Microsemi LAWRENCE

TECHNICAL DATA

N-CHANNEL J-FET

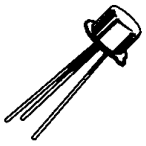
Qualified per MIL-PRF-19500 / 385

Devices	***Qualified Level***
2N4856 2N4857 2N4858 2N4859 2N4860 2N4861	**JAN JANTX JANTXV**

ABSOLUTE MAXIMUM RATINGS (T_C = +25^{0}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^{0}C (1) T_C = +25^{0}C (2)	P_T	 0.36 1.8		 W W
Operating Junction & Storage Temperature Range	T_j, T_{stg}	-65 to +200		^{0}C

(1) Derate linearly 2.06 mW/^{0}C for T_A > 25^{0}C.
(2) Derate linearly 10.3 mW/^{0}C for T_C > 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 V_{DS} = 0, I_G = 1.0 μAdc	2N4856, 2N4857, 2N4858 2N4859, 2N4860, 2N4861	$V_{(BR)GSS}$	-40 -30		Vdc
Gate-Source "Off" State Voltage V_{DS} = 15 Vdc, I_D = 0.5 ηAdc	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 Vdc V_{DS} = 0, V_{GS} = -15 Vdc	2N4856, 2N4857, 2N4858 2N4859, 2N4860, 2N4861	I_{GSS}		-0.25 -0.25	ηA
Drain Current V_{GS} = -10 Vds, V_{DS} = 15 Vdc		$I_{D(off)}$		0.25	ηA

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

Parameters / Test Conditions			Symbol	Min.	Max.	Units
Drain Current V_{GS} = 0, V_{DS} = 15 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 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 mAdc V_{GS} = 0, I_D = 10 mAdc V_{GS} = 0, I_D = 5.0 mAdc	2N4856, 2N4859 2N4857, 2N4860 2N4858, 2N4861		$V_{DS(on)}$		0.75 0.50 0.50	Vdc
Small-Signal, Common-Source Reverse Transfer Capacitance V_{GS} = -10 Vdc, V_{DS} = 0, f = 1.0 MHz C_1 = 0.1μF, L_1 = L_2 ≥ 500 μH			C_{rss}		8.0	pF
Small-Signal, Common-Source Short-Circuit Input Capacitance V_{GS} = -10 Vdc, V_{DS} = 0, f = 1.0 MHz C_1 = 0.1μF, C_2 = 20.1 m FL_1 = L_2 ≥ 500 μH			C_{iss}		18	pF
Turn-On Delay Time	2N4856, 2N4859 2N4857, 2N4860 2N4858, 2N4861	See Figure 3 of MIL-PRF-19500/385	$^td_{on}$		6 6 10	ηs
Rise Time	2N4856, 2N4859 2N4857, 2N4860 2N4858, 2N4861		^tr		3 4 10	ηs
Turn-Off Delay Time	2N4856, 2N4859 2N4857, 2N4860 2N4858, 2N4861		$^td_{off}$		25 50 100	ηs