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

| Characteristic | | Symbol | Value | Units |
|---|---|---|---|---|
| Drain-Source Voltage | | $V_{DSS}$ | 60 | V |
| Gate-Source Voltage | | $V_{GSS}$ | ±20 | V |
| Drain Current (Note 5) | Continuous<br>Pulsed (Note 6) | $I_D$ | 300<br>800 | mA |

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

| Characteristic | Symbol | Value | Units |
|---|---|---|---|
| Total Power Dissipation (Note 5) | $P_D$ | 200 | mW |
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 625 | °C/W |
| Operating and Storage Temperature Range | $T_J$, $T_{STG}$ | -65 to +150 | °C |

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

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|---|---|---|---|---|---|---|
| **OFF CHARACTERISTICS (Note 7)** | | | | | | |
| Drain-Source Breakdown Voltage | $BV_{DSS}$ | 60 | — | — | V | $V_{GS}$ = 0V, $I_D$ = 10μA |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | — | — | 1.0 | μA | $V_{DS}$ = 60V, $V_{GS}$ = 0V |
| Gate-Source Leakage | $I_{GSS}$ | — | — | ±10 | μA | $V_{GS}$ = ±20V, $V_{DS}$ = 0V |
| **ON CHARACTERISTICS (Note 7)** | | | | | | |
| Gate Threshold Voltage | $V_{GS(th)}$ | 1.0 | 1.6 | 2.5 | V | $V_{DS}$ = 10V, $I_D$ = 1mA |
| Static Drain-Source On-Resistance | $R_{DS(ON)}$ | —<br>— | —<br>— | 2.0<br>3.0 | Ω | $V_{GS}$ = 10V, $I_D$ = 0.5A<br>$V_{GS}$ = 4.5V, $I_D$ = 0.2A |
| Forward Transfer Admittance | $\|Y_{fs}\|$ | 80 | — | — | ms | $V_{DS}$ = 10V, $I_D$ = 0.2A |
| **DYNAMIC CHARACTERISTICS (Note 8)** | | | | | | |
| Input Capacitance | $C_{iss}$ | — | — | 50 | pF | $V_{DS}$ = 25V, $V_{GS}$ = 0V, f = 1.0MHz |
| Output Capacitance | $C_{oss}$ | — | — | 25 | pF | |
| Reverse Transfer Capacitance | $C_{rss}$ | — | — | 5.0 | pF | |

Notes:
5. Device mounted on FR-4 PCB.
6. Pulse width ≤10μS, Duty Cycle ≤1%.
7. Short duration pulse test used to minimize self-heating effect.
8. Guaranteed by design. Not subject to production testing.

