

N-CHANNEL J-FET

Qualified per MIL-PRF-19500/385

Devices

2N4856 2N4857 2N4858 2N4859 2N4860 2N4861

Qualified Level

JAN
JANTX
JANTXV

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 $T_A = +25^{\circ}\text{C}^{(1)}$ $T_C = +25^{\circ}\text{C}^{(2)}$	P_T	0.36		W
		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 $T_C > 25^{\circ}\text{C}$.



TO-18*
(TO-206AA)

*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 $V_{DS} = 0, I_G = 1.0 \mu\text{A dc}$ 2N4856, 2N4857, 2N4858 2N4859, 2N4860, 2N4861	$V_{(BR)GSS}$	-40 -30		Vdc
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 -2.0 -0.8	-10 -6.0 -4.0	Vdc
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 -0.25	ηA
Drain Current $V_{GS} = -10 \text{ Vds}, V_{DS} = 15 \text{ Vdc}$	$I_{D(off)}$		0.25	ηA

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 $V_{GS} = 0, V_{DS} = 15 \text{ Vdc}$ 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
Turn-On Delay Time	2N4856, 2N4859 2N4857, 2N4860 2N4858, 2N4861	See Figure 3 of MIL-PRF- 19500/385	t_{don}		6 6 10	ηs
Rise Time	2N4856, 2N4859 2N4857, 2N4860 2N4858, 2N4861		t_r		3 4 10	ηs
Turn-Off Delay Time	2N4856, 2N4859 2N4857, 2N4860 2N4858, 2N4861		t_{doff}		25 50 100	ηs

