



Dual P-Channel 20-V (D-S) MOSFET

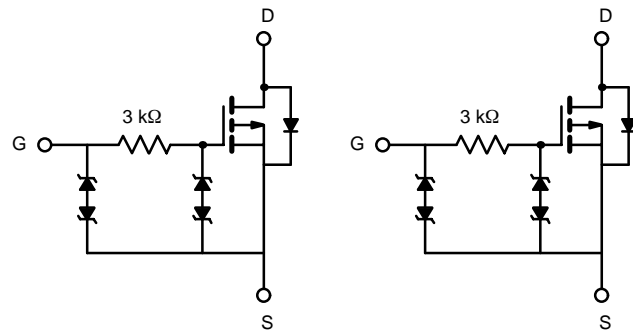
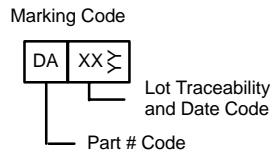
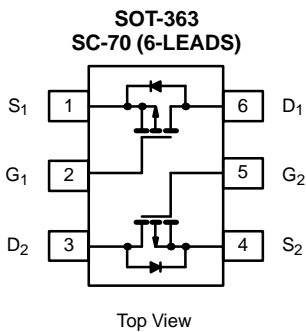
| PRODUCT SUMMARY | | |
|-----------------|---------------------------|-----------|
| V_{DS} (V) | $r_{DS(on)}$ (Ω) | I_D (A) |
| -20 | 0.490 @ $V_{GS} = -4.5$ V | -1.0 |
| | 0.750 @ $V_{GS} = -2.5$ V | -0.81 |
| | 1.10 @ $V_{GS} = -1.8$ V | -0.67 |

FEATURES

- TrenchFET® Power MOSFETS: 1.8-V Rated
- ESD Protected: 3000 V
- Thermally Enhanced SC-70 Package

APPLICATIONS

- Load Switching
- PA Switch
- Level Switch



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

| Parameter | Symbol | 5 secs | Steady State | Unit | |
|---|----------------|--------------------------|--------------|------------------|---|
| Drain-Source Voltage | V_{DS} | -20 | | V | |
| Gate-Source Voltage | V_{GS} | ± 12 | | | |
| Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a | I_D | $T_A = 25^\circ\text{C}$ | -1.0 | -0.88 | A |
| | | $T_A = 85^\circ\text{C}$ | -0.72 | -0.63 | |
| Pulsed Drain Current | I_{DM} | -3 | | | |
| Continuous Diode Current (Diode Conduction) ^a | I_S | -0.61 | -0.48 | | |
| Maximum Power Dissipation ^a | P_D | $T_A = 25^\circ\text{C}$ | 0.74 | 0.57 | W |
| | | $T_A = 85^\circ\text{C}$ | 0.38 | 0.30 | |
| Operating Junction and Storage Temperature Range | T_J, T_{stg} | -55 to 150 | | $^\circ\text{C}$ | |

THERMAL RESISTANCE RATINGS

| Parameter | Symbol | Typical | Maximum | Unit | |
|--|------------|----------------|---------|------|--------------------|
| Maximum Junction-to-Ambient ^a | R_{thJA} | $t \leq 5$ sec | 130 | 170 | $^\circ\text{C/W}$ |
| | | Steady State | 170 | 220 | |
| Maximum Junction-to-Foot (Drain) | R_{thJF} | 80 | 100 | | |

