

Features

- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Small Surface Mount Package
- ESD Protected Gate, 1KV (HBM)
- **Totally Lead-Free & Fully RoHS compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. “Green” Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: SOT-523
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208e3
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Terminal Connections: See Diagram
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.002 grams (approximate)

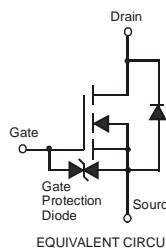


ESD PROTECTED, 1KV

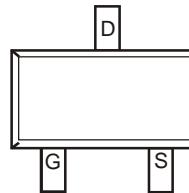


TOP VIEW

SOT-523



EQUIVALENT CIRCUIT



TOP VIEW

Maximum Ratings (@ $T_A = +25^\circ\text{C}$ unless otherwise specified)

| Characteristic | Symbol | Value | Units |
|------------------------------|-----------|----------|-------|
| Drain-Source Voltage | V_{DSS} | 60 | V |
| Gate-Source Voltage (Note 1) | V_{GSS} | ± 20 | V |
| Drain Current (Note 1) | I_D | 115 | mA |
| Continuous @ +100°C | | 73 | |
| Pulsed | | 800 | |

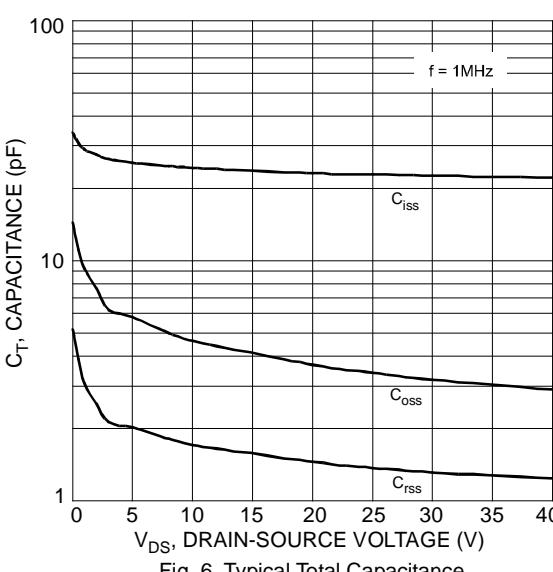
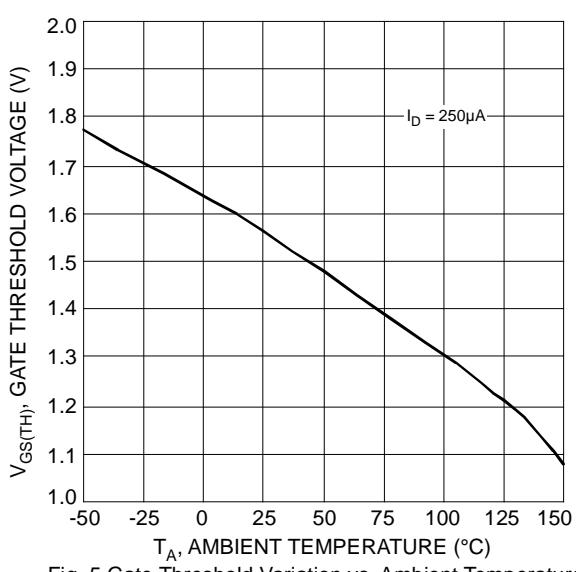
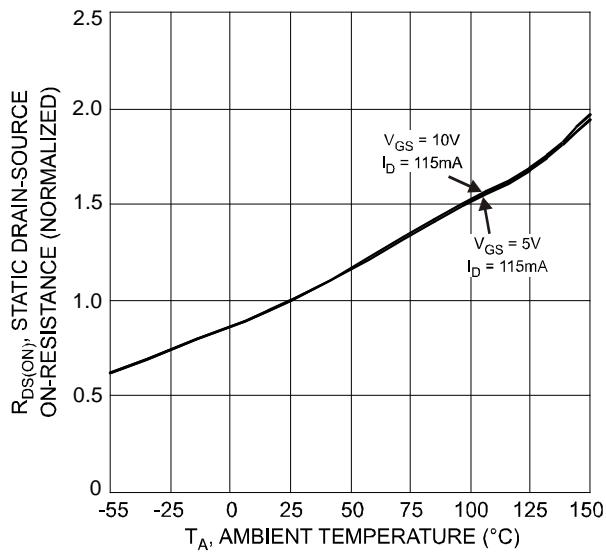
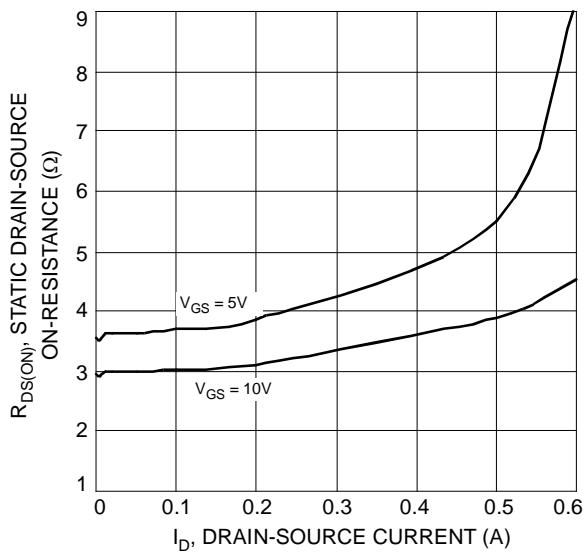
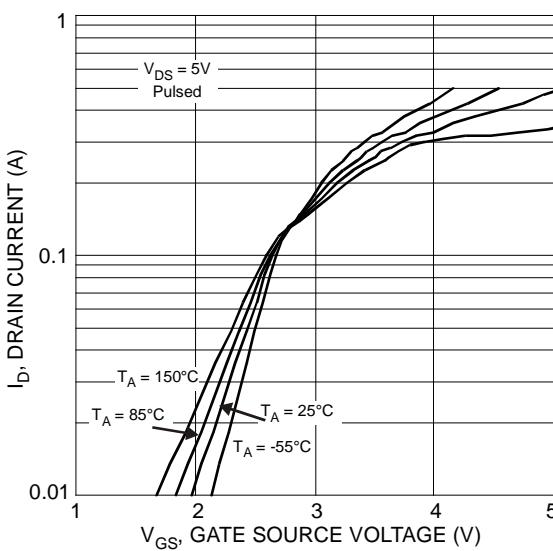
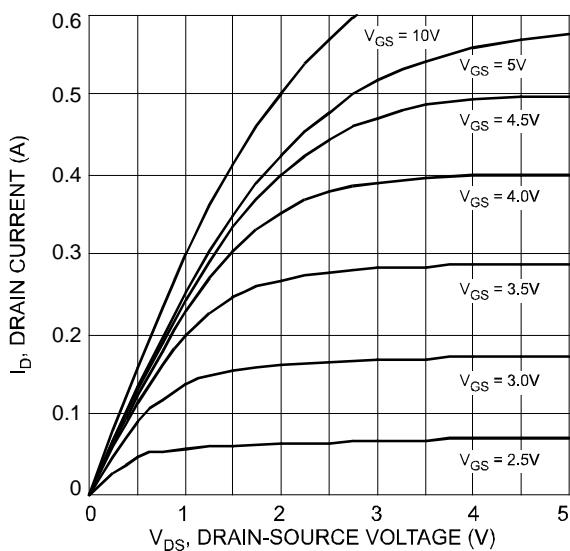
Thermal Characteristics (@ $T_A = +25^\circ\text{C}$ unless otherwise specified)

