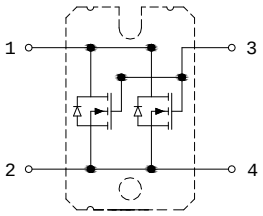
# PRELIMINARY DATASHEET

**900V/ 2x31A N-Channel CooLMOS™ in Parallel In SOT227 Package**

- Extreme dv/dt rated
- High peak current capability
- Low gate charge
- Pb-free lead finish; RoHS compliant





## MAXIMUM RATINGS, $T_C$ = 25°C unless otherwise noted

| Parameter | Symbol | Value | Units |
|---|---|---|---|
| Drain-Source voltage | $V_{DSS}$ | 900V | V |
| Gate-Source voltage<br>AC (f>1 Hz) | $V_{GS}$ | ± 30 | |
| Continuous drain current<br>$T_C$ = 25°C<br>$T_C$ = 100°C | $I_D$ | <br>62<br>40 | A |
| Pulsed drain current, pulse width limited by $T_{jmax}$ | $I_{DM}$ | 192 | |
| MOSFET dv/dt ruggedness<br>$V_{DS}$ = 0..400V | dV/dt | 50 | V/ns |
| Operating junction and storage temperature | $T_j$, $T_{stg}$ | -55… +150 | °C |

## Thermal and Isolation Characteristics

| Parameter | Symbol | Max. Value | Units |
|---|---|---|---|
| **Characteristics** | | | |
| Thermal resistance, junction to case | $R_{thJC}$ | 0.2 | °C /W |
| Isolation voltage, RMS (measured between terminals and mounting base, 50-60 Hz, for 1-2 seconds) | $V_{iso}$ | 3000 | V |

## ELECTRICAL CHARACTERISTICS, at $T_C$ = 25°C, unless otherwise specified

| Parameter | Symbol | Conditions | Value | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| **Static Characteristics** | | | | | | |
| Drain-source breakdown voltage | $BV_{DSS}$ | $V_{GS}$ = 0V, $I_D$ = 500µA | 900 | - | - | V |
| Gate threshold voltage | $V_{GS(th)}$ | $V_{DS}$ = $V_{GS}$, $I_D$ = 5.8mA | 2.5 | 3.0 | 3.5 | |
| Drain-source diode forward voltage | $V_{SD}$ | $V_{GS}$ = 0V, $I_F$ = 52A | - | 0.8 | 1.2 | V |
| Zero gate voltage drain current | $I_{DSS}$ | $V_{GS}$ = 0V, $V_{DS}$ = 900V<br>$T_C$ = 25°C | - | - | 20 | µA |
| Gate-source leakage current | $I_{GSS}$ | $V_{GS}$ = 20V, $V_{DS}$ = 0V | - | - | 200 | nA |
| Static drain-source On-resistance | $R_{DS(on)}$ | $V_{GS}$ = 10V, $I_D$ = 52A<br>$T_C$ = 25°C<br>$T_C$ = 150°C | -<br>- | 0.05<br>0.135 | 0.06<br>- | Ω |
| **Dynamic Characteristics** | | | | | | |
| Input capacitance | $C_{iss}$ | $V_{DS}$ = 100V,<br>$V_{GS}$ = 0V,<br>f = 1.0 MHz | - | 13600 | - | pF |
| Output capacitance | $C_{oss}$ | | - | 660 | - | |

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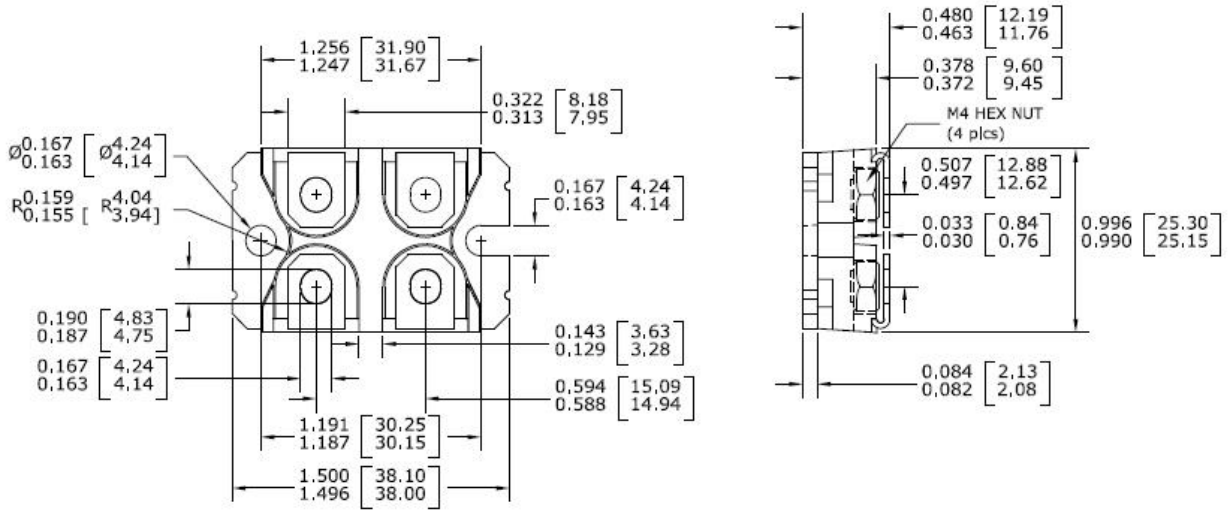
**SWITCHING CHARACTERISTICS,** at $T_C$ = 25°C, unless otherwise specified

| Parameter | Symbol | Conditions | Value | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| Turn-on delay time | $t_{d(on)}$ | $V_{DD}$=400V, $I_D$=52A, $V_{GS}$=10V, $R_G$=3.7Ω | - | 70 | - | ns |
| Rise time | $t_r$ | | - | 20 | - | |
| Turn-off delay time | $t_{d(off)}$ | | - | 400 | - | |
| Fall time | $t_f$ | | - | 25 | - | |
| Gate charge | $Q_g$ | $V_{DD}$ = 400V, $I_D$ = 52A, $V_{GS}$ = 0 to 0V | - | 540 | - | nC |
| Gate-source charge | $Q_{gs}$ | | - | 64 | - | |
| Gate-drain charge | $Q_{gd}$ | | - | 230 | - | |

**Drain-Source Diode Characteristics,** at $T_C$ = 25°C, unless otherwise specified

| Parameter | Symbol | Conditions | Value | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| Reverse recovery time | $t_{rr}$ | $V_R$ = 400V, $I_S$ = $I_F$ = 52A, $di_F/dt$ = 200A/µs | - | 920 | - | ns |
| Reverse recovery charge | $Q_{rr}$ | | - | 60 | - | µC |

**PACKAGE OUTLINE DRAWING**




***CoolMOS™ is a registered trademark of Infineon Technologies AG.***

CAUTION: These devices are ESD sensitive. Use proper handling procedure.

## Disclaimer

These specifications may not be considered as a guarantee of components characteristics. Components have to be tested depending on intended application as adjustments may be necessary. The use of **iQXPRZ Power Inc.** components in life support appliances and systems are subject to written approval of **iQXPRZ Power Inc.**

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