

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Value | Unit |
|---|------------------|-------|------|
| Drain-Source Voltage | V _{DSS} | -50 | V |
| Drain-Gate Voltage R _{GS} ≤ 20kΩ | V _{DGR} | -50 | V |
| Gate-Source Voltage | V _{GSS} | ±20 | V |
| Drain Current (Note 5) | I _D | -130 | mA |
| Pulsed Drain Current | I _{DM} | -1.2 | A |

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Total Power Dissipation (Note 5) | P _D | 300 | mW |
| Thermal Resistance, Junction to Ambient | R _{θJA} | 417 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | °C |

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|---|---------------------|------|------|------|------|--|
| OFF CHARACTERISTICS (Note 6) | | | | | | |
| Drain-Source Breakdown Voltage | BV _{DSS} | -50 | — | — | V | V _{GS} = 0V, I _D = -250μA |
| Zero Gate Voltage Drain Current | I _{DSS} | — | — | -1 | μA | V _{DS} = -50V, V _{GS} = 0V, T _J = +25°C |
| | | — | — | -2 | μA | V _{DS} = -50V, V _{GS} = 0V, T _J = +125°C |
| | | — | — | -100 | nA | V _{DS} = -25V, V _{GS} = 0V, T _J = +25°C |
| Gate-Body Leakage | I _{GSS} | — | — | ±10 | nA | V _{GS} = ±20V, V _{DS} = 0V |
| ON CHARACTERISTICS (Note 6) | | | | | | |
| Gate Threshold Voltage | V _{GS(TH)} | -0.8 | — | -2.0 | V | V _{DS} = V _{GS} , I _D = -1mA |
| Static Drain-Source On-Resistance | R _{DS(ON)} | — | — | 10 | Ω | V _{GS} = -5V, I _D = -0.100A |
| Forward Transconductance | g _{FS} | 0.05 | — | — | S | V _{DS} = -25V, I _D = -0.1A |
| DYNAMIC CHARACTERISTICS (Note 7) | | | | | | |
| Input Capacitance | C _{iss} | — | 24.6 | 45 | pF | V _{DS} = -25V, V _{GS} = 0V, f = 1.0MHz |
| Output Capacitance | C _{oss} | — | 4.7 | 25 | pF | |
| Reverse Transfer Capacitance | C _{rss} | — | 2.8 | 12 | pF | |
| Gate Resistance | R _g | — | 916 | — | Ω | V _{DS} = 0V, V _{GS} = 0V, f = 1MHz |
| Total Gate Charge (V _{GS} = -4.5V) | Q _g | — | 0.28 | — | nC | V _{DS} = -10V, I _D = -0.1A |
| Total Gate Charge (V _{GS} = -10V) | Q _g | — | 0.59 | — | nC | |
| Gate-Source Charge | Q _{gs} | — | 0.09 | — | nC | |
| Gate-Drain Charge | Q _{gd} | — | 0.08 | — | nC | |
| Turn-On Delay Time | t _{D(ON)} | — | 10 | — | ns | V _{DD} = -30V, I _D = -0.27A, R _{GEN} = 50Ω, V _{GS} = -10V |
| Turn-Off Delay Time | t _{D(OFF)} | — | 18 | — | ns | |

- Notes:
- Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown in Diodes Incorporated's package outline PDFs, which can be found on our website at <http://www.diodes.com/package-outlines.html>.
 - Short duration pulse test used to minimize self-heating effect.
 - Guaranteed by design. Not subject to production testing.

