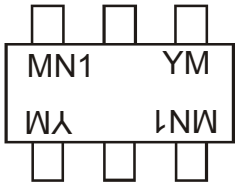
## Marking Information




MN1= Product Type Marking Code
YM = Date Code Marking
Y or $\overline{Y}$ = Year (ex: I = 2021)
M or $\overline{M}$ = Month (ex: 9 = September)

Date Code Key

| Year | 2007 | …… | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Code | U | …… | I | J | K | L | M | N | O | P | R | S |

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | O | N | D |

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

| Characteristic | | Symbol | Value | Units |
|---|---|---|---|---|
| Drain-Source Voltage | | $V_{DSS}$ | 60 | V |
| Gate-Source Voltage (Note 5) | Continuous | $V_{GSS}$ | ±20 | V |
| Drain Current (Note 5) | Continuous<br>Continuous @ +100°C<br>Pulsed | $I_D$ | 115<br>73<br>800 | mA |

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

| Characteristic | Symbol | Value | Units |
|---|---|---|---|
| Total Power Dissipation<br>Derating above $T_A$ = +25°C (Note 5) | $P_D$ | 250<br>1.6 | mW<br>mW/°C |
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 500 | °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 | | $BV_{DSS}$ | 60 | 70 | — | V | $V_{GS}$ = 0V, $I_D$ = 10μA |
| Zero Gate Voltage Drain Current | @ $T_C$ = +25°C<br>@ $T_C$ = +125°C | $I_{DSS}$ | — | — | 1.0<br>500 | μA | $V_{DS}$ = 60V, $V_{GS}$ = 0V |
| Gate-Body Leakage | | $I_{GSS}$ | — | — | ±5 | μA | $V_{GS}$ = ±20V, $V_{DS}$ = 0V |
| **ON CHARACTERISTICS (Note 6)** | | | | | | | |
| Gate Threshold Voltage | | $V_{GS(th)}$ | 1.2 | — | 2.0 | V | $V_{DS}$ = $V_{GS}$, $I_D$ = 250μA |
| Static Drain-Source On-Resistance | @ $T_J$ = +25°C | $R_{DS(on)}$ | — | 3.5 | 6 | Ω | $V_{GS}$ = 5V, $I_D$ = 0.115A |
| | @ $T_J$ = +125°C | | | 3.0 | 5 | | $V_{GS}$ = 10V, $I_D$ = 0.115A |
| Forward Transconductance | | $g_{FS}$ | 80 | — | — | mS | $V_{DS}$ = 10V, $I_D$ = 0.115A |
| Diode Forward Voltage | | $V_{SD}$ | — | 0.8 | 1.2 | V | $V_{GS}$ = 0V, $I_S$ = 115mA |
| **DYNAMIC CHARACTERISTICS (Note 7)** | | | | | | | |
| Input Capacitance | | $C_{iss}$ | — | 23 | — | pF | $V_{DS}$ = 25V, $V_{GS}$ = 0V, f = 1.0MHz |
| Output Capacitance | | $C_{oss}$ | — | 3.4 | — | pF | |
| Reverse Transfer Capacitance | | $C_{rss}$ | — | 1.4 | — | pF | |
| Turn-On Delay Time | | $t_{D(on)}$ | — | 10 | — | ns | $V_{DD}$ = 30V, $I_D$ = 0.115A, $R_L$ = 150Ω, $V_{GEN}$ = 10V, $R_{GEN}$ = 25Ω |
| Turn-Off Delay Time | | $t_{D(off)}$ | — | 33 | — | ns | |

Notes: 5. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on www.diodes.com/package-outlines.html
6. Short duration pulse test used to minimize self-heating effect.
7. Guaranteed by design. Not subject to product testing.

