

P-Channel 12-V (D-S) MOSFET

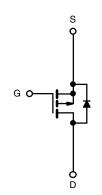
| PRODUCT SUMMARY | | | | |
|---------------------|-------------------------------------|--------------------|--|--|
| V _{DS} (V) | R _{DS(on)} (Ω) | I _D (A) | | |
| | 0.0050 at V _{GS} = - 4.5 V | - 16 | | |
| - 12 | 0.0065 at V _{GS} = - 2.5 V | - 15 | | |
| | 0.0100 at V _{GS} = - 1.8 V | - 13 | | |

FEATURES

- Halogen-free According to IEC 61249-2-21
 Definition
- TrenchFET[®] Power MOSFET
- Compliant to RoHS Directive 2002/95/EC

APPLICATIONS

- · Load Switch
- Battery Switch





HALOGEN

Available

SO-8 S D 1 8 S D 2 7 S D 6 3 G D 4 5 Top View

P-Channel MOSFET

| ABSOLUTE MAXIMUM RATINGS T | _A = 25 °C, unle | ss otherwise n | oted | | | |
|---|----------------------------|-----------------------------------|-------------|--------------|------|--|
| Parameter | | Symbol | 10 s | Steady State | Unit | |
| Drain-Source Voltage | | V _{DS} | - 12 | | V | |
| Gate-Source Voltage | | V _{GS} | ± 8 | | | |
| | T _A = 25 °C | – I _D | - 16 | - 10 | | |
| Continuous Drain Current (T _J = 150 °C) ^a | T _A = 70 °C | | - 11.5 | - 8 | • | |
| Pulsed Drain Current | | I _{DM} | - 50 | | A | |
| Continuous Source Current (Diode Conduction) ^a | | ۱ _S | - 2.7 | - 1.36 | | |
| | T _A = 25 °C | - P _D | 3.0 | 1.5 | W | |
| Maximum Power Dissipation ^a | T _A = 70 °C | | 1.9 | 0.95 | | |
| Operating Junction and Storage Temperature Range | | T _J , T _{stg} | - 55 to 150 | | °C | |

| THERMAL RESISTANCE RATINGS | | | | | |
|--|--------------|--|---------|---------|------|
| Parameter | | Symbol | Typical | Maximum | Unit |
| Maximum lumetian to Ambienta | t ≤ 10 s | - R _{thJA} R _{thJF} | 33 | 42 | °C/W |
| Maximum Junction-to-Ambient ^a | Steady State | | 70 | 84 | |
| Maximum Junction-to-Foot (Drain) | Steady State | | 16 | 21 | |

Notes:

a. Surface Mounted on 1" x 1" FR4 board.

| Parameter | Symbol | Test Conditions Min. | | Тур. | Max. | Unit | |
|---|---------------------|---|-------|--------|-------|------|--|
| Static | | | | | | | |
| Gate Threshold Voltage | V _{GS(th)} | $V_{DS} = V_{GS}$, $I_D = -600 \ \mu A$ | - 0.5 | - | 1.0 | V | |
| Gate-Body Leakage | I _{GSS} | $V_{DS} = 0 V, V_{GS} = \pm 8 V$ | | | ± 100 | nA | |
| Zero Gate Voltage Drain Current | lass | $V_{DS} = -12 V, V_{GS} = 0 V$ | | | - 1 | μA | |
| | IDSS | V_{DS} = - 12 V, V_{GS} = 0 V, T_{J} = 70 °C | | | - 10 | | |
| On-State Drain Current ^a | I _{D(on)} | $V_{DS} = -5 V, V_{GS} = -4.5 V$ | - 30 | | | Α | |
| Drain-Source On-State Resistance ^a | | $V_{GS} = -4.5 \text{ V}, \text{ I}_{D} = -14 \text{ A}$ | | 0.0050 | | Ω | |
| | R _{DS(on)} | $V_{GS} = -2.5 \text{ V}, \text{ I}_{D} = -13 \text{ A}$ | | 0.0065 | | | |
| | | V _{GS} = - 1.8 V, I _D = - 12 A | | 0.0100 | | | |
| Forward Transconductance ^a | 9 _{fs} | V _{DS} = - 6 V, I _D = - 14 A | | 80 | | S | |
| Diode Forward Voltage ^a | V _{SD} | $I_{S} = -2.7 \text{ A}, V_{GS} = 0 \text{ V}$ | | - 0.6 | - 1.1 | V | |
| Dynamic ^b | | | | | | | |
| Total Gate Charge | Qg | | | 110 | 165 | | |
| Gate-Source Charge | Q _{gs} | V_{DS} = - 6 V, V_{GS} = - 5 V, I_{D} = - 14 A | | 15 | | nC | |
| Gate-Drain Charge | Q _{gd} | | | 27.5 | | | |
| Turn-On Delay Time | t _{d(on)} | | | 110 | 170 | | |
| Rise Time | t _r | V_{DD} = - 6 V, R_L = 6 Ω | | 235 | 350 | | |
| Turn-Off Delay Time | t _{d(off)} | $\text{I}_\text{D}\cong$ - 1 A, V_GEN = - 4.5 V, R_g = 6 Ω | | 410 | 620 | ns | |
| Fall Time | t _f | | | 285 | 430 | | |
| Gate Resistance | Rg | | | 3.6 | | Ω | |
| Source-Drain Reverse Recovery Time | t _{rr} | I _F = - 2.1 A, dl/dt = 100 A/μs | | 180 | 270 | ns | |

