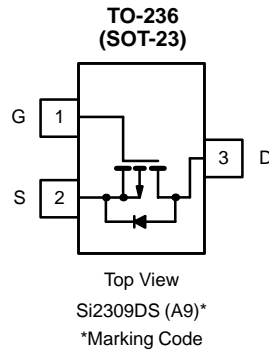




P-Channel 60-V (D-S) MOSFET
New Product

| PRODUCT SUMMARY | | |
|---------------------|----------------------------------|--------------------|
| V _{DS} (V) | r _{DS(on)} (Ω) | I _D (A) |
| -60 | 0.340 @ V _{GS} = -10 V | -1.25 |
| | 0.550 @ V _{GS} = -4.5 V | -1 |

TrenchFET®
Power MOSFETS



| ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED) | | | |
|-------------------------------------------------------------------------|-----------------------------------|------------------------|-------|
| PARAMETER | SYMBOL | LIMIT | UNIT |
| Drain-Source Voltage | V _{DS} | -60 | V |
| Gate-Source Voltage | V _{GS} | ± 20 | |
| Continuous Drain Current (T _J = 150°C) ^{A, B} | I _D | T _A = 25°C | -1.25 |
| | | T _A = 100°C | -0.85 |
| Pulsed Drain Current | I _{DM} | -8 | A |
| Avalanche Current | L = 0.1 mH I _{AS} | -5 | |
| Maximum Power Dissipation ^{A, B} | P _D | T _A = 25°C | 1.25 |
| | | T _A = 70°C | 0.8 |
| Operating Junction and Storage Temperature Range | T _J , T _{stg} | -55 to 150 | °C |

| THERMAL RESISTANCE RATINGS | | | | |
|------------------------------------------|-------------------|--------------|---------|------|
| PARAMETER | SYMBOL | TYPICAL | MAXIMUM | UNIT |
| Maximum Junction-to-Ambient ^A | R _{thJA} | t ≤ 5 sec | 100 | °C/W |
| | | Steady State | 130 | |
| Maximum Junction-to-Lead ^A | R _{thJL} | 45 | 60 | |

Notes
A. Surface Mounted on FR4 Board.
B. t ≤ 5 sec.

Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70835.



SPECIFICATIONS (T_J = 25°C UNLESS OTHERWISE NOTED)