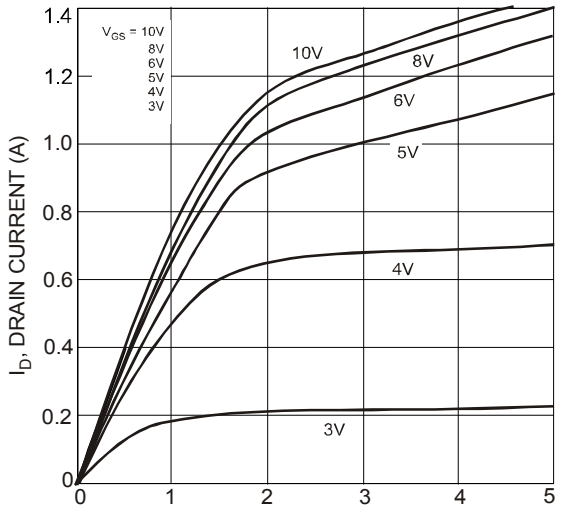



Fig. 1 Typical Output Characteristics

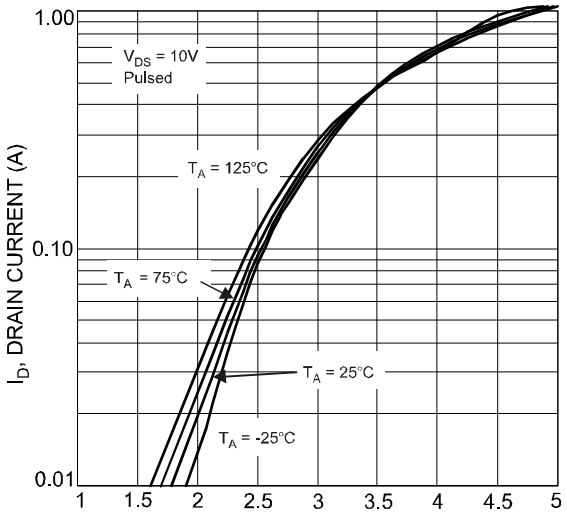



Fig. 2 Typical Transfer Characteristics

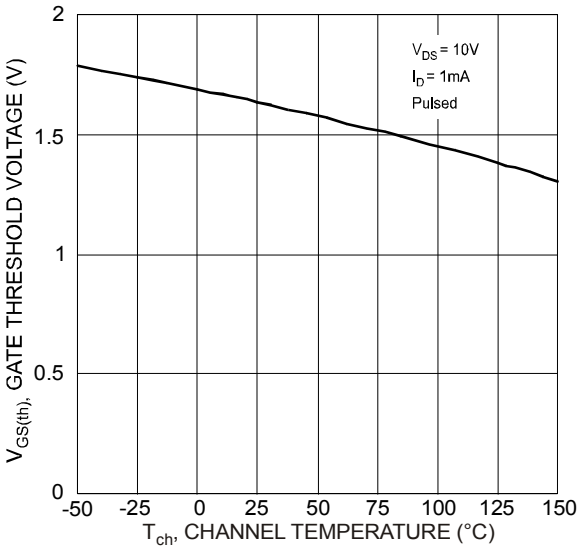



Fig. 3 Gate Threshold Voltage vs. Channel Temperature

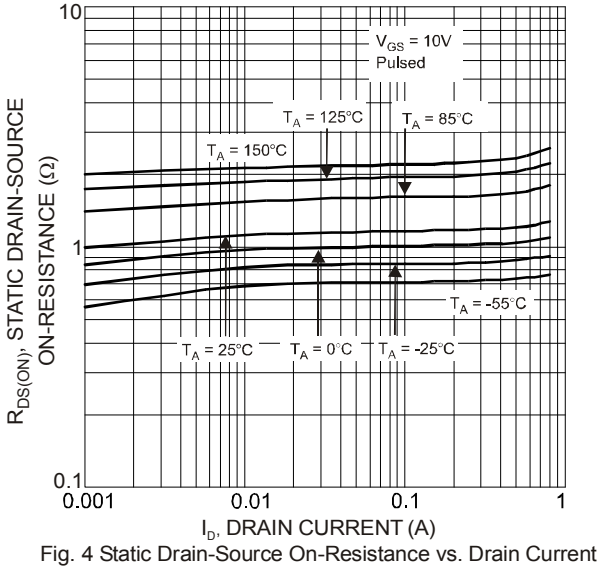



Fig. 4 Static Drain-Source On-Resistance vs. Drain Current

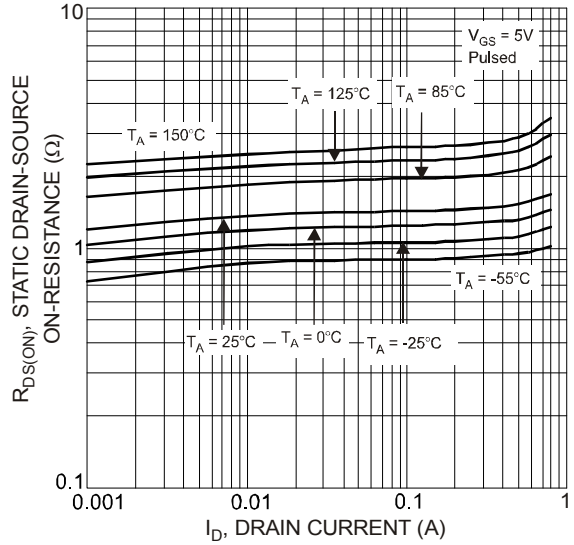



Fig. 5 Static Drain-Source On-Resistance vs. Drain Current

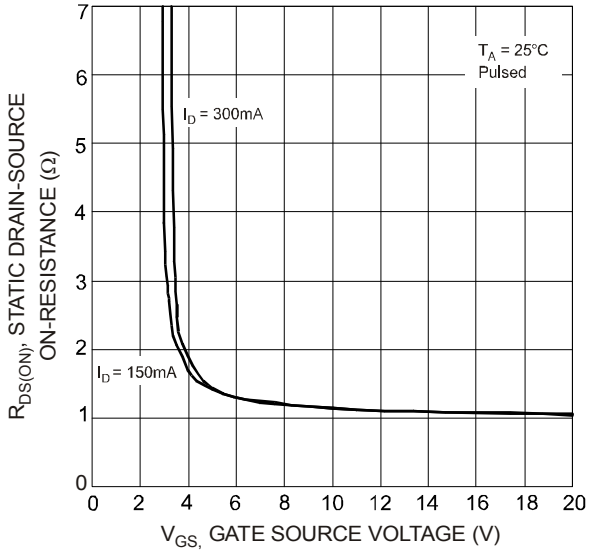



Fig. 6 Static Drain-Source On-Resistance vs. Gate-Source Voltage

