 | | Ω | $f=1.0MHz$ |

