

# N-CHANNEL J-FET

Qualified per MIL-PRF-19500/431

**Devices**

2N4091                      2N4092                      2N4093

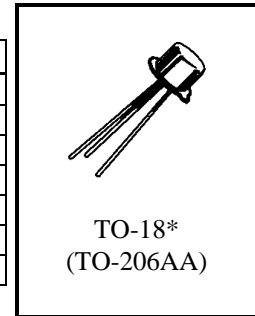
**Qualified Level**

**JANTX  
JANTXV**

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

Parameters / Test Conditions	Symbol	Value	Units
Gate-Source Voltage	$V_{GS}$	-40	V
Drain-Source Voltage	$V_{DS}$	40	V
Drain-Gate Voltage	$V_{DG}$	40	V
Gate Current	$I_G$	10	mA <sub>dc</sub>
Power Dissipation <sup>(1)</sup>	$P_T$	0.36	W
	$T_A = +25^{\circ}\text{C}$		
Operating Junction	$T_j$	-65 to +175	$^{\circ}\text{C}$
Operating Storage Temperature Range	$T_{stg}$	-65 to +200	$^{\circ}\text{C}$

(1) Derate linearly 2.4 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 $V_{DS} = 0, I_G = -1.0 \mu\text{A}_{dc}$	$V_{(BR)GSS}$	-40		Vdc
Gate Reverse Current $V_{DS} = 0, V_{GS} = -20 \text{Vdc}$	$I_{GSS}$		-0.1	$\eta\text{A}$
Drain Current $V_{GS} = -12, V_{DS} = 20 \text{Vdc}$ 2N4091 $V_{GS} = -8.0, V_{DS} = 20 \text{Vdc}$ 2N4092 $V_{GS} = -6.0, V_{DS} = 20 \text{Vdc}$ 2N4093	$I_{D(off)}$		0.1	$\eta\text{A}$
Drain Current $V_{GS} = 0, V_{DS} = 20 \text{Vdc}$	$I_{DSS}$		30 15 8.0	mA

**2N4091, 2N4092, 2N4093 JAN SERIES**

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

PARAMETERS / TEST CONDITIONS		Symbol	Min.	Max.	Units
Static Drain - Source On-State Resistance $V_{GS} = 0, I_D = 1.0 \text{ mAdc}$		$r_{DS(on)}$		30	$\Omega$
2N4091			50		
2N4092 2N4093			80		
Drain - Source On-State Voltage $V_{GS} = 0, I_D = 6.6 \text{ mAdc}$ $V_{GS} = 0, I_D = 4.0 \text{ mAdc}$ $V_{GS} = 0, I_D = 2.5 \text{ mAdc}$		$V_{DS(on)}$		0.2	Vdc
2N4091			0.2		
2N4092 2N4093			0.2		
Small-Signal, Common-Source Reverse Transfer Capacitance $V_{GS} = 20 \text{ Vdc}, V_{DS} = 0, f = 1.0 \text{ MHz}$		$C_{rss}$		5.0	pF
Small-Signal, Common-Source Short-Circuit Input Capacitance $V_{GS} = 0, V_{DS} = 20 \text{ Vdc}, f = 1.0 \text{ MHz}$		$C_{iss}$		16	pF
Turn-On Delay Time	2N4091	See Figure 3 of MIL-PRF- 19500/431	$t_{d_{on}}$	15	$\eta s$
	2N4092			15	
	2N4093			15	
Rise Time	2N4091		$t_r$	10	$\eta s$
	2N4092			20	
	2N4093			40	
Turn-Off Delay Time	2N4091		$t_{d_{off}}$	40	$\eta s$
	2N4092			60	
	2N4093			80	