Notes

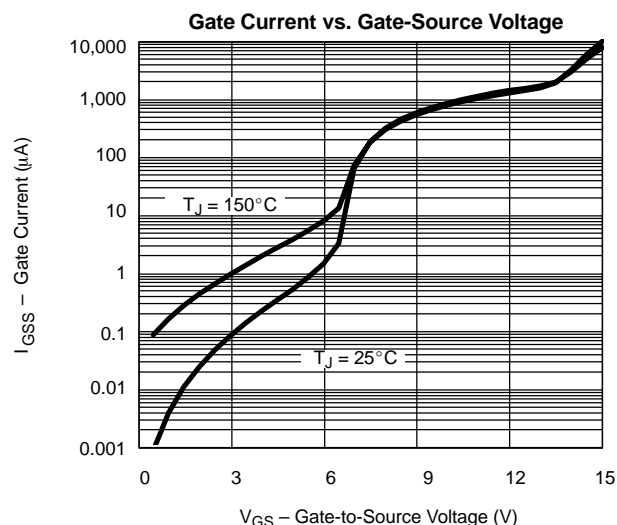
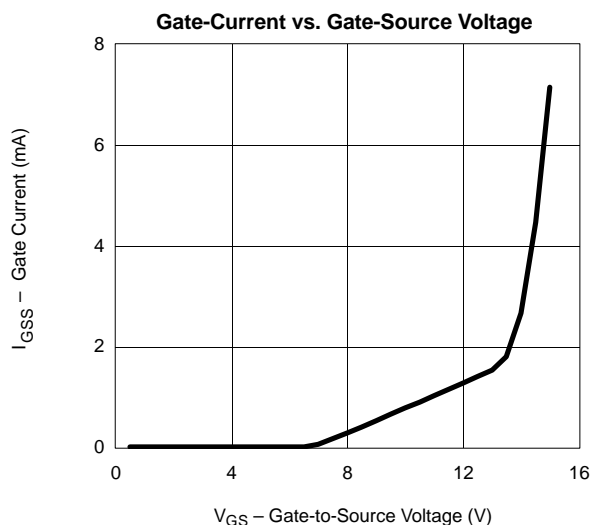
a. Surface Mounted on 1" x 1" FR4 Board.

SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|---|--------------|---|-------|-------|-----------|---------------|
| Static | | | | | | |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = -100 \mu\text{A}$ | -0.45 | | | V |
| Gate-Body Leakage | I_{GSS} | $V_{DS} = 0 \text{ V}, V_{GS} = \pm 4.5 \text{ V}$ | | | ± 1.5 | μA |
| | | $V_{DS} = 0 \text{ V}, V_{GS} = \pm 12 \text{ V}$ | | | ± 10 | mA |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS} = -16 \text{ V}, V_{GS} = 0 \text{ V}$ | | | -1 | μA |
| | | $V_{DS} = -16 \text{ V}, V_{GS} = 0 \text{ V}, T_J = 85^\circ\text{C}$ | | | -5 | |
| On-State Drain Current ^a | $I_{D(on)}$ | $V_{DS} = -5 \text{ V}, V_{GS} = -4.5 \text{ V}$ | -2 | | | A |
| Drain-Source On-State Resistance ^a | $r_{DS(on)}$ | $V_{GS} = -4.5 \text{ V}, I_D = -0.88 \text{ A}$ | | 0.400 | 0.490 | Ω |
| | | $V_{GS} = -2.5 \text{ V}, I_D = -0.71 \text{ A}$ | | 0.610 | 0.750 | |
| | | $V_{GS} = -1.8 \text{ V}, I_D = -0.2 \text{ A}$ | | 0.850 | 1.10 | |
| Forward Transconductance ^a | g_{fs} | $V_{DS} = -10 \text{ V}, I_D = -0.88 \text{ A}$ | | 1.5 | | S |
| Diode Forward Voltage ^a | V_{SD} | $I_S = -0.47 \text{ A}, V_{GS} = 0 \text{ V}$ | | -0.85 | -1.2 | V |
| Dynamic^b | | | | | | |
| Total Gate Charge | Q_g | $V_{DS} = -10 \text{ V}, V_{GS} = -4.5 \text{ V}, I_D = -0.88 \text{ A}$ | | 1.2 | 1.8 | nC |
| Gate-Source Charge | Q_{gs} | | | 0.3 | | |
| Gate-Drain Charge | Q_{gd} | | | 0.3 | | |
| Turn-On Delay Time | $t_{d(on)}$ | $V_{DD} = -10 \text{ V}, R_L = 20 \Omega$ $I_D \cong -0.5 \text{ A}, V_{GEN} = -4.5 \text{ V}, R_G = 6 \Omega$ | | 0.150 | 0.23 | μs |
| Rise Time | t_r | | | 0.480 | 0.72 | |
| Turn-Off Delay Time | $t_{d(off)}$ | | | 0.840 | 1.2 | |
| Fall Time | t_f | | | 0.850 | 1.2 | |