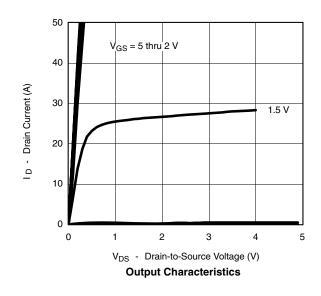
Notes:

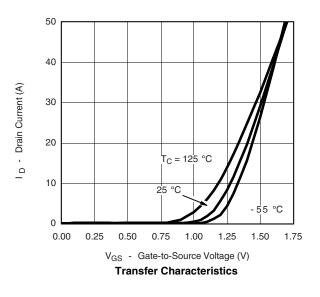
a. Pulse test; pulse width \leq 300 $\mu s,$ duty cycle \leq 2 %.

b. Guaranteed by design, not subject to production testing.

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 conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

TYPICAL CHARACTERISTICS 25 °C unless otherwise noted

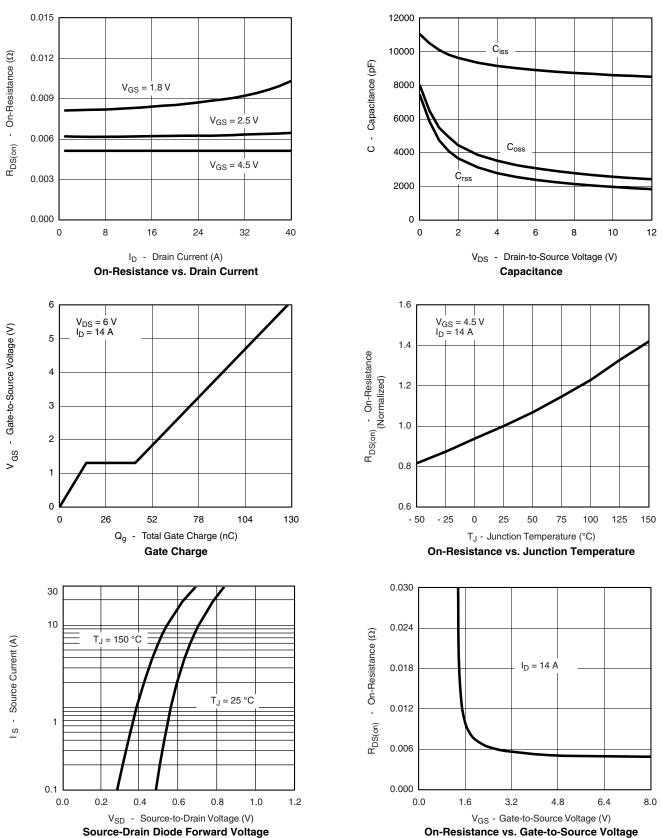




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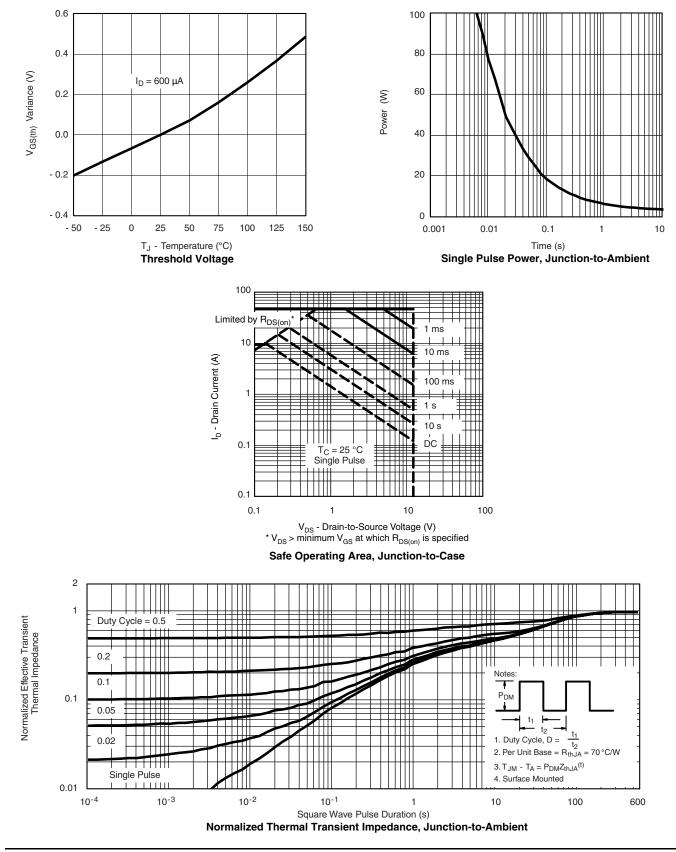
TYPICAL CHARACTERISTICS 25 °C unless otherwise noted



服务热线:400-655-8788

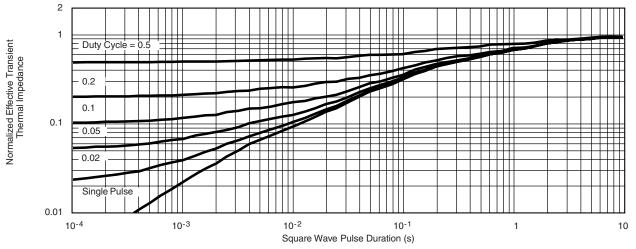


TYPICAL CHARACTERISTICS 25 °C unless otherwise noted









Normalized Thermal Transient Impedance, Junction-to-Foot



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