



Main Product Characteristics:

Features and

Thermal Resistance

| Symbol | Characterizes | Typ. | Max. | Units |
|--------|------------------|------|------|-------|
| R | Junction-to-case | | 100 | /W |

Electrical Characterizes @ $T_A=25$ unless otherwise specified

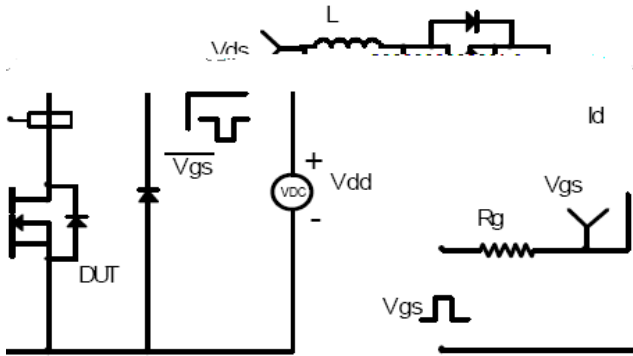
| Symbol | Parameter | Min. | Typ. | Max. | Units | Conditions |
|---------------|--------------------------------------|------|------|------|-------|---|
| $V_{(BR)DSS}$ | Drain-to-Source breakdown voltage | -20 | | | V | $V_{GS} = 0V, I_D = -$ |
| $R_{DS(on)}$ | Static Drain-to-Source on-resistance | | 62 | 75 | m | $V_{GS}=-4.5V, I_D =-2A$ |
| | | | 77 | 95 | m | $V_{GS}=-2.5V, I_D =-1.8A$ |
| $V_{GS(th)}$ | Gate threshold voltage | -0.4 | | -1 | V | $V_{DS} = V_{GS}, I_D =-$ |
| I_{DSS} | Drain-to-Source leakage current | | | -1 | | $V_{DS} = -20V, V_{GS} = 0V$ |
| I_{GSS} | Gate-to-Source forward leakage | | | 100 | nA | $V_{GS} = 12V$ |
| | | | | -100 | | $V_{GS} = -12V$ |
| Q_g | Total gate charge | | 5.8 | | nC | $I_D = -2.3A,$ $V_{DS}=-6V,$ $V_{GS} = -4.5V$ |
| Q_{gs} | Gate-to-Source charge | | 0.8 | | | |
| Q_{gd} | Gate-to-Drain("Miller") charge | | 1.6 | | | |
| $t_{d(on)}$ | Turn-on delay time | | 7 | | ns | $V_{GS}=-4.5V, V_{DD}=-20V,$ $R_{GEN}=3$ $R_L=10$ |
| t_r | Rise time | | 14 | | | |
| $t_{d(off)}$ | Turn-Off delay time | | 20 | | | |
| t_f | Fall time | | 7 | | | |
| C_{iss} | Input capacitance | | 400 | | pF | $V_{GS} = 0V$ |
| C_{oss} | Output capacitance | | 55 | | | $V_{DS} = -20V$ |
| C_{riss} | Reverse transfer capacitance | | 45 | | | 1MHz |

Source-Drain Ratings and Characteristics

| Symbol | Parameter | Min. | Typ. | Max. | Units | Conditions |
|----------|---|------|------|------|-------|---|
| I_S | Continuous Source Current (Body Diode) | | | -2.6 | A | MOSFET symbol showing the integral reverse p-n junction diode. |
| I_{SM} | Pulsed Source Current (Body Diode) | | | -10 | A | |
| V_{SD} | Diode Forward Voltage | | -0.8 | -1.2 | V | |

Test Circuits and Waveforms

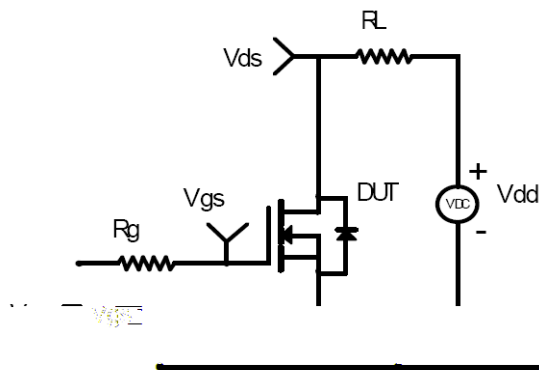
EAS Test Circuit:



