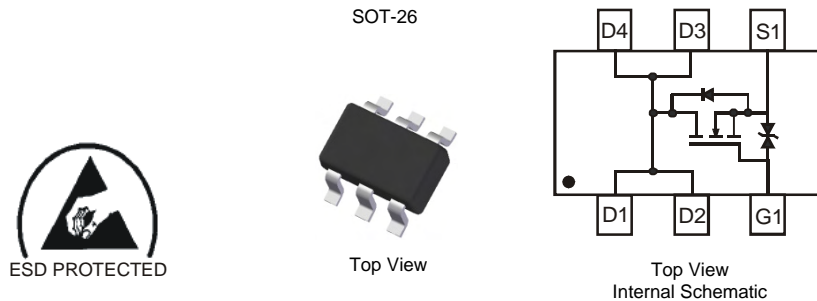


Features

- Low On-Resistance
 - 60 mΩ @ $V_{GS} = 4.5V$
 - 80 mΩ @ $V_{GS} = 2.5V$
 - 130 mΩ @ $V_{GS} = 1.5V$
- Very Low Gate Threshold Voltage
- Low Input Capacitance
- ESD Protected Gate
- Fast Switching Speed
- **Lead Free By Design/RoHS Compliant (Note 2)**
- **"Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: SOT-26
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram
- Terminals: Finish — Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.015 grams (approximate)



Maximum Ratings @ $T_A = 25^\circ C$ unless otherwise specified

| Characteristic | Symbol | Value | Units |
|-------------------------------|-----------|---------|-------|
| Drain-Source Voltage | V_{DSS} | 30 | V |
| Gate-Source Voltage | V_{GSS} | ± 8 | V |
| Drain Current (Note 1) | I_D | 3.2 | A |
| Pulsed Drain Current (Note 1) | I_{DM} | 12.8 | A |

Thermal Characteristics @ $T_A = 25^\circ C$ unless otherwise specified

| Characteristic | Symbol | Value | Units |
|---|-----------------|-------------|--------------|
| Total Power Dissipation (Note 1) | P_D | 900 | mW |
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 139 | $^\circ C/W$ |
| Operating and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | $^\circ C$ |

Electrical Characteristics @ $T_A = 25^\circ C$ unless otherwise specified

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|-------------------------------------|--------------|-----|-----|---------|---------|---|
| OFF CHARACTERISTICS (Note 4) | | | | | | |
| Drain-Source Breakdown Voltage | BV_{DSS} | 30 | — | — | V | $V_{GS} = 0V, I_D = 100\mu A$ |
| Zero Gate Voltage Drain Current | I_{DSS} | — | — | 1 | μA | $V_{DS} = 30V, V_{GS} = 0V$ |
| Gate-Source Leakage | I_{GSS} | — | — | ± 5 | μA | $V_{GS} = \pm 8V, V_{DS} = 0V$ |
| ON CHARACTERISTICS (Note 4) | | | | | | |
| Gate Threshold Voltage | $V_{GS(th)}$ | 0.5 | — | 1.0 | V | $V_{DS} = V_{GS}, I_D = 250\mu A$ |
| Static Drain-Source On-Resistance | $R_{DS(on)}$ | — | 40 | 60 | mΩ | $V_{GS} = 4.5V, I_D = 6A$ |
| | | | 50 | 80 | | $V_{GS} = 2.5V, I_D = 2A$ |
| | | | 76 | 130 | | $V_{GS} = 1.5V, I_D = 1.0A$ |
| Forward Transfer Admittance | $ Y_{fs} $ | — | 8 | — | S | $V_{DS} = 10V, I_D = 6A$ |
| Diode Forward Voltage (Note 4) | V_{SD} | — | 0.7 | 1.1 | V | $V_{GS} = 0V, I_S = 2A$ |
| DYNAMIC CHARACTERISTICS | | | | | | |
| Input Capacitance | C_{iss} | — | 476 | — | pF | $V_{DS} = 15V, V_{GS} = 0V$ $f = 1.0MHz$ |
| Output Capacitance | C_{oss} | — | 77 | — | pF | |
| Reverse Transfer Capacitance | C_{rss} | — | 59 | — | pF | |

- Notes:
1. Device mounted on FR-4 PCB, minimum recommended pad layout on 2oz. Copper pads.
 2. No purposefully added lead.
 3. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
 4. Short duration pulse test used to minimize self-heating effect.

