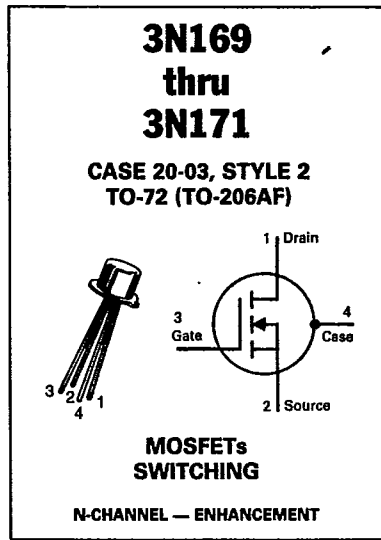


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Refer to 2N4351 for graphs.

| MAXIMUM RATINGS | | | |
|--|-----------|-------------|-------------|
| Rating | Symbol | Value | Unit |
| Drain-Source Voltage | V_{DS} | 25 | Vdc |
| Drain-Gate Voltage | V_{DG} | ± 35 | Vdc |
| Gate-Source Voltage | V_{GS} | ± 35 | Vdc |
| Drain Current | I_D | 30 | mAdc |
| Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 300 1.7 | mW mW/°C |
| Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C | P_D | 800 4.56 | mW mW/°C |
| Junction Temperature Range | T_J | 175 | °C |
| Storage Temperature Range | T_{stg} | -65 to +175 | °C |

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

| Characteristic | Symbol | Min | Max | Unit | |
|---|--|-------------------------|-------------------|-------------------------|----|
| OFF CHARACTERISTICS | | | | | |
| Drain-Source Breakdown Voltage ($I_D = 10 \mu\text{Adc}$, $V_{GS} = 0$) | $V_{(BR)DSX}$ | 25 | — | Vdc | |
| Zero-Gate-Voltage Drain Current ($V_{DS} = 10 \text{ Vdc}$, $V_{GS} = 0$) ($V_{DS} = 10 \text{ Vdc}$, $V_{GS} = 0$, $T_A = 125^\circ\text{C}$) | I_{DSS} | — | 10 1.0 | nAdc μAdc | |
| Gate Reverse Current ($V_{GS} = -35 \text{ Vdc}$, $V_{DS} = 0$) ($V_{GS} = -35 \text{ Vdc}$, $V_{DS} = 0$, $T_A = 125^\circ\text{C}$) | I_{GSS} | — | 10 100 | pAdc | |
| ON CHARACTERISTICS | | | | | |
| Gate Threshold Voltage ($V_{DS} = 10 \text{ Vdc}$, $I_D = 10 \mu\text{Adc}$) | $V_{GS(Th)}$ | | | Vdc | |
| | | 3N169 3N170 3N171 | 0.5 1.0 1.5 | 2.0 2.0 3.0 | |
| Drain-Source On-Voltage ($I_D = 10 \text{ mAdc}$, $V_{GS} = 10 \text{ Vdc}$) | $V_{DS(on)}$ | — | 2.0 | Vdc | |
| On-State Drain Current ($V_{GS} = 10 \text{ Vdc}$, $V_{DS} = 10 \text{ Vdc}$) | $I_{D(on)}$ | 10 | — | mAdc | |
| SMALL-SIGNAL CHARACTERISTICS | | | | | |
| Drain-Source Resistance ($V_{GS} = 10 \text{ Vdc}$, $I_D = 0$, $f = 1.0 \text{ kHz}$) | $r_{ds(on)}$ | — | 200 | Ohms | |
| Forward Transfer Admittance ($V_{DS} = 10 \text{ Vdc}$, $I_D = 2.0 \text{ mAdc}$, $f = 1.0 \text{ kHz}$) | $ y_{fs} $ | 1000 | — | μmhos | |
| Input Capacitance ($V_{DS} = 10 \text{ Vdc}$, $V_{GS} = 0$, $f = 1.0 \text{ MHz}$) | C_{iss} | — | 5.0 | pF | |
| Reverse Transfer Capacitance ($V_{DS} = 0$, $V_{GS} = 0$, $f = 1.0 \text{ MHz}$) | C_{rss} | — | 1.3 | pF | |
| Drain-Substrate Capacitance ($V_{D(SUB)} = 10 \text{ Vdc}$, $f = 1.0 \text{ MHz}$) | $C_{d(sub)}$ | — | 5.0 | pF | |
| SWITCHING CHARACTERISTICS | | | | | |
| Turn-On Delay Time | (VDD = 10 Vdc, $I_{D(on)} = 10 \text{ mAdc}$, $V_{GS(on)} = 10 \text{ Vdc}$, $V_{GS(off)} = 0$, $R_G = 50 \text{ Ohms}$) See Figure 1 | $t_{d(on)}$ | — | 3.0 | ns |
| Rise Time | | t_r | — | 10 | ns |
| Turn-Off Delay Time | | $t_{d(off)}$ | — | 3.0 | ns |
| Fall Time | | t_f | — | 15 | ns |

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FIGURE 1 — SWITCHING TIME TEST CIRCUIT