| Characteristic | Symbol | Value | Units |
|---|-----------------------------------|-------------|-------|
| Total Power Dissipation | P _D | 200 | mW |
| Thermal Resistance, Junction to Ambient | R _{θJA} | 625 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | °C |

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$ unless otherwise specified)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--|--------------|-----|------------|------------|----------|---|
| OFF CHARACTERISTICS (Note 3) | | | | | | |
| Drain-Source Breakdown Voltage | BV_{DSS} | 60 | 70 | — | V | $V_{GS} = 0V, I_D = 10\mu A$ |
| Zero Gate Voltage Drain Current @ $T_C = +25^\circ C$ @ $T_C = +125^\circ C$ | I_{DSS} | — | — | 1.0 500 | μA | $V_{DS} = 60V, V_{GS} = 0V$ |
| Gate-Body Leakage | I_{GSS} | — | — | ±5 | μA | $V_{GS} = \pm 20V, V_{DS} = 0V$ |
| ON CHARACTERISTICS (Note 3) | | | | | | |
| Gate Threshold Voltage | $V_{GS(th)}$ | 1.2 | — | 2.0 | V | $V_{DS} = V_{GS}, I_D = 250\mu A$ |
| Static Drain-Source On-Resistance @ $T_J = +25^\circ C$ @ $T_J = +125^\circ C$ | $R_{DS(on)}$ | — | 3.5 3.0 | 6 5 | Ω | $V_{GS} = 5.0V, I_D = 0.115A$ $V_{GS} = 10V, I_D = 0.115A$ |
| Forward Transconductance | g_{FS} | 80 | — | — | mS | $V_{DS} = 10V, I_D = 0.115A$ |
| DYNAMIC CHARACTERISTICS | | | | | | |
| 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 | |
| SWITCHING CHARACTERISTICS | | | | | | |
| Turn-On Delay Time | $t_{D(ON)}$ | — | 10 | — | ns | $V_{DD} = 30V, I_D = 0.115A, R_L = 150\Omega,$ |
| Turn-Off Delay Time | $t_{D(OFF)}$ | — | 33 | — | ns | $V_{GEN} = 10V, R_{GEN} = 25\Omega$ |