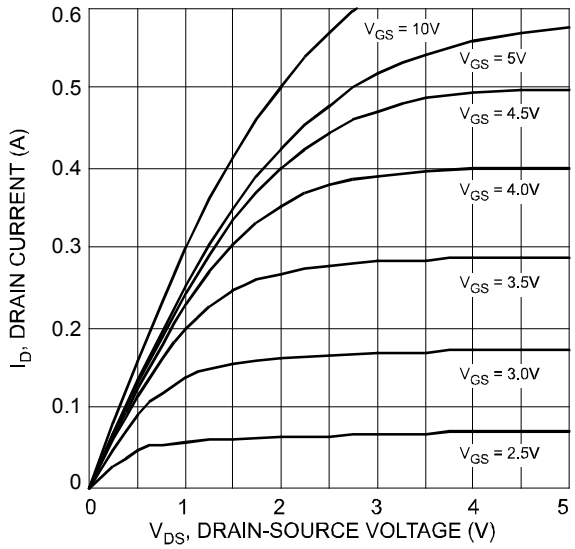



Fig.1 Typical Output Characteristic

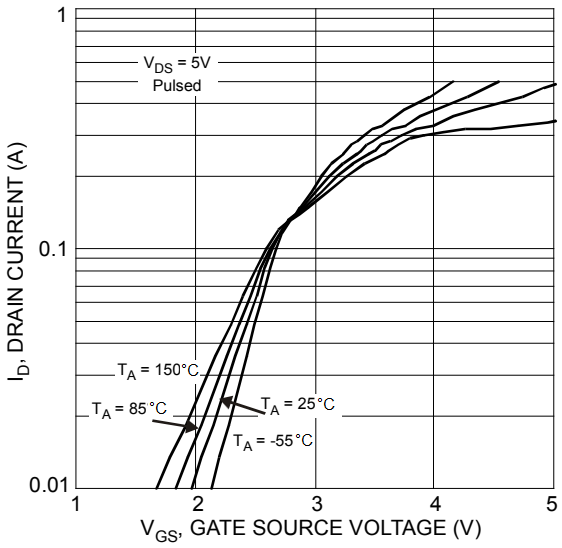



Fig. 2 Typical Transfer Characteristics

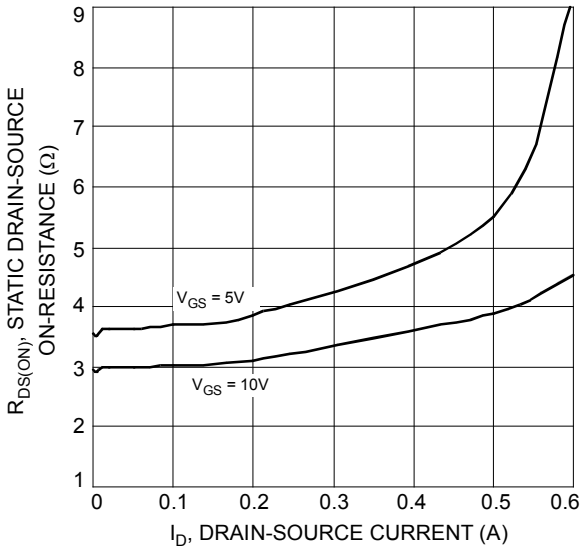



Fig. 3 On-Resistance vs. Drain Current & Gate Voltage

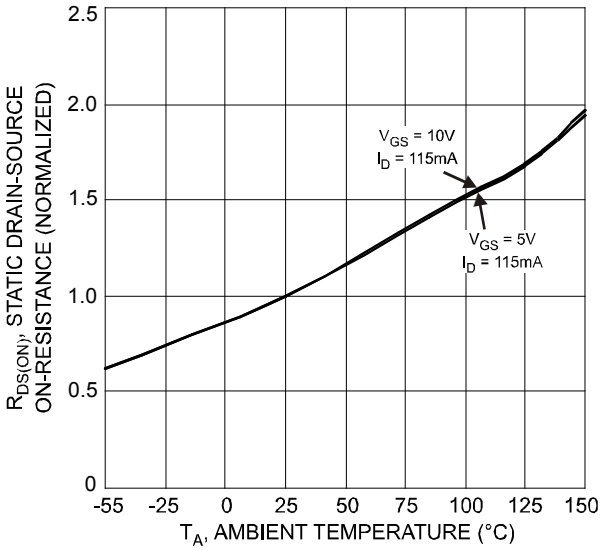



Fig. 4 Normalized Static Drain-Source On-Resistance vs. Ambient Temperature

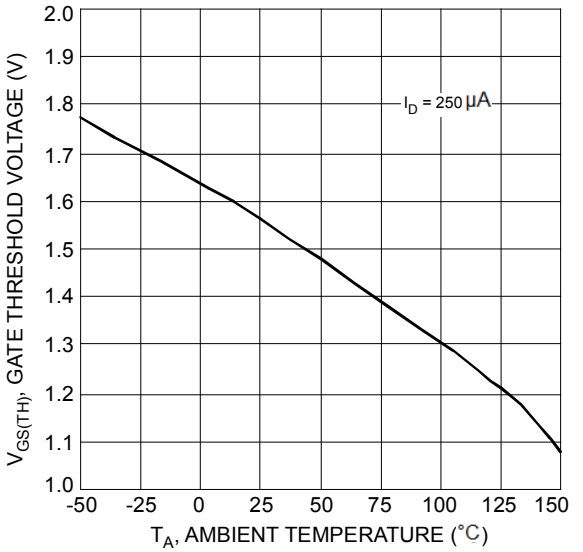



Fig. 5 Gate Threshold Variation vs. Ambient Temperature

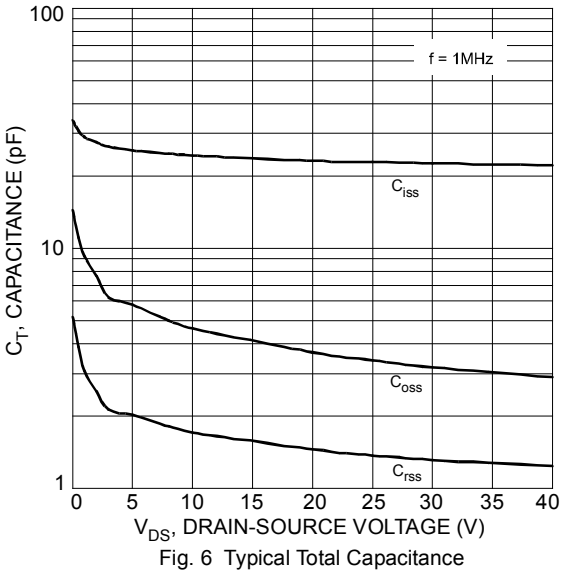



Fig. 6 Typical Total Capacitance

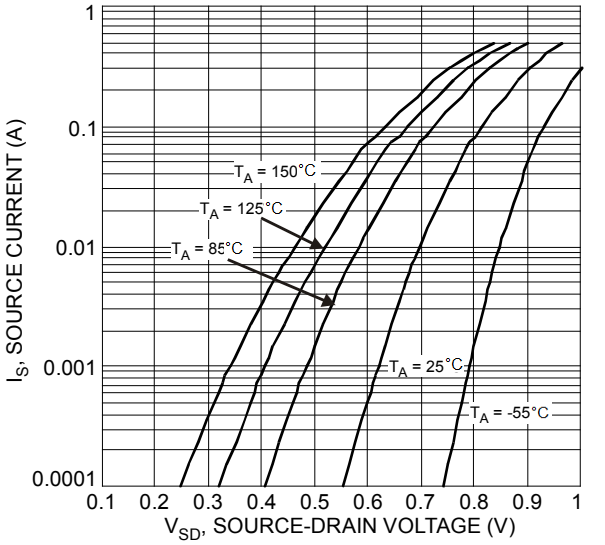
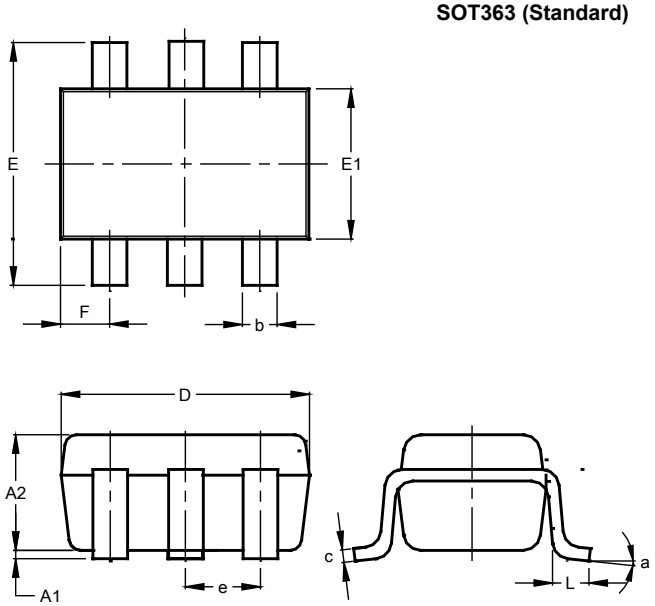



Fig. 7 Reverse Drain Current vs. Source-Drain Voltage

## Package Outline Dimensions

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

