Microsemi LAWRENCE

**TECHNICAL DATA**

# N-CHANNEL J-FET

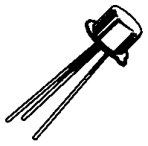
***Qualified per MIL-PRF-19500 / 431***

| *Devices* | | | *Qualified Level* |
|---|---|---|---|
| **2N4091** | **2N4092** | **2N4093** | **JANTX JANTXV** |

**ABSOLUTE MAXIMUM RATINGS ($T_A$ = +25$^0$C unless otherwise noted)**

| Parameters / Test Conditions | | Symbol | Value | Units |
|---|---|---|---|---|
| Gate-Source Voltage | | $V_{GS}$ | -40 | V |
| Drain-Source Voltage | | $V_{DS}$ | 40 | V |
| Drain-Gate Voltage | | $V_{DG}$ | 40 | V |
| Gate Current | | $I_G$ | 10 | mAdc |
| Power Dissipation (1) | $T_A$ = +25$^0$C | $P_T$ | 0.36 | W |
| Operating Junction | | $T_j$ | -65 to +175 | $^0$C |
| Operating Storage Temperature Range | | $T_{stg}$ | -65 to +200 | $^0$C |

(1) Derate linearly 2.4 mW/$^0$C for $T_A$ > 25$^0$C.



TO-18*
(TO-206AA)

*See appendix A for package outline

**ELECTRICAL CHARACTERISTICS ($T_C$ = +25$^0$C unless otherwise noted)**

| PARAMETERS / TEST CONDITIONS | | Symbol | Min. | Max. | Units |
|---|---|---|---|---|---|
| Gate-Source Breakdown Voltage<br>$V_{DS}$ = 0, $I_G$ = -1.0 μAdc | | $V_{(BR)GSS}$ | -40 | | Vdc |
| Gate Reverse Current<br>$V_{DS}$ = 0, $V_{GS}$ = -20 Vdc | | $I_{GSS}$ | | -0.1 | ηA |
| Drain Current<br>$V_{GS}$ = -12, $V_{DS}$ = 20 Vdc<br>$V_{GS}$ = -8.0, $V_{DS}$ = 20 Vdc<br>$V_{GS}$ = -6.0, $V_{DS}$ = 20 Vdc | 2N4091<br>2N4092<br>2N4093 | $I_{D(off)}$ | | 0.1 | ηA |
| Drain Current<br>$V_{GS}$ = 0, $V_{DS}$ = 20 Vdc | 2N4091<br>2N4092<br>2N4093 | $I_{DSS}$ | 30<br>15<br>8.0 | | mA |

**ELECTRICAL CHARACTERISTICS ($T_C$ = 25$^0$C unless otherwise noted) (con't)**

| PARAMETERS / TEST CONDITIONS | | | Symbol | Min. | Max. | Units |
|---|---|---|---|---|---|---|
| Static Drain - Source On-State Resistance | | | | | | |
| $V_{GS}$ = 0, $I_D$ = 1.0 mAdc | 2N4091 | | $r_{DS(on)}$ | | 30 | Ω |
| | 2N4092 | | | | 50 | |
| | 2N4093 | | | | 80 | |
| Drain - Source On-State Voltage | | | | | | |
| $V_{GS}$ = 0, $I_D$ = 6.6 mAdc | 2N4091 | | $V_{DS(on)}$ | | 0.2 | Vdc |
| $V_{GS}$ = 0, $I_D$ = 4.0 mAdc | 2N4092 | | | | 0.2 | |
| $V_{GS}$ = 0, $I_D$ = 2.5 mAdc | 2N4093 | | | | 0.2 | |
| Small-Signal, Common-Source Reverse Transfer Capacitance | | | | | | |
| $V_{GS}$ = 20 Vdc, $V_{DS}$ = 0, f = 1.0 MHz | | | $C_{rss}$ | | 5.0 | pF |
| Small-Signal, Common-Source Short-Circuit Input Capacitance | | | | | | |
| $V_{GS}$ = 0, $V_{DS}$ = 20 Vdc, f = 1.0 MHz | | | $C_{iss}$ | | 16 | pF |
| Turn-On Delay Time | 2N4091 | See Figure 3 of MIL-PRF-19500/431 | $^td_{on}$ | | 15 | ηs |
| | 2N4092 | | | | 15 | |
| | 2N4093 | | | | 15 | |
| Rise Time | 2N4091 | | $^tr$ | | 10 | ηs |
| | 2N4092 | | | | 20 | |
| | 2N4093 | | | | 40 | |
| Turn-Off Delay Time | 2N4091 | | $^td_{off}$ | | 40 | ηs |
| | 2N4092 | | | | 60 | |
| | 2N4093 | | | | 80 | |