

2N4856 JAN, JTX, JTXV
2N4857 JAN, JTX, JTXV
2N4858 JAN, JTX, JTXV
2N4859 JAN, JTX, JTXV
2N4860 JAN, JTX, JTXV
2N4861 JAN, JTX, JTXV

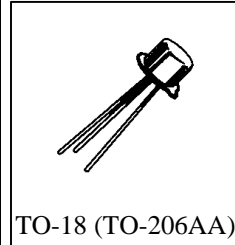


POWER MOSFET N CHANNEL

Processed per MIL-PRF-19500/385

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

| Parameters / Test Conditions | | Symbol | 2N4856 2N4857 2N4858 | 2N4859 2N4860 2N4861 | Unit |
|--|--------------------------------|----------------|----------------------------|----------------------------|--------------------|
| Gate-Source Voltage | | V_{GS} | -40 | -30 | V |
| Drain-Source Voltage | | V_{DS} | 40 | 30 | V |
| Drain-Gate Voltage | | V_{DG} | 40 | 30 | V |
| Gate Current | | I_G | 50 | | mA |
| Power Dissipation | $T_A = 25^{\circ}\text{C}$ (1) | P_T | 0.36 | | W |
| | $T_C = 25^{\circ}\text{C}$ (2) | | 1.8 | | W |
| Operating Junction & Storage Temperature Range | | T_j, T_{stg} | -65 to +200 | | $^{\circ}\text{C}$ |



(1) Derate linearly 2.06 mW/ $^{\circ}\text{C}$ for $T_A > 25^{\circ}\text{C}$.

(2) Derate linearly 10.3 mW/ $^{\circ}\text{C}$ for $T_C > 25^{\circ}\text{C}$.

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

| Parameters / Test Conditions | | Symbol | Min. | Max. | Units |
|---------------------------------|--|---------------|------|-------|----------------|
| Gate-Source Breakdown Voltage | $V_{DS} = 0, I_G = 1.0 \mu\text{A dc}$ 2N4856, 2N4857, 2N4858 2N4859, 2N4860, 2N4861 | $V_{(BR)GSS}$ | -40 | | Vdc |
| | | | -30 | | |
| Gate-Source "Off" State Voltage | $V_{DS} = 15 \text{ Vdc}, I_D = 0.5 \eta\text{A dc}$ 2N4856, 2N4859 2N4857, 2N4860 2N4858, 2N4861 | $V_{GS(on)}$ | -4.0 | -10 | Vdc |
| | | | -2.0 | -6.0 | |
| | | | -0.8 | -4.0 | |
| Gate Reverse Current | $V_{DS} = 0, V_{GS} = -20 \text{ Vdc}$ $V_{DS} = 0, V_{GS} = -15 \text{ Vdc}$ 2N4856, 2N4857, 2N4858 2N4859, 2N4860, 2N4861 | I_{GSS} | | -0.25 | ηA |
| | | | | -0.25 | |
| Drain Current | $V_{GS} = -10 \text{ Vds}, V_{DS} = 15 \text{ Vdc}$ | $I_{D(off)}$ | | 0.25 | ηA |

2N4856, 2N4857, 2N4858, 2N4859, 2N4860, 2N4861 JAN SERIES

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

| Parameters / Test Conditions | Symbol | Min. | Max. | Units |
|---|---------------|-----------------|----------------------|--------------|
| Drain Current $V_{GS} = 0, V_{DS} = 15 \text{ Vdc}$ 2N4856, 2N4859 2N4857, 2N4860 2N4858, 2N4861 | I_{DSS} | 50 20 8.0 | 175 100 80 | mA |
| Static Drain - Source "On" State Resistance $V_{GS} = 0, I_D = 1.0 \text{ mAdc}$ 2N4856, 2N4859 2N4857, 2N4860 2N4858, 2N4861 | $r_{ds(on)}$ | | 25 40 60 | Ω |
| Drain-Source "On" State Voltage $V_{GS} = 0, I_D = 20 \text{ mAdc}$ 2N4856, 2N4859 $V_{GS} = 0, I_D = 10 \text{ mAdc}$ 2N4857, 2N4860 $V_{GS} = 0, I_D = 5.0 \text{ mAdc}$ 2N4858, 2N4861 | $V_{DS(on)}$ | | 0.75 0.50 0.50 | Vdc |
| Small-Signal, Common-Source Reverse Transfer Capacitance $V_{GS} = -10 \text{ Vdc}, V_{DS} = 0, f = 1.0 \text{ MHz}$ $C_1 = 0.1\mu\text{F}, L_1 = L_2 \geq 500 \mu\text{H}$ | C_{rss} | | 8.0 | pF |
| Small-Signal, Common-Source Short-Circuit Input Capacitance $V_{GS} = -10 \text{ Vdc}, V_{DS} = 0, f = 1.0 \text{ MHz}$ $C_1 = 0.1\mu\text{F}, C_2 = 20.1 \text{ m}$ $FL_1 = L_2 \geq 500 \mu\text{H}$ | C_{iss} | | 18 | pF |