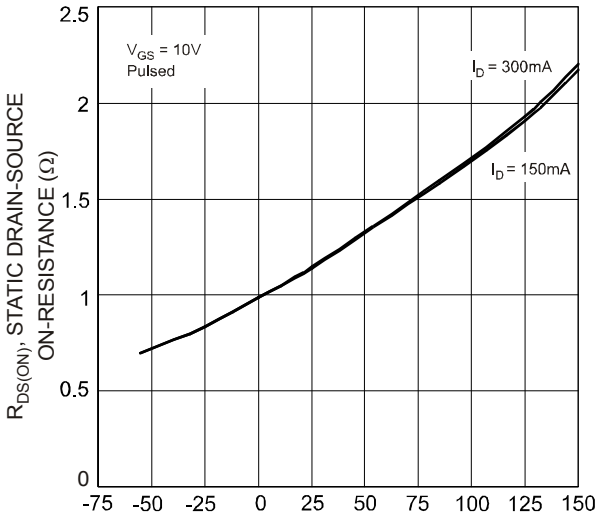



Fig. 7 Static Drain-Source On-State Resistance vs. Channel Temperature

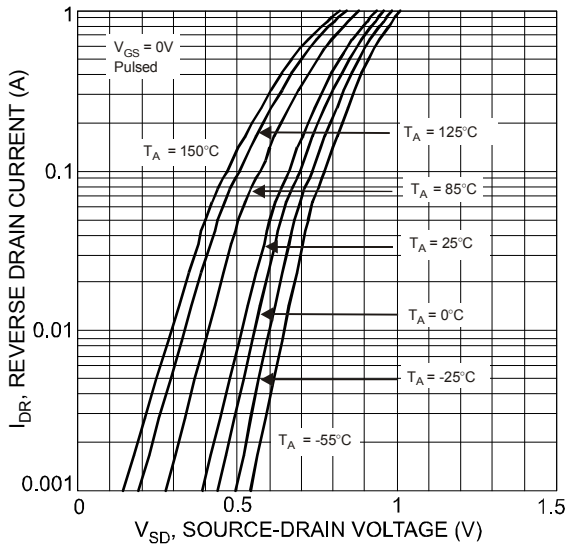



Fig. 8 Reverse Drain Current vs. Source-Drain Voltage

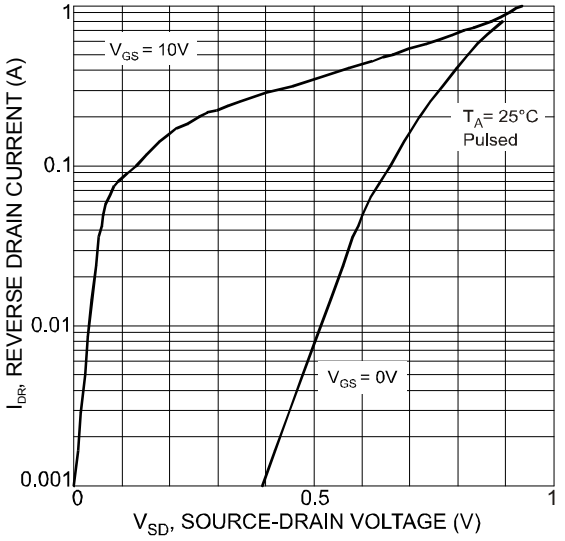



Fig. 9 Reverse Drain Current vs. Source-Drain Voltage

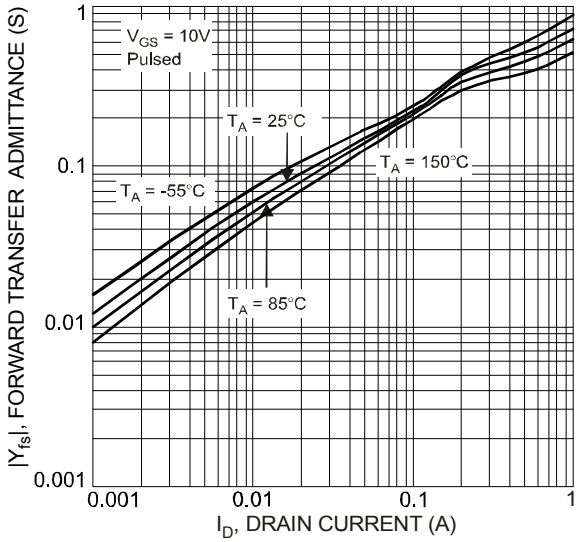
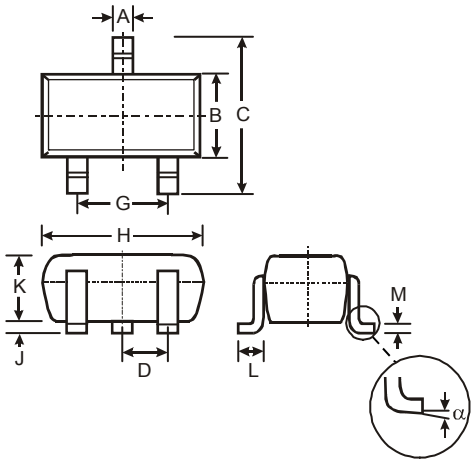



Fig.10 Forward Transfer Admittance vs. Drain Current

## Package Outline Dimensions

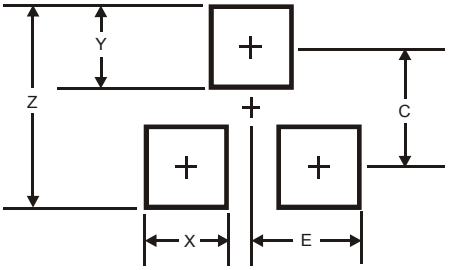
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.




| SOT323 | | | |
|---|---|---|---|
| **Dim** | **Min** | **Max** | **Typ** |
| **A** | 0.25 | 0.40 | 0.30 |
| **B** | 1.15 | 1.35 | 1.30 |
| **C** | 2.00 | 2.20 | 2.10 |
| **D** | - | - | 0.65 |
| **G** | 1.20 | 1.40 | 1.30 |
| **H** | 1.80 | 2.20 | 2.15 |
| **J** | 0.0 | 0.10 | 0.05 |
| **K** | 0.90 | 1.00 | 1.00 |
| **L** | 0.25 | 0.40 | 0.30 |
| **M** | 0.10 | 0.18 | 0.11 |
| **α** | 0° | 8° | - |
| **All Dimensions in mm** | | | |

## Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.




| Dimensions | Value (in mm) |
|---|---|
| Z | 2.8 |
| X | 0.7 |
| Y | 0.9 |
| C | 1.9 |
| E | 1.0 |