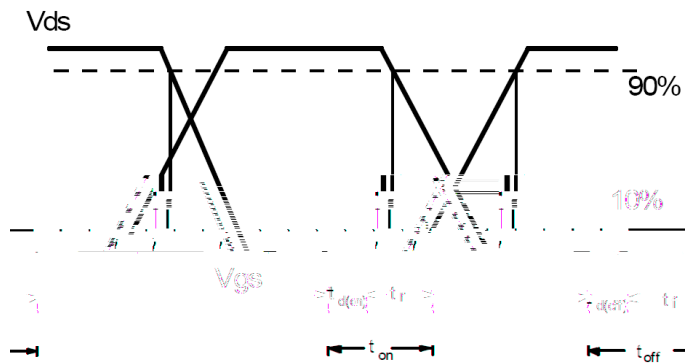
Gate Charge Test Circuit:



Switching Time Test Circuit:



Switching Waveforms:



Notes:

Calculated continuous current based on maximum allowable junction temperature.

Repetitive rating; pulse width limited by max. junction temperature.

The power dissipation PD is based on max. junction temperature, using junction-to-case thermal resistance.

Typical Electrical and Thermal Characteristics

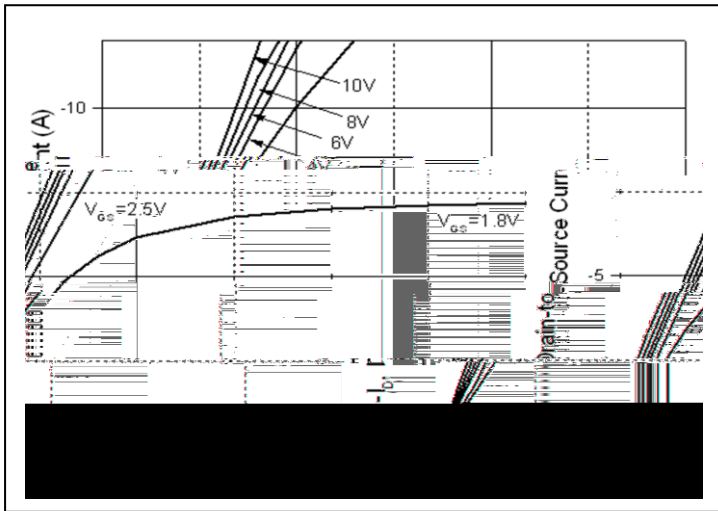


