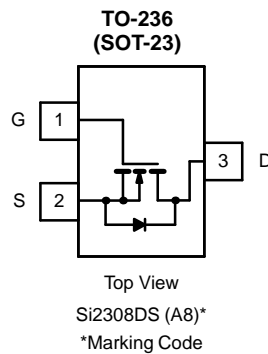


N-Channel 60-V (D-S) MOSFET

| PRODUCT SUMMARY | | |
|-----------------|---------------------------|-----------|
| V_{DS} (V) | $r_{DS(on)}$ (Ω) | I_D (A) |
| 60 | 0.16 @ $V_{GS} = 10$ V | ± 2.0 |
| | 0.22 @ $V_{GS} = 4.5$ V | ± 1.7 |



| ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED) | | | | |
|---|--------------------------|------------|------------------|---|
| Parameter | Symbol | Limit | Unit | |
| Drain-Source Voltage | V_{DS} | 60 | V | |
| Gate-Source Voltage | V_{GS} | ± 20 | | |
| Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a | $T_A = 25^\circ\text{C}$ | I_D | ± 2.0 | A |
| | $T_A = 70^\circ\text{C}$ | | ± 1.6 | |
| Pulsed Drain Current ^b | I_{DM} | ± 10 | | |
| Continuous Source Current (Diode Conduction) ^a | I_S | 1.0 | | |
| Maximum Power Dissipation ^a | $T_A = 25^\circ\text{C}$ | P_D | 1.25 | W |
| | $T_A = 70^\circ\text{C}$ | | 0.80 | |
| Operating Junction and Storage Temperature Range | T_J, T_{stg} | -55 to 150 | $^\circ\text{C}$ | |

| THERMAL RESISTANCE RATINGS | | | |
|--|------------|---------|--------------------|
| Parameter | Symbol | Maximum | Unit |
| Maximum Junction-to-Ambient ^a | R_{thJA} | 100 | $^\circ\text{C/W}$ |
| Maximum Junction-to-Ambient ^c | | 166 | |

Notes

- a. Surface Mounted on FR4 Board, $t = \leq 5$ sec.
- b. Pulse width limited by maximum junction temperature.
- c. Surface Mounted on FR4 Board

For SPICE model information via the Worldwide Web: <http://www.vishay.com/www/product/spice.htm>