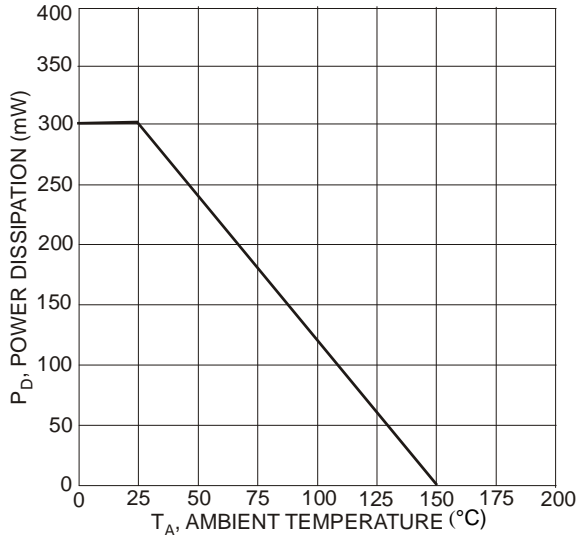


Fig. 1 Max Power Dissipation vs. Ambient Temperature

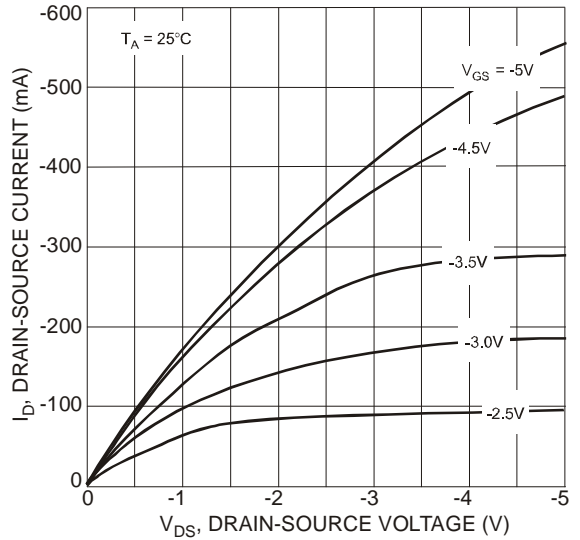


Fig. 2 Drain-Source Current vs. Drain-Source Voltage

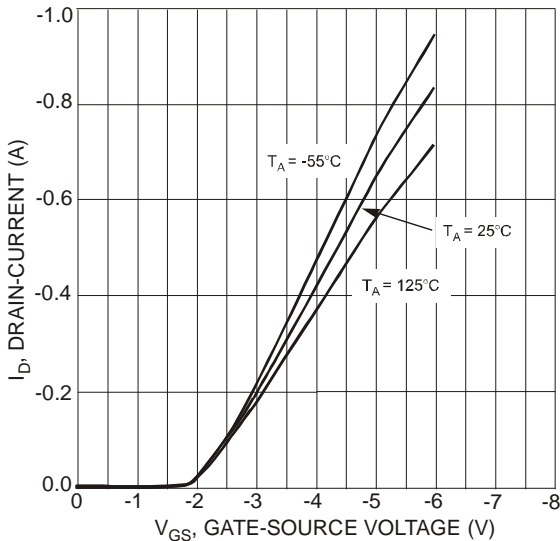


Fig. 3 Drain-Current vs. Gate-Source Voltage

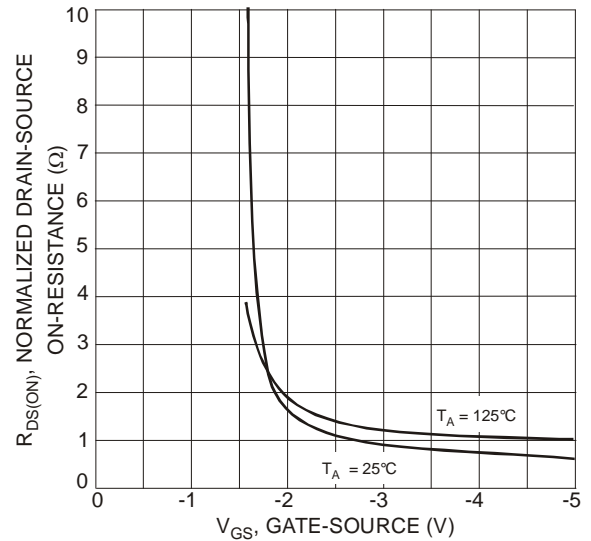


Fig. 4 On-Resistance vs. Gate-Source Voltage

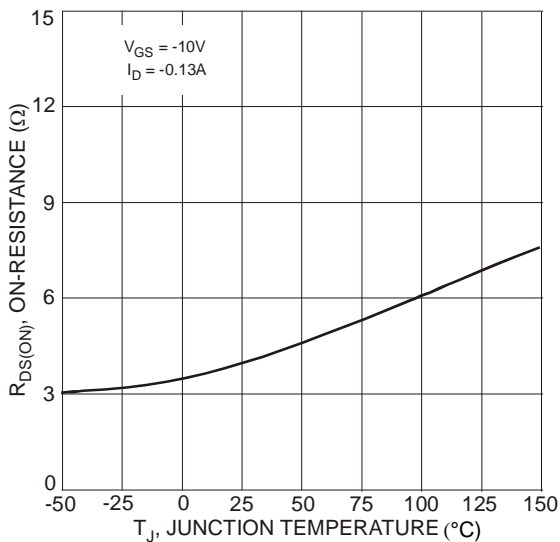


Fig. 5 On-Resistance vs. Junction Temperature

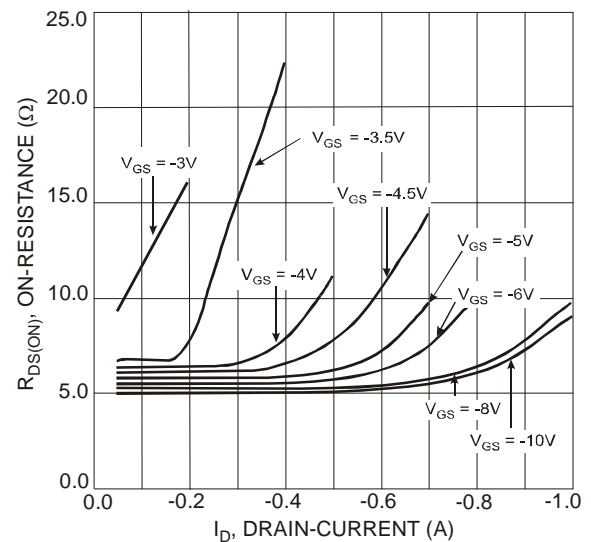


Fig. 6 On-Resistance vs. Drain-Current