Figure1. Typical Output Characteristics

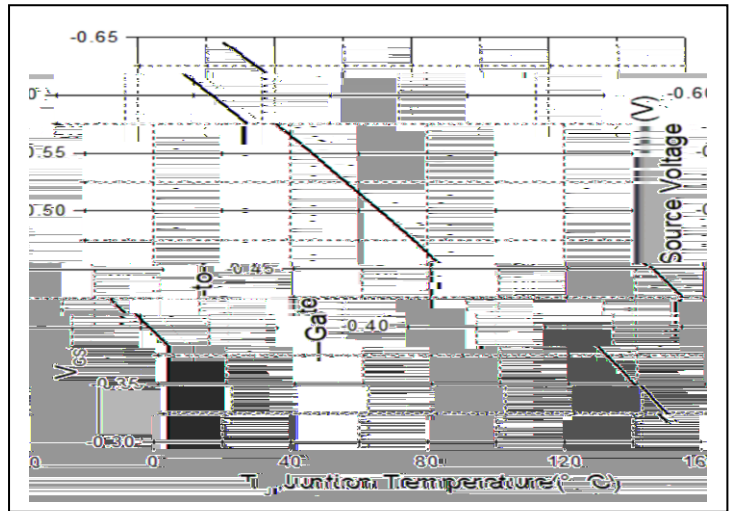


Figure2. Vth vs. Junction Temperature

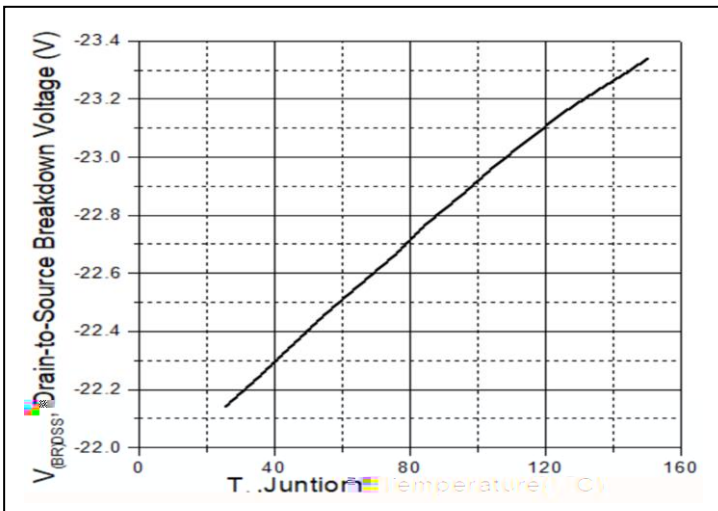


Figure3. Drain-to-Source Breakdown Voltage vs. Junction Temperature

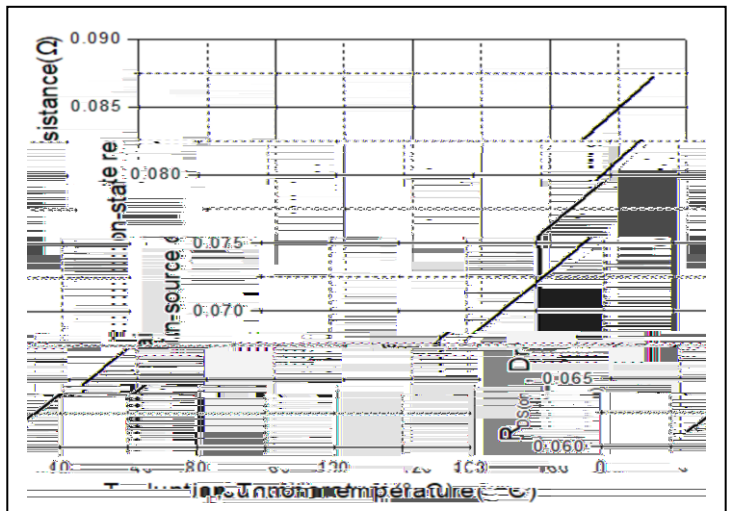


Figure4. RDS(on) vs. Drain Current

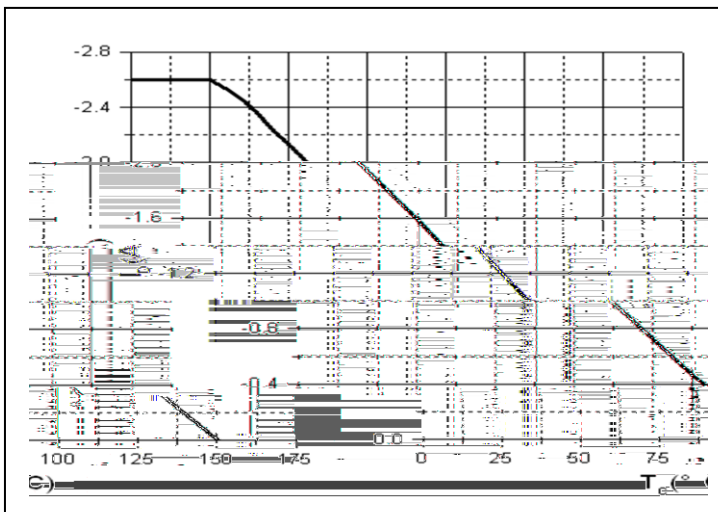


Figure5. Drain Current vs. Case Temperature

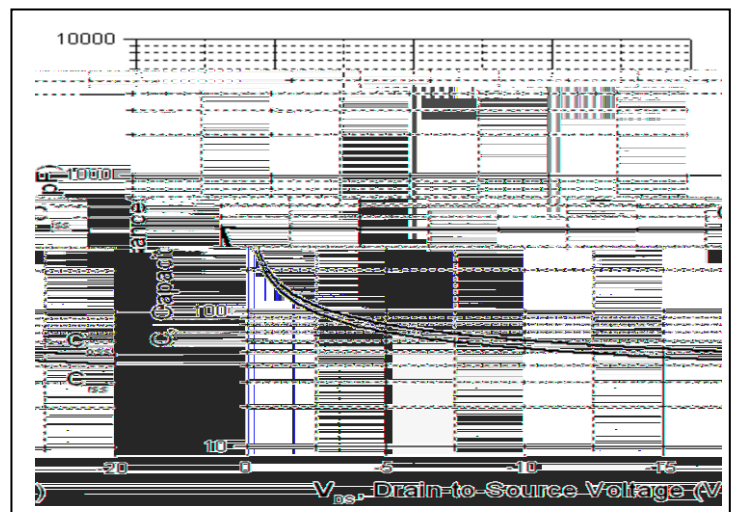