**SOT363 (Standard)**

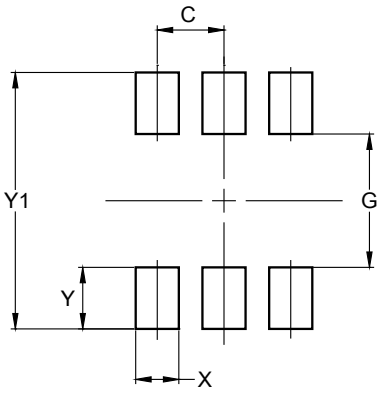



| SOT363 (Standard) | | | |
|---|---|---|---|
| **Dim** | **Min** | **Max** | **Typ** |
| **A1** | 0.00 | 0.10 | 0.05 |
| **A2** | 0.80 | 1.00 | 0.90 |
| **b** | 0.10 | 0.35 | 0.225 |
| **c** | 0.08 | 0.22 | 0.15 |
| **D** | 1.80 | 2.20 | 2.00 |
| **E** | 2.00 | 2.45 | 2.225 |
| **E1** | 1.15 | 1.35 | 1.25 |
| **e** | -- | -- | 0.65 |
| **F** | 0.25 | 0.45 | 0.35 |
| **L** | 0.25 | 0.46 | 0.355 |
| **a** | 0° | 8° | -- |
| **All Dimensions in mm** | | | |

## Suggested Pad Layout

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

**SOT363 (Standard)**




| Dimensions | Value (in mm) |
|---|---|
| **C** | 0.650 |
| **G** | 1.300 |
| **X** | 0.420 |
| **Y** | 0.600 |
| **Y1** | 2.500 |

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