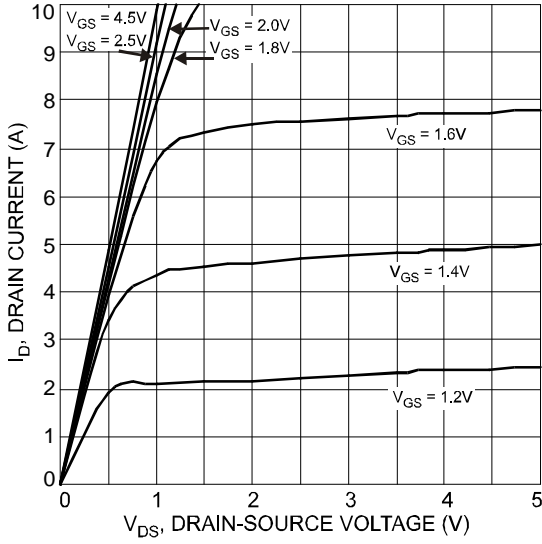


Fig. 1 Typical Output Characteristic

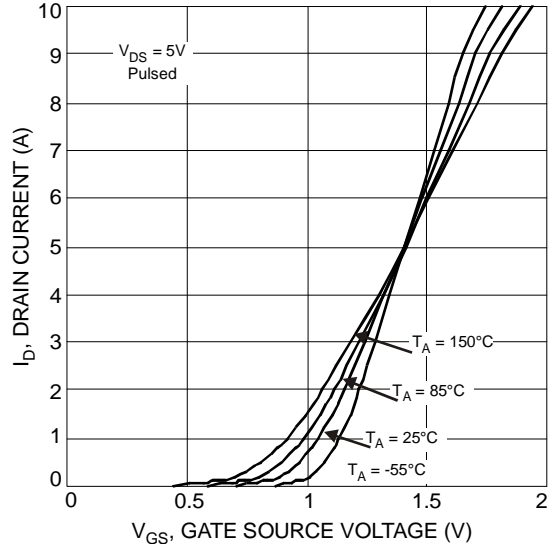


Fig. 2 Typical Transfer Characteristics

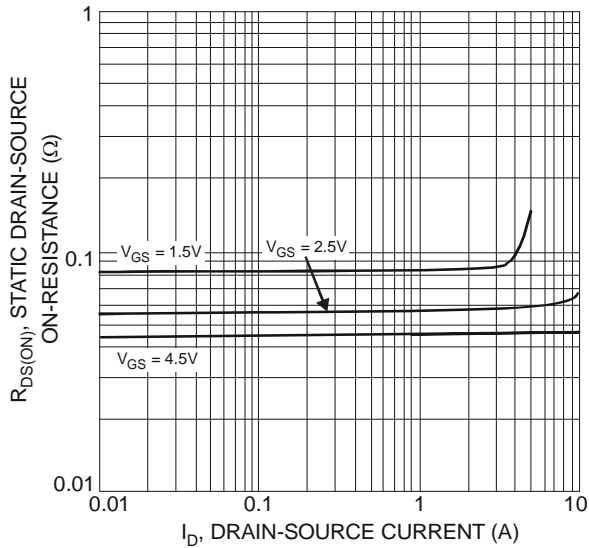


Fig. 3 On-Resistance vs. Drain Current & Gate Voltage

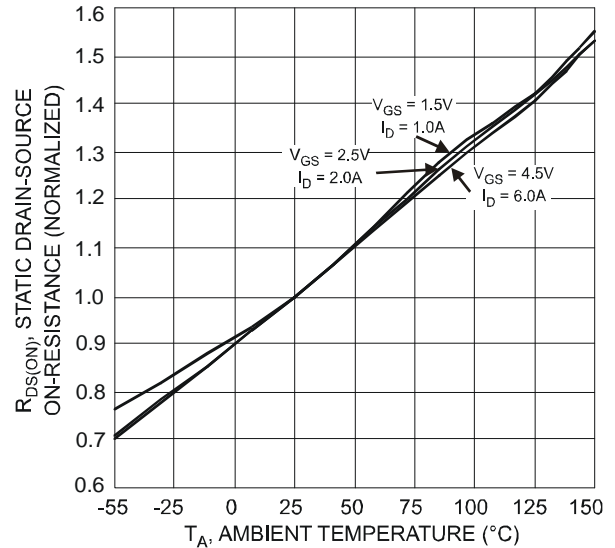


Fig. 4 Normalized Static Drain-Source On-Resistance vs. Ambient Temperature

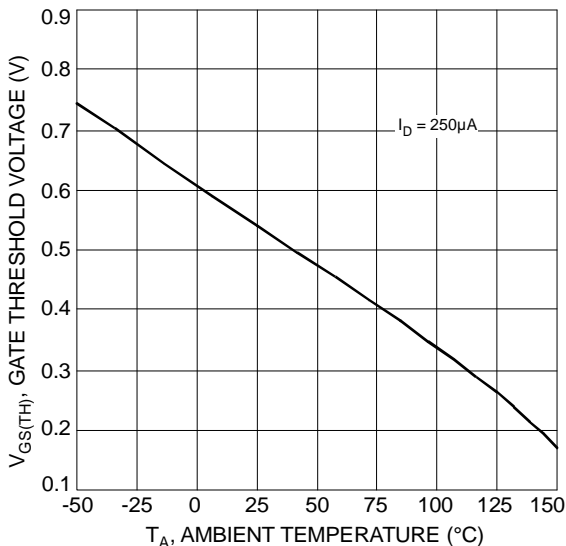


Fig. 5 Gate Threshold Variation vs. Ambient Temperature

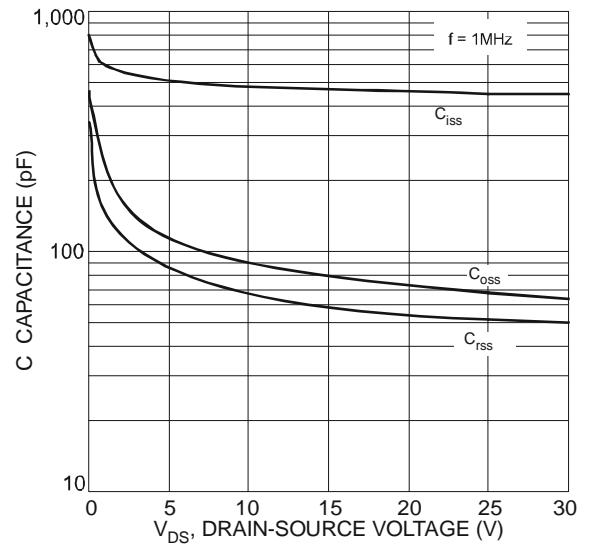


Fig. 6 Typical Total Capacitance

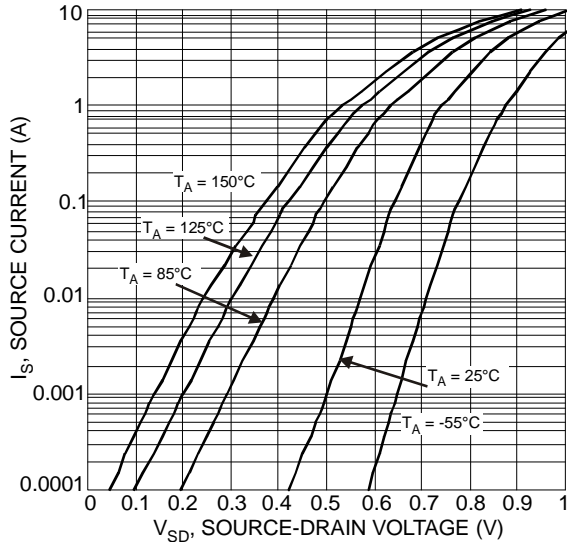


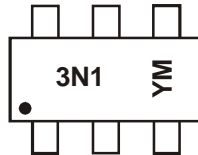
Fig. 7 Reverse Drain Current vs. Source-Drain Voltage

Ordering Information (Note 5)

| Part Number | Case | Packaging |
|--------------|--------|------------------|
| DMN3115UDM-7 | SOT-26 | 3000/Tape & Reel |

Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



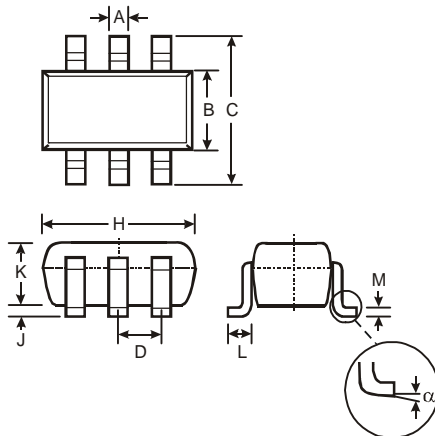
3N1 = Marking Code