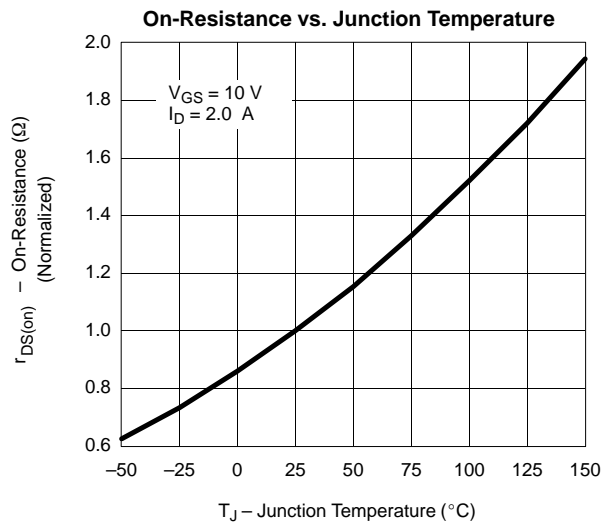
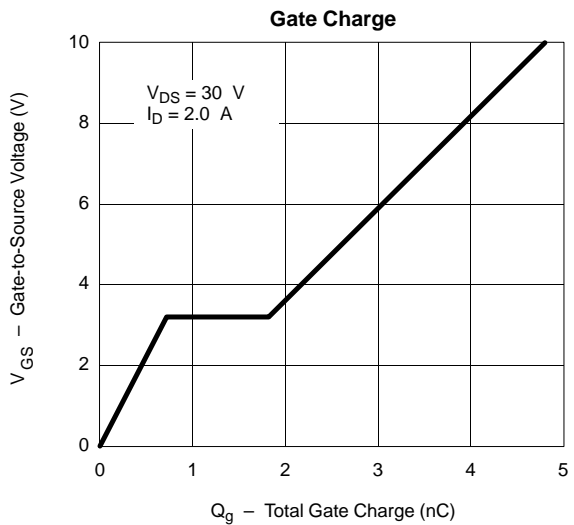
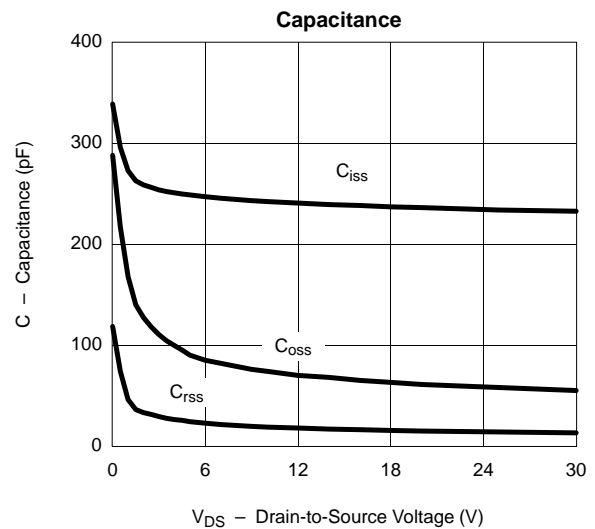
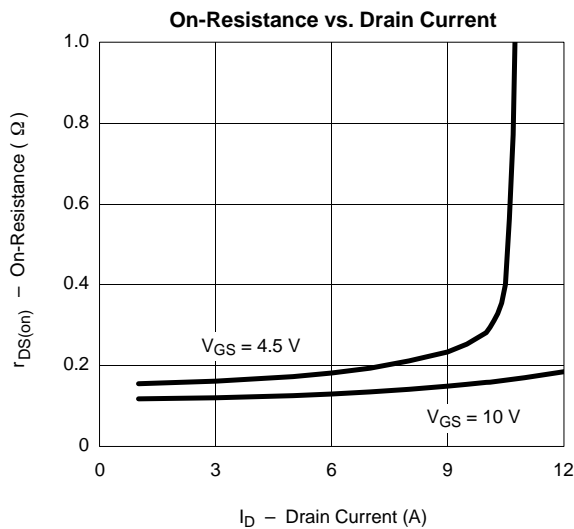
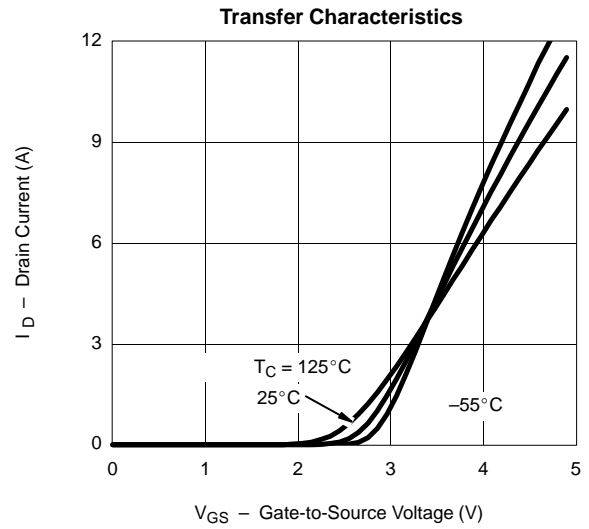
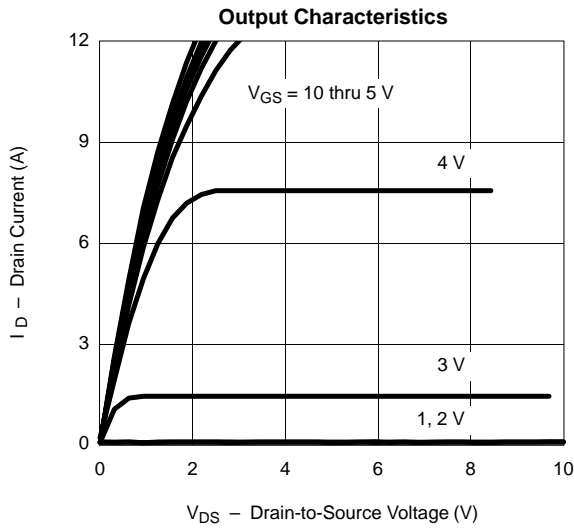
| SPECIFICATIONS (T_J = 25 °C UNLESS OTHERWISE NOTED) | | | | | | |
|--|----------------------|---|-----|-------|------|------|
| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
| Static | | | | | | |
| Drain-Source Breakdown Voltage | V _{(BR)DSS} | V _{DS} = 0 V, I _D = 250 μA | 60 | | | V |
| Gate-Threshold Voltage | V _{GS(th)} | V _{DS} = V _{GS} , I _D = 250 μA | 1.5 | | | |
| Gate-Body Leakage | I _{GSS} | V _{DS} = 0 V, V _{GS} = ±20 V | | | ±100 | nA |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} = 60 V, V _{GS} = 0 V | | | 0.5 | μA |
| | | V _{DS} = 60 V, V _{GS} = 0 V, T _J = 55 °C | | | 10 | |
| 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 | 4 | | | |
| Drain-Source On-State Resistance ^a | r _{DS(on)} | V _{GS} = 10 V, I _D = 2.0 A | | 0.125 | 0.16 | Ω |
| | | V _{GS} = 4.5 V, I _D = 1.7 A | | 0.155 | 0.22 | |
| Forward Transconductance ^a | g _{fs} | V _{DS} = 4.5 V, I _D = 2.0 A | | 4.6 | | S |
| Diode Forward Voltage ^a | V _{SD} | I _S = 1 A, V _{GS} = 0 V | | 0.77 | 1.2 | V |
| Dynamic | | | | | | |
| Total Gate Charge | Q _g | V _{DS} = 30 V, V _{GS} = 10 V, I _D = 2.0 A | | 4.8 | 10 | nC |
| Gate-Source Charge | Q _{gs} | | | 0.8 | | |
| Gate-Drain Charge | Q _{gd} | | | 1.0 | | |
| Input Capacitance | C _{iss} | V _{DS} = 25 V, V _{GS} = 0 V, f = 1 MHz | | 240 | | pF |
| Output Capacitance | C _{oss} | | | 50 | | |
| Reverse Transfer Capacitance | C _{rss} | | | 15 | | |
| Switching | | | | | | |
| 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 | | 7 | 15 | ns |
| Rise Time | t _r | | | 10 | 20 | |
| Turn-Off Delay Time | t _{d(off)} | | | 17 | 35 | |
| Fall Time | t _f | | | 6 | 15 | |

Notes

a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)





TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