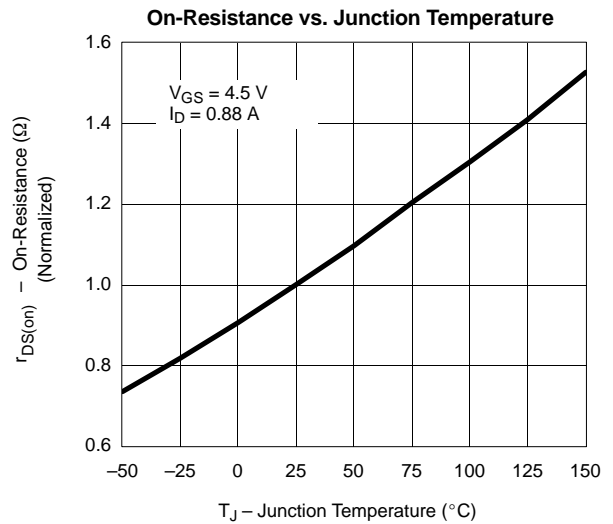
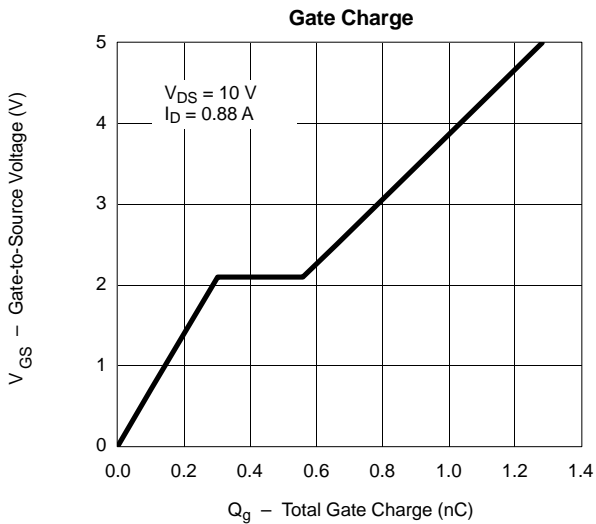
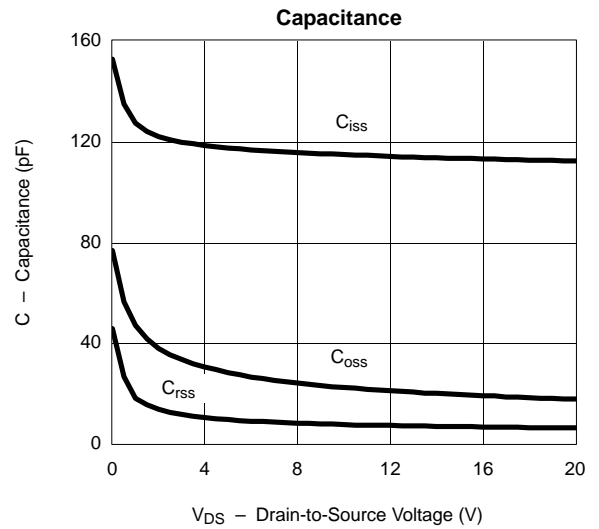