 YM = Date Code Marking
 Y = Year (ex: U = 2007)
 M = Month (ex: 9 = September)

Date Code Key

| Year | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|------|------|------|------|------|------|------|------|------|------|
| Code | U | V | W | X | Y | Z | A | B | C |

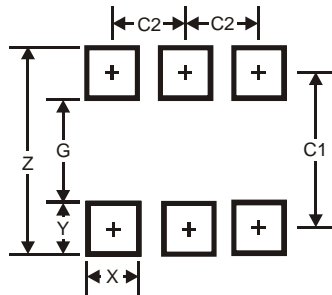
| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | O | N | D |

Package Outline Dimensions



| SOT-26 | | | |
|----------------------|-------|------|------|
| Dim | Min | Max | Typ |
| A | 0.35 | 0.50 | 0.38 |
| B | 1.50 | 1.70 | 1.60 |
| C | 2.70 | 3.00 | 2.80 |
| D | — | — | 0.95 |
| H | 2.90 | 3.10 | 3.00 |
| J | 0.013 | 0.10 | 0.05 |
| K | 1.00 | 1.30 | 1.10 |
| L | 0.35 | 0.55 | 0.40 |
| M | 0.10 | 0.20 | 0.15 |
| α | 0° | 8° | — |
| All Dimensions in mm | | | |

Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 3.20 |
| G | 1.60 |
| X | 0.55 |
| Y | 0.80 |
| C1 | 2.40 |
| C2 | 0.95 |

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