Description
Specifically designed for Automotive applications, this cellular design of HEXFET® Power MOSFETs utilizes the latest processing techniques to achieve low on-resistance per silicon area. This benefit combined with the fast switching speed and ruggedized device design that HEXFET power MOSFETs are well known for, provides the designer with an extremely efficient and reliable device for use in Automotive and a wide variety of other applications.

Features
- Advanced Planar Technology
- Low On-Resistance
- Logic Level Gate Drive
- Dual P Channel MOSFET
- Dynamic dv/dt Rating
- 150°C Operating Temperature
- Fast Switching
- Fully Avalanche Rated
- Lead-Free, RoHS Compliant
- Automotive Qualified *

Symbol | Parameter | Max. | Units
--- | --- | --- | ---
VDS | Drain-Source Voltage | -55 | V
ID @ TA = 25°C | Continuous Drain Current, VGS @ -10V | -3.4 | A
ID @ TA = 70°C | Continuous Drain Current, VGS @ -10V | -2.7 | A
IDM | Pulsed Drain Current \( Q \) | -27 | A
PD @ TA = 25°C | Maximum Power Dissipation \( Q \) | 2.0 | W
PD @ TA = 70°C | Maximum Power Dissipation | 1.3 | W
von | Linear Dearating Factor | 0.016 | mW°C
VGS | Gate-to-Source Voltage | ±20 | V
VGSMS | Gate-to-Source Voltage Single Pulse tp < 10μs | 30 | V
IAS | Single Pulse Avalanche Energy (Thermally Limited) \( Q \) | 114 | mJ
dv/dt | Peak Diode Recovery dv/dt \( Q \) | 5.0 | V/μs
TJ | Operating Junction and Storage Temperature Range | -55 to +150 | °C
TSTG | — | — | —

Absolute Maximum Ratings
Stresses beyond those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only; and functional operation of the device at these or any other condition beyond those indicated in the specifications is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability. The thermal resistance and power dissipation ratings are measured under board mounted and still air conditions. Ambient temperature (TA) is 25°C, unless otherwise specified.

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<th>Max.</th>
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| RJA | Junction-to-Ambient \( Q \) | 62.5 | °C/W

HEXFET® is a registered trademark of Infineon.
*Qualification standards can be found at www.infineon.com
Notes:

① Repetitive rating; pulse width limited by max. junction temperature. (See Fig. 11)
② Starting T_J = 25°C, L = 20mH, R_G = 25Ω, I_KS = -3.4A. (See Fig. 8)
③ I_DD ≤ -3.4A, d/dt ≤ 150A/µs, V_DD ≤ V(BR)DSS, T_J ≤ 150°C.
④ Pulse width ≤ 300µs; duty cycle ≤ 2%.
⑤ When mounted on 1” square copper board, t < 10sec.
Fig. 1 Typical Output Characteristics

Fig. 2 Typical Output Characteristics

Fig. 3 Typical Output Characteristics

Fig. 4 Typical Transfer Characteristics
**Fig 5.** Normalized On-Resistance Vs. Temperature

**Fig 6.** Typical On-Resistance Vs. Drain Current

**Fig 7** Typical On-Resistance Vs. Gate Voltage

**Fig 8.** Maximum Avalanche Energy Vs. Drain Current
**Fig. 9.** Typical Capacitance Vs. Drain-to-Source Voltage

**Fig. 10.** Typical Gate Charge Vs. Gate-to-Source Voltage

**Fig. 11** Typical Source-Drain Diode Forward Voltage

**Fig. 12** Maximum Safe Operating Area
Fig 13. Maximum Drain Current vs. Ambient Temperature

Fig 14. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient
SO-8 Package Outline (Dimensions are shown in millimeters (inches))

**NOTES:**
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSIONS ARE SHOWN IN MILLIMETERS [INCHES].
4. OUTLINE CONFORMS TO JEDEC OUTLINE MS-012AA.
5. DIMENSION DOES NOT INCLUDE MOLD PROTRUSIONS. MOLD PROTRUSIONS NOT TO EXCEED 0.15 [0.06].
6. DIMENSION DOES NOT INCLUDE MOLD PROTRUSIONS. MOLD PROTRUSIONS NOT TO EXCEED 0.25 [0.10].
7. DIMENSION IS THE LENGTH OF LEAD FOR SOLDERING TO A SUBSTRATE.

**SO-8 Part Marking Information**
SO-8 Tape and Reel  (Dimensions are shown in millimeters (inches))

NOTES:
1. CONTROLLING DIMENSION : MILLIMETER.
2. ALL DIMENSIONS ARE SHOWN IN MILLIMETERS(INCHES).
3. OUTLINE CONFORMS TO EIA-481 & EIA-541.

NOTES:
1. CONTROLLING DIMENSION : MILLIMETER.
2. OUTLINE CONFORMS TO EIA-481 & EIA-541.
## Qualification Information

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RoHS Compliant: Yes

† Highest passing voltage.

## Revision History

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| 3/27/2014    | • Added “Logic Level Gate Drive” bullet in the features section on page 1  
• Updated data sheet with new IR corporate template |
| 9/30/2015    | • Updated datasheet with corporate template  
• Corrected ordering table on page 1. |

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