

P-CHANNEL J-FET

Qualified per MIL-PRF-19500/476

Devices

Qualified Level

2N5114 2N5115 2N5116

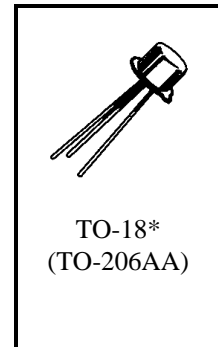
JAN
JANTX
JANTXV

ABSOLUTE MAXIMUM RATINGS ($T_C = +25^{\circ}\text{C}$ unless otherwise noted)

| Parameters / Test Conditions | Symbol | All Devices | Unit |
|--|-----------|-------------|--------------------|
| Gate-Source Voltage ⁽¹⁾ | V_{GS} | 30 | Vdc |
| Drain-Source Voltage ⁽¹⁾ | V_{DS} | 30 | Vdc |
| Drain-Gate Voltage | V_{DG} | 30 | Vdc |
| Gate Current | I_G | 50 | mAdc |
| Power Dissipation $T_A = +25^{\circ}\text{C}$ ⁽²⁾ | P_T | 0.500 | W |
| Storage Temperature Range | T_{stg} | -65 to +200 | $^{\circ}\text{C}$ |

(1) Symmetrical geometry allows operation of those units with source/drain leads interchanged.

(2) Derate linearly 3.0 mW/ $^{\circ}\text{C}$ for $T_A > 25^{\circ}\text{C}$.



*See appendix A for package outline

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

| Parameters / Test Conditions | Symbol | Min. | Max. | Units |
|---|---------------|------|------|-------|
| Gate-Source Breakdown Voltage $V_{DS} = 0, I_G = 1.0 \mu\text{Adc}$ | $V_{(BR)GSS}$ | 30 | | Vdc |
| Drain-Source "On" State Voltage $V_{GS} = 0 \text{ Vdc}, I_D = -15 \text{ mAdc}$ | $V_{DS(on)}$ | | 1.3 | Vdc |
| $V_{GS} = 0 \text{ Vdc}, I_D = -7.0 \text{ mAdc}$ | | | 0.8 | |
| $V_{GS} = 0 \text{ Vdc}, I_D = -3.0 \text{ mAdc}$ | | | 0.6 | |
| Gate Reverse Current $V_{DS} = 0, V_{GS} = 20 \text{ Vdc}$ | I_{GSS} | | 500 | pAdc |
| Drain Current Cutoff $V_{GS} = 12 \text{ Vdc}, V_{DS} = -15 \text{ Vdc}$ | $I_{D(off)}$ | | -500 | pAdc |
| $V_{GS} = 7.0 \text{ Vdc}, V_{DS} = -15 \text{ Vdc}$ | | | -500 | pAdc |
| $V_{GS} = 5.0 \text{ Vdc}, V_{DS} = -15 \text{ Vdc}$ | | | -500 | pAdc |

2N5114, 2N5115, 2N5116 JAN SERIES

ELECTRICAL CHARACTERISTICS ($T_C = 25^{\circ}\text{C}$ unless otherwise noted) (con't)

| Parameters / Test Conditions | | Symbol | Min. | Max. | Units | |
|--|----------------------------|--|--------------------|--|----------------|----------------|
| Zero Gate Voltage Drain Current $V_{GS} = 0, V_{DS} = -18 \text{ Vdc}$ 2N5114 $V_{GS} = 0, V_{DS} = -15 \text{ Vdc}$ 2N5115 $V_{GS} = 0, V_{DS} = -15 \text{ Vdc}$ 2N5116 | | I_{DSS} | -30 -15 -5.0 | -90 -60 -25 | mAdc | |
| Small-Signal Drain - Source "On" State Resistance $V_{GS} = 0, I_D = -1.0 \text{ mAdc}$ 2N5114 2N5115 2N5116 $V_{GS} = 0, I_D = 0; f = 1 \text{ kHz}$ 2N5114 2N5115 2N5116 | | $r_{ds(on)}$ | | 75 100 175 75 100 175 | Ω | |
| Gate-Source Cutoff $V_{DS} = -15, I_D = 1.0 \text{ mAdc}$ 2N5114 $V_{DS} = -15, I_D = 1.0 \text{ mAdc}$ 2N5115 $V_{DS} = -15, I_D = 1.0 \text{ mAdc}$ 2N5116 | | $V_{GS(off)}$ | 5.0 3.0 1.0 | 10 6.0 4.0 | Vdc | |
| Small-Signal, Common-Source Short-Circuit Reverse Transfer Capacitance $V_{GS} = 12 \text{ Vdc}, V_{DS} = 0$ 2N5114 $V_{GS} = 7.0 \text{ Vdc}, V_{DS} = 0$ 2N5115 $V_{GS} = 5.0 \text{ Vdc}, V_{DS} = 0$ 2N5116 | | C_{rss} | | 7.0 | pF | |
| Small-Signal, Common-Source Short-Circuit Input Capacitance $V_{GS} = 0, V_{DS} = -15 \text{ Vdc}, f = 1.0 \text{ MHz}$ 2N5114, 2N5115 2N5116 | | C_{iss} | | 25 27 | pF | |
| Turn-On Delay Time | 2N5114 2N5115 2N5116 | See Figure 2 of MIL-PRF- 19500/476 | t_{don} | 6 10 25 | ηs | |
| Rise Time | 2N5114 2N5115 2N5116 | | | t_r | | 10 20 35 |
| Turn-Off Delay Time | 2N5114 2N5115 2N5116 | | | t_{doff} | | 6 8 20 |