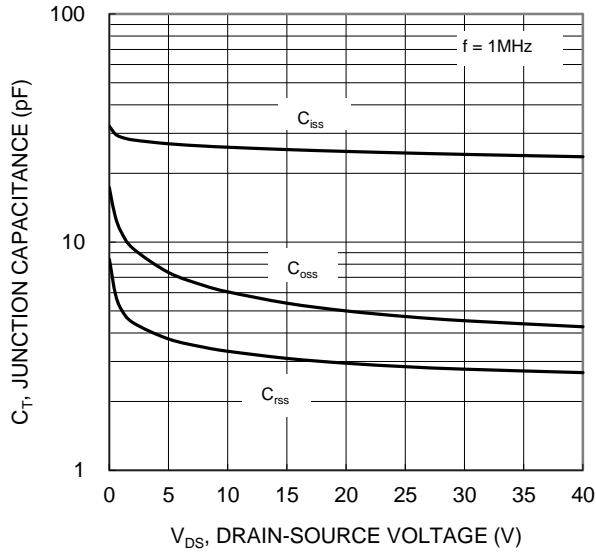


Fig. 7 Typical Junction Capacitance

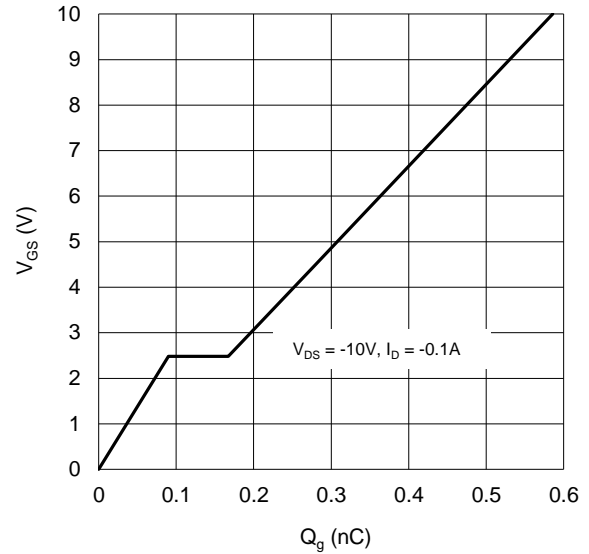


Fig. 8 Gate Charge

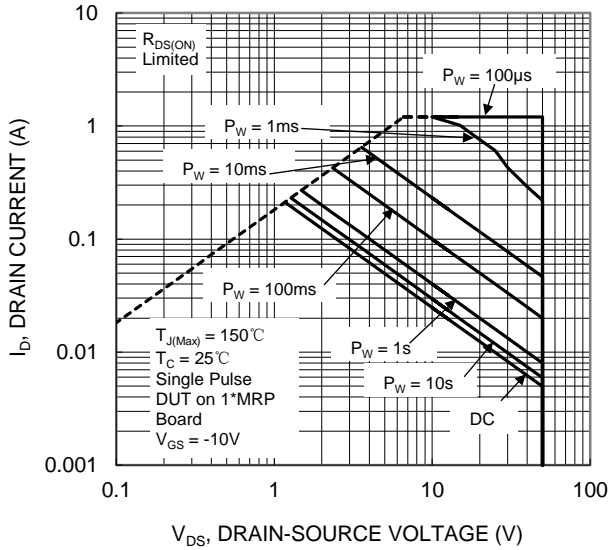
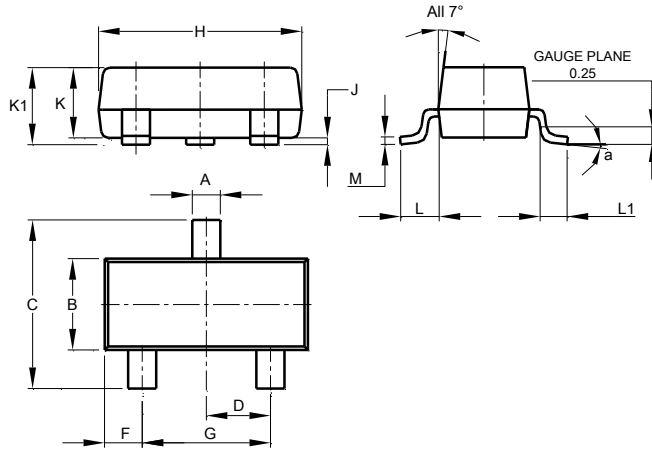


Fig. 9 SOA, Safe Operation Area

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT23

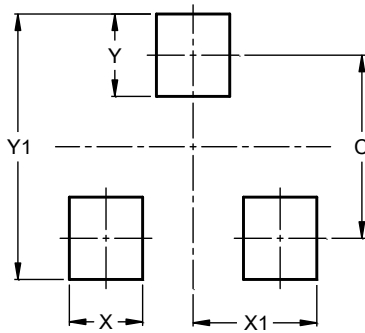


| SOT23 | | | |
|----------------------|-------|-------|-------|
| Dim | Min | Max | Typ |
| A | 0.37 | 0.51 | 0.40 |
| B | 1.20 | 1.40 | 1.30 |
| C | 2.30 | 2.50 | 2.40 |
| D | 0.89 | 1.03 | 0.915 |
| F | 0.45 | 0.60 | 0.535 |
| G | 1.78 | 2.05 | 1.83 |
| H | 2.80 | 3.00 | 2.90 |
| J | 0.013 | 0.10 | 0.05 |
| K | 0.890 | 1.00 | 0.975 |
| K1 | 0.903 | 1.10 | 1.025 |
| L | 0.45 | 0.61 | 0.55 |
| L1 | 0.25 | 0.55 | 0.40 |
| M | 0.085 | 0.150 | 0.110 |
| a | 0° | 8° | -- |
| All Dimensions in mm | | | |

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOT23



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 2.0 |
| X | 0.8 |
| X1 | 1.35 |
| Y | 0.9 |
| Y1 | 2.9 |

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