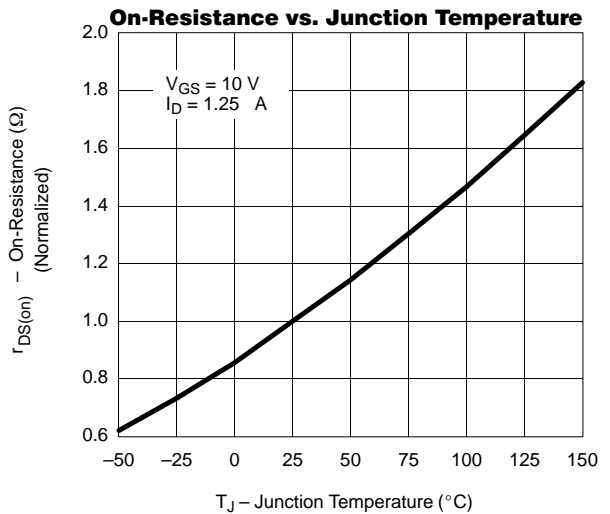
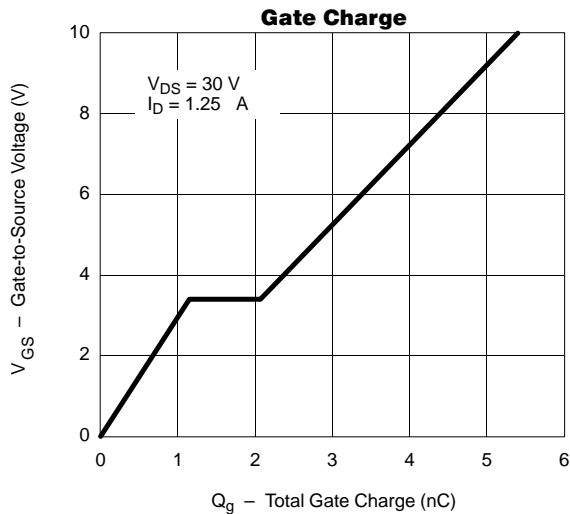
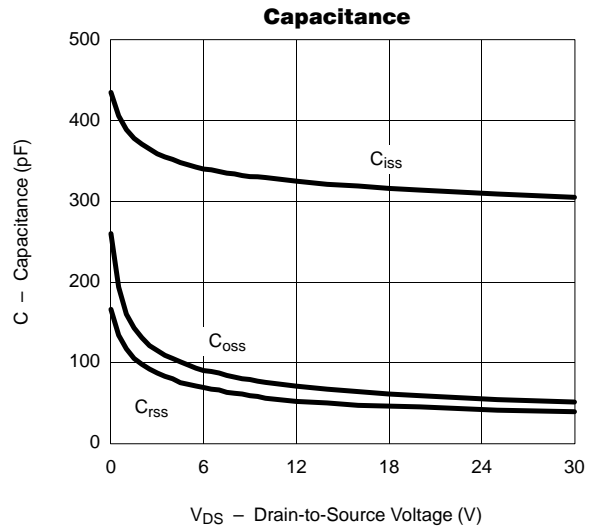
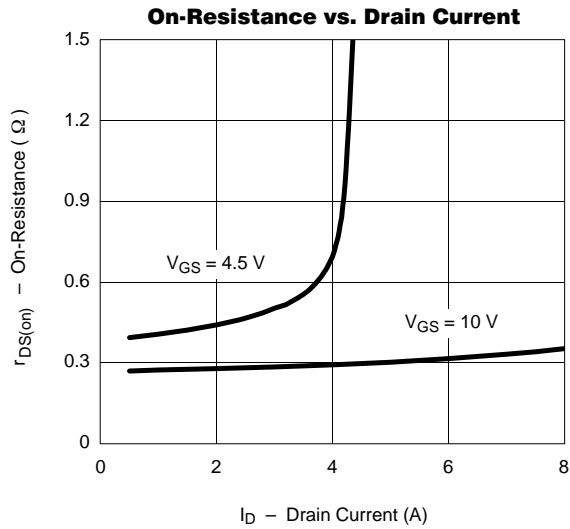
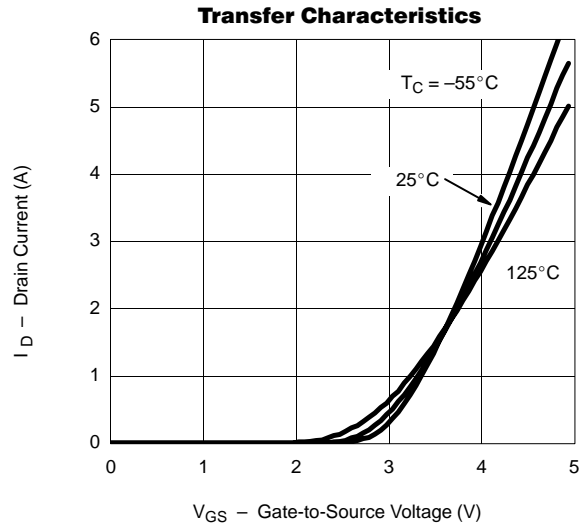
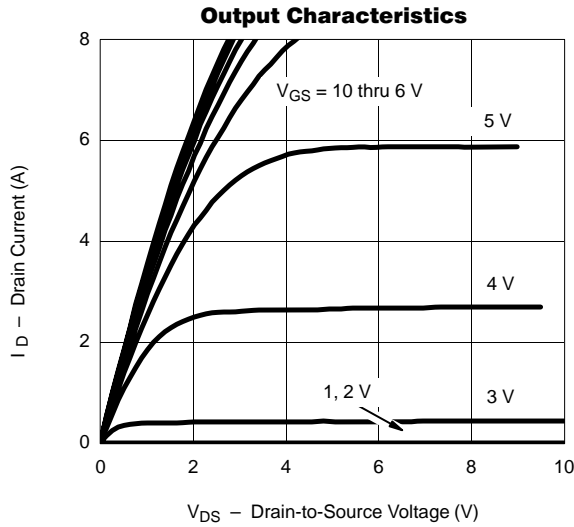
| PARAMETER | SYMBOL | TEST CONDITION | MIN | TYP | MAX | UNIT |
|--------------------------------------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------|-----|-------|-------|------|
| STATIC | | | | | | |
| Drain-Source Breakdown Voltage | V _{(BR)DSS} | V _{DS} = 0 V, I _D = -250 μA | -60 | | | V |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} = V _{GS} , I _D = -250 μA | -1 | | | |
| Gate-Body Leakage | I _{GSS} | V _{DS} = 0 V, V _{GS} = ±20 V | | | ±100 | nA |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} = -48 V, V _{GS} = 0 V | | | -1 | μA |
| | | V _{DS} = -48 V, V _{GS} = 0 V, T _J = 125°C | | | -50 | |
| On-State Drain Current ^A | I _{D(on)} | V _{DS} ≥ -4.5 V, V _{GS} = -10 V | -6 | | | A |
| | | V _{DS} ≥ -4.5 V, V _{GS} = -4.5 V | -3 | | | |
| Drain-Source On-State Resistance ^A | r _{DS(on)} | V _{GS} = -10 V, I _D = -1.25 A | | 0.275 | 0.340 | Ω |
| | | V _{GS} = -4.5 V, I _D = -1 A | | 0.406 | 0.550 | |
| Forward Transconductance ^A | g _{fs} | V _{DS} = -4.5 V, I _D = -1 A | | 1.9 | | S |
| DYNAMIC^B | | | | | | |
| Total Gate Charge | Q _g | V _{DS} = -30 V, V _{GS} = -10 V, I _D = -1.25 A | | 5.4 | 12 | nC |
| Gate-Source Charge | Q _{gs} | | | 1.15 | | |
| Gate-Drain Charge | Q _{gd} | | | 0.92 | | |
| Turn-On Delay Time | t _{d(on)} | V _{DD} = -30 V, R _L = 30 Ω I _D ≅ -1 A, V _{GEN} = -4.5 V, R _G = 6 Ω | | 10.5 | 20 | ns |
| Rise Time | t _r | | | 11.5 | 20 | |
| Turn-Off Delay Time | t _{d(off)} | | | 15.5 | 30 | |
| Fall Time | t _f | | | 7.5 | 15 | |
| SOURCE-DRAIN RATING CHARACTERISTICS^B | | | | | | |
| Continuous Current | I _S | | | | -1.25 | A |
| Pulsed Current | I _{SM} | | | | -8 | |
| Diode Forward Voltage ^A | V _{SD} | I _S = -1.25 A, V _{GS} = 0 V | | -0.82 | -1.2 | V |
| Source-Drain Reverse Recovery Time | t _{rr} | I _F = -1.25 A, di/dt = 100 A/μs | | 30 | 55 | ns |

Notes

- A. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
- B. Guaranteed by design, not subject to production testing.



TYPICAL CHARACTERISTICS (25°C UNLESS OTHERWISE NOTED)





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