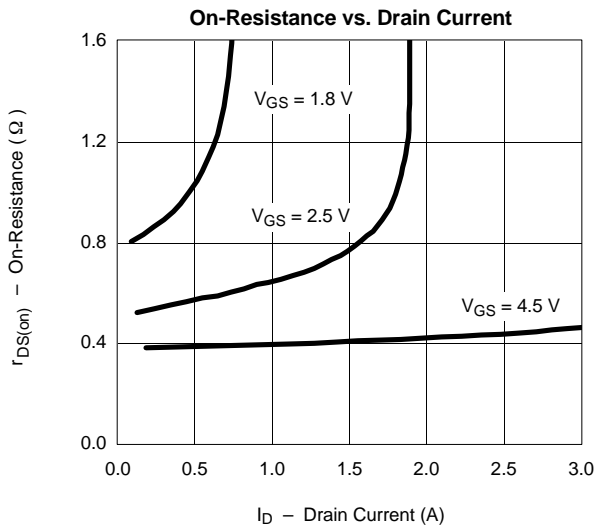
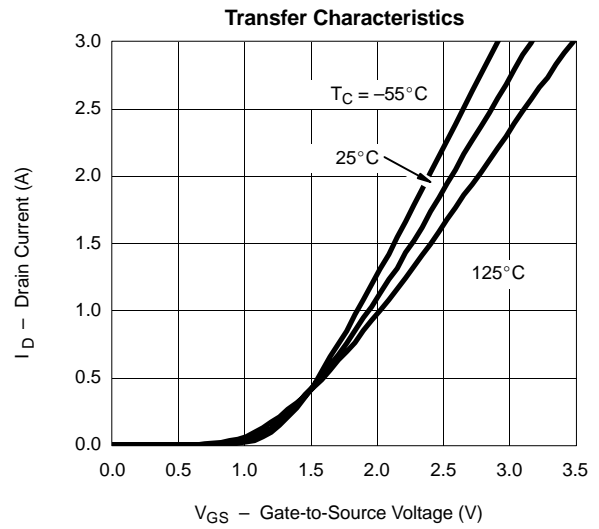
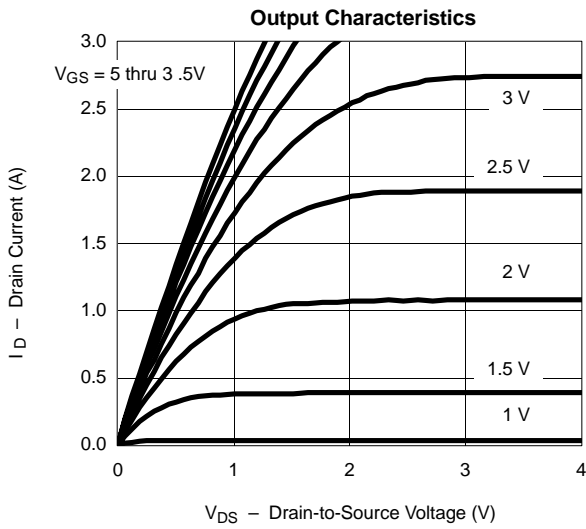
Notes

