

## N-CHANNEL J-FET

Qualified per MIL-PRF-19500/385

### Devices

**2N4856    2N4857    2N4858    2N4859    2N4860    2N4861**  
**2N4856UB   2N4857UB   2N4858UB   2N4859UB   2N4860UB   2N4861UB**

Qualified  
Level

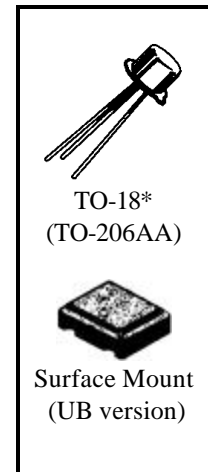
**JAN**  
**JANTX**  
**JANTXV**

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

Parameters / Test Conditions	Symbol	2N4856	2N4859	Unit
		2N4857 2N4858	2N4860 2N4861	
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	$P_T$	$T_A = +25^{\circ}\text{C}^{(1)}$	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  $T_C > 25^{\circ}\text{C}$ .



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

**2N4856, 2N4857, 2N4858, 2N4859, 2N4860, 2N24861 JAN SERIES**

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

Parameters / Test Conditions		Symbol	Min.	Max.	Units
Drain Current $V_{GS} = 0, V_{DS} = 15 \text{ Vdc}$		$I_{DSS}$	50	175	mA
2N4856, 2N4859			20	100	
2N4857, 2N4860 2N4858, 2N4861			8.0	80	
Static Drain - Source "On" State Resistance $V_{GS} = 0, I_D = 1.0 \text{ mAdc}$		$r_{ds(on)}$		25	$\Omega$
2N4856, 2N4859				40	
2N4857, 2N4860 2N4858, 2N4861				60	
Drain-Source "On" State Voltage $V_{GS} = 0, I_D = 20 \text{ mAdc}$ $V_{GS} = 0, I_D = 10 \text{ mAdc}$ $V_{GS} = 0, I_D = 5.0 \text{ mAdc}$		$V_{DS(on)}$		0.75	Vdc
2N4856, 2N4859				0.50	
2N4857, 2N4860 2N4858, 2N4861				0.50	
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
Turn-On Delay Time	2N4856, 2N4859 2N4857, 2N4860 2N4858, 2N4861	See Figure 3 of MIL-PRF- 19500/385	$t_{don}$	6 6 10	$\eta\text{s}$
Rise Time	2N4856, 2N4859 2N4857, 2N4860 2N4858, 2N4861		$t_r$	3 4 10	$\eta\text{s}$
Turn-Off Delay Time	2N4856, 2N4859 2N4857, 2N4860 2N4858, 2N4861		$t_{doff}$	25 50 100	$\eta\text{s}$