

DMN2114SN

N-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR

Features

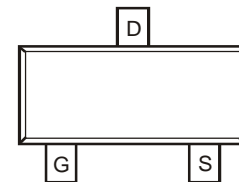
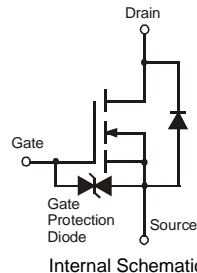
- Low On-Resistance
- Ideal for Notebook Computer, Portable Phone, PCMCIA Cards, and Battery Power Circuits
- **Lead Free By Design/RoHS Compliant (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **ESD Protected Gate**
- **"Green" Device (Note 3)**

Mechanical Data

- Case: SC59
- Case Material - Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish – Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Weight: 0.014 grams (approximate)



SC-59



TOP VIEW

Maximum Ratings @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|----------------------|------------------|------------|------|
| Drain-Source Voltage | V _{DSS} | 20 | V |
| Gate-Source Voltage | V _{GSS} | ±12 | V |
| Drain Current | I _D | Continuous | 1.2 |
| | | Pulsed | 4.0 |

Thermal Characteristics @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|-------|
| Total Power Dissipation | P _d | 500 | mW |
| Thermal Resistance, Junction to Ambient | R _{θJA} | 250 | °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 1) | | | | | | |
| Drain-Source Breakdown Voltage | BV _{DSS} | 20 | — | — | V | V _{GS} = 0V, I _D = 250μA |
| Zero Gate Voltage Drain Current | I _{DSS} | — | — | 10 | μA | @ T _j = 25°C V _{DS} = 24V, V _{GS} = 0V |
| Gate-Body Leakage | I _{GSS} | — | — | ±10 | μA | V _{GS} = ±12V, V _{DS} = 0V |
| ON CHARACTERISTICS (Note 1) | | | | | | |
| Gate Threshold Voltage | V _{GS(th)} | 0.7 | — | 1.40 | V | V _{DS} = 10V, I _D = 1.0mA |
| Static Drain-Source On-Resistance | R _{DS(ON)} | — | — | 0.100 0.160 | Ω | V _{GS} = 4.5V, I _D = 0.5A V _{GS} = 2.5V, I _D = 0.5A |
| Forward Transfer Admittance | Y _{fs} | — | 3.3 | — | S | V _{DS} = 10V, I _D = 0.5A |
| Diode Forward Voltage | V _{SD} | — | 0.8 | 1.1 | V | V _{GS} = 0V, I _S = 1.0A |
| DYNAMIC CHARACTERISTICS | | | | | | |
| Input Capacitance | C _{iss} | — | 180 | — | pF | V _{DS} = 10V, V _{GS} = 0V, f = 1.0MHz |
| Output Capacitance | C _{oss} | — | 120 | — | pF | |
| Reverse Transfer Capacitance | C _{rss} | — | 45 | — | pF | |
| SWITCHING CHARACTERISTICS | | | | | | |
| Turn-On Delay Time | t _{D(ON)} | — | 10 | — | ns | V _{DD} = 10V, I _D = 0.5A, V _{GS} = 5.0V, R _{GEN} = 50Ω |
| Turn-Off Delay Time | t _{D(OFF)} | — | 50 | — | ns | |
| Turn-On Rise Time | t _r | — | 15 | — | ns | |
| Turn-Off Fall Time | t _f | — | 45 | — | ns | |

Notes: 1. Pulse width ≤300μS, duty cycle ≤2%.
2. No purposefully added lead.