- a. Pulse test; pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$.
b. Guaranteed by design, not subject to production testing.

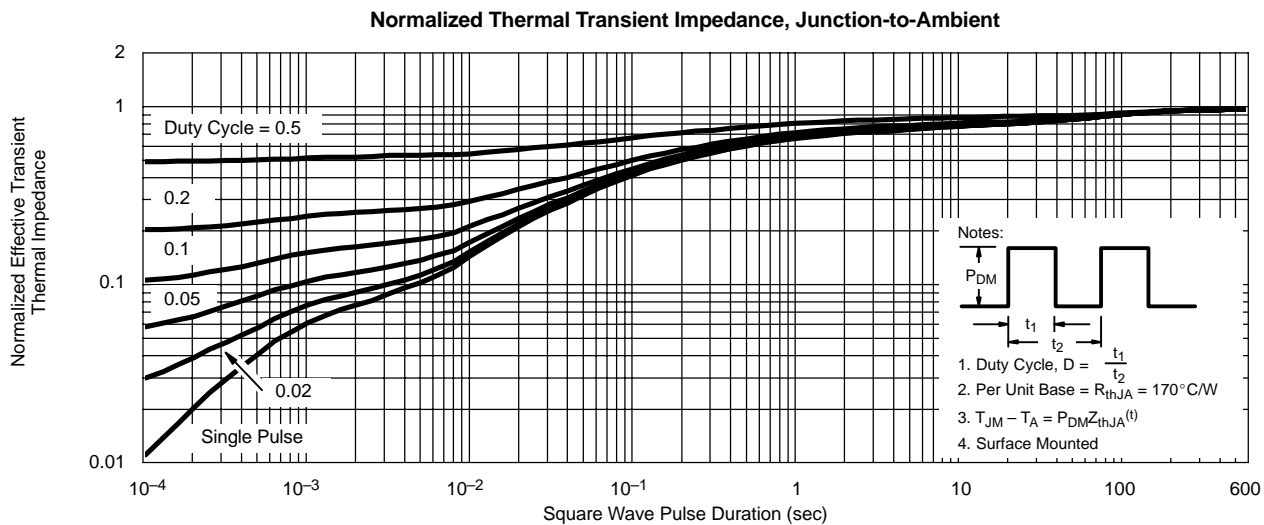
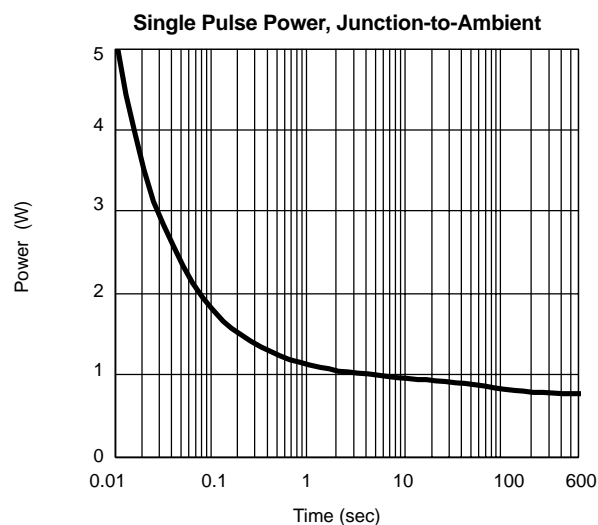
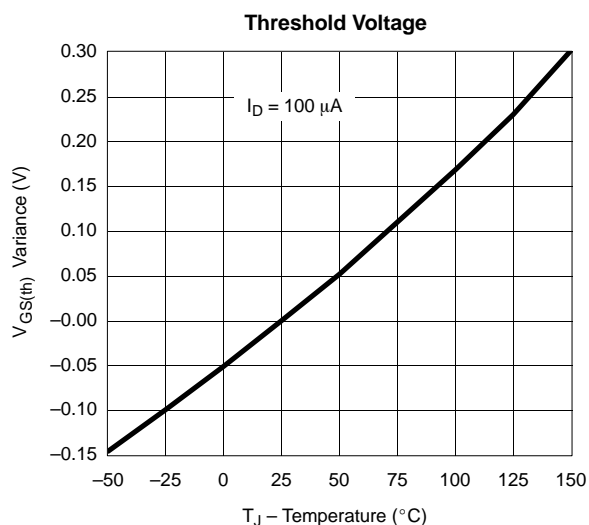