Notes: 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.



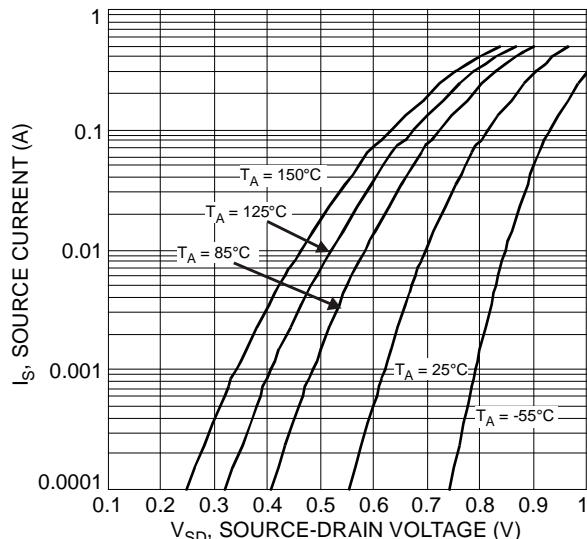


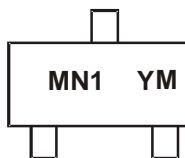
Fig. 7 Reverse Drain Current vs. Source-Drain Voltage

Ordering Information (Note 4)

| Part Number | Case | Packaging |
|-------------|---------|------------------|
| DMN66D0LT-7 | SOT-523 | 3000/Tape & Reel |

Note: 4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information

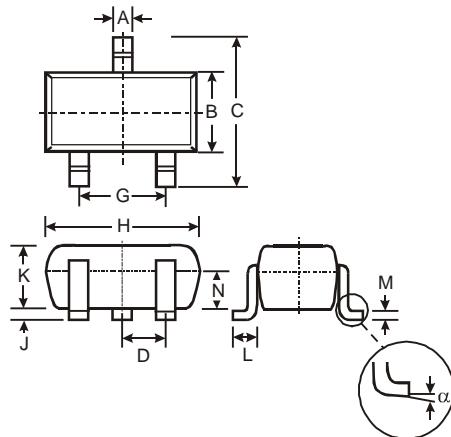


MN1 = Product Type Marking Code
 YM = Date Code Marking
 Y = Year ex: V = 2008
 M = Month ex: 9 = September

Date Code Key

| Year | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | | | | |
|-------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|
| Code | V | W | X | Y | Z | A | B | C | | | | |
| 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 |

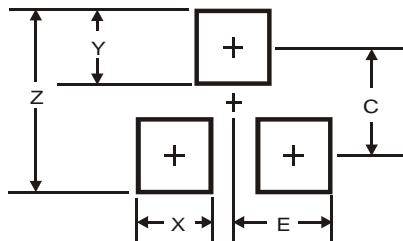
Package Outline Dimensions



| SOT-523 | | | |
|----------|------|------|------|
| Dim | Min | Max | Typ |
| A | 0.15 | 0.30 | 0.22 |
| B | 0.75 | 0.85 | 0.80 |
| C | 1.45 | 1.75 | 1.60 |
| D | — | — | 0.50 |
| G | 0.90 | 1.10 | 1.00 |
| H | 1.50 | 1.70 | 1.60 |
| J | 0.00 | 0.10 | 0.05 |
| K | 0.60 | 0.80 | 0.75 |
| L | 0.10 | 0.30 | 0.22 |
| M | 0.10 | 0.20 | 0.12 |
| N | 0.45 | 0.65 | 0.50 |
| α | 0° | 8° | — |

All Dimensions in mm

Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 1.8 |
| X | 0.4 |
| Y | 0.51 |
| C | 1.3 |
| E | 0.7 |

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