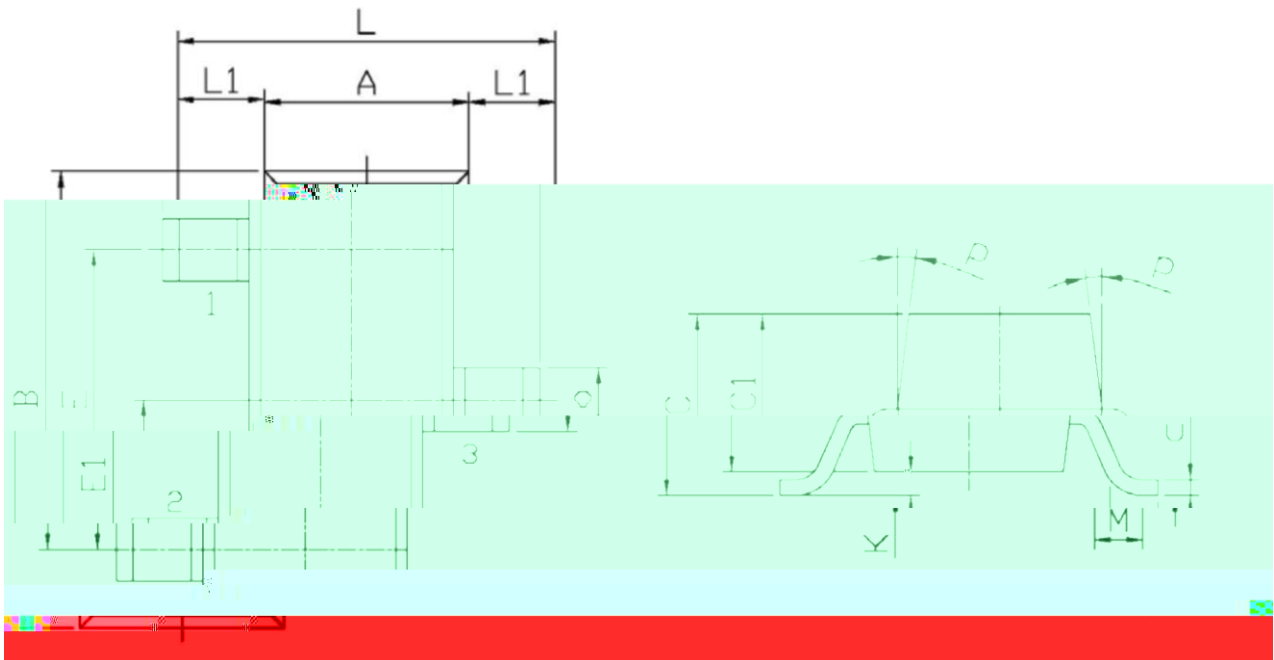


Figure6. Capacitance

Mechanical Data

SOT-23 Package Outline(Unit:mm)



| Symbol | Dimensions In Millimeters | | Symbol | Dimensions In Millimeters | |
|--------|---------------------------|------|--------|---------------------------|------|
| | Min | Max | | Min | Max |
| L | 2.2 | 2.7 | C | 1.30Max | |
| L1 | 0.45 | 0.65 | C1 | 0.90 | 1.20 |
| A | 1.15 | 1.35 | M | 0.05 | 0.20 |

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