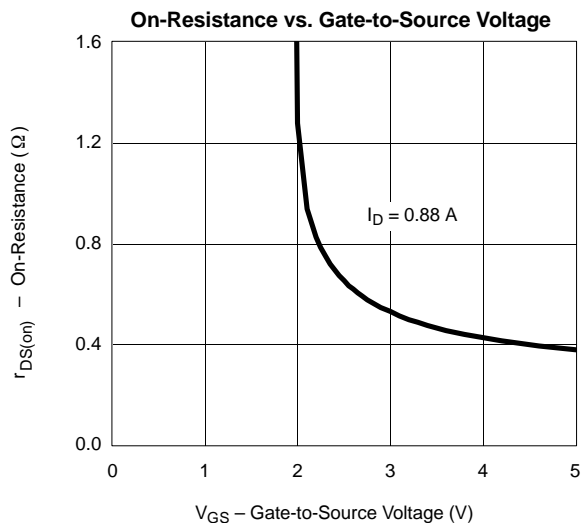
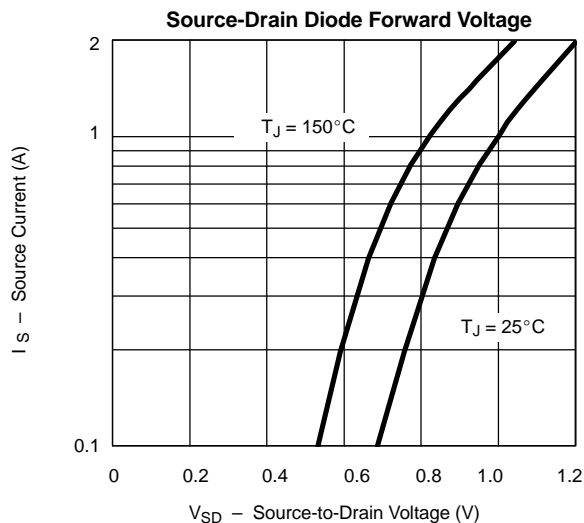
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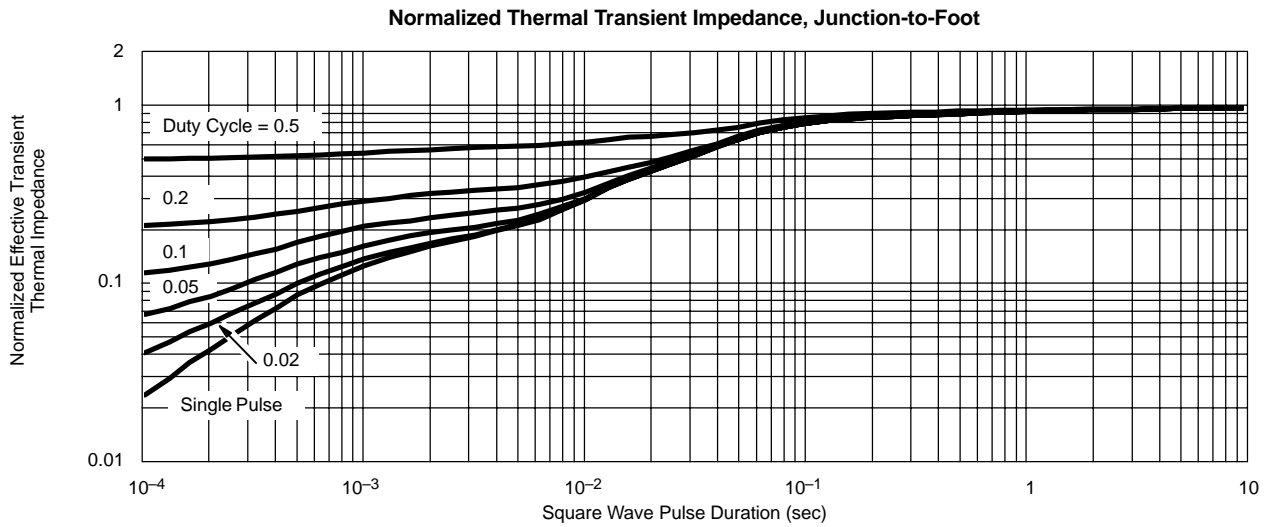


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