



6 Lake Street, Lawrence, MA 01841
1-800-446-1158 / (978) 620-2600 / Fax: (978) 689-0803
Website: <http://www.microsemi.com>

TECHNICAL DATA SHEET

N-CHANNEL J-FET Equivalent To MIL-PRF-19500/431

DEVICES

2N4091
2N4092
2N4093

LEVELS

MQ = JAN Equivalent
MX = JANTX Equivalent
MV = JANTXV Equivalent

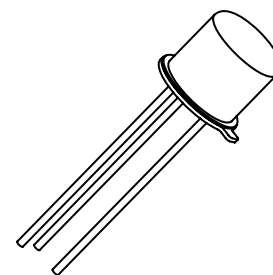
ABSOLUTE MAXIMUM RATINGS ($T_C = +25^\circ\text{C}$ unless otherwise noted)

Parameters / Test Conditions	Symbol	Value	Unit
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	mAdc
Power Dissipation ⁽¹⁾ $T_A = +25^\circ\text{C}$	P_T	0.36	W
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 $T_A > 25^\circ\text{C}$.

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

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Gate-Source Breakdown Voltage $V_{DS} = 0$, $I_G = -1.0\mu\text{A}$ dc	$V_{(BR)GSS}$	-40		Vdc
Gate Reverse Current $V_{DS} = 0$, $V_{GS} = -20\text{V}$ dc	I_{GSS}		-0.1	ηA
Drain Current $V_{GS} = -12\text{V}$ dc, $V_{DS} = 20\text{V}$ dc 2N4091 $V_{GS} = -8.0\text{V}$ dc, $V_{DS} = 20\text{V}$ dc 2N4092 $V_{GS} = -6.0\text{V}$ dc, $V_{DS} = 20\text{V}$ dc 2N4093	$I_{D(off)}$		-0.1	ηA
Drain Current $V_{GS} = 0$, $V_{DS} = 20\text{V}$ dc 2N4091 2N4092 2N4093	I_{DSS}	30 15 8.0		mA
Drain-Source On-State Voltage $V_{GS} = 0$, $I_D = 6.6\text{mA}$ dc 2N4091 $V_{GS} = 0$, $I_D = 4.0\text{mA}$ dc 2N4092 $V_{GS} = 0$, $I_D = 2.5\text{mA}$ dc 2N4093	$V_{DS(on)}$		0.2 0.2 0.2	Vdc
Static Drain-Source On-State Resistance $V_{GS} = 0$, $I_D = 1.0\text{mA}$ dc 2N4091 2N4092 2N4093	$r_{DS(on)}$		30 50 80	Ω



TO-18
(TO-206AA)



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DYNAMIC CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Small-Signal, Common-Source Reverse Transfer Capacitance $V_{GS} = 20V$ dc, $V_{DS} = 0$, $f = 1.0MHz$	C_{rss}		5.0	pF
Small-Signal, Common-Source Short-Circuit Input Capacitance $V_{GS} = 0$, $V_{DS} = 20V$ dc, $f = 1.0MHz$	C_{iss}		16	pF

SWITCHING CHARACTERISTICS

Parameters / Test Conditions			Symbol	Min.	Max.	Unit
Turn-On Delay Time	2N4091 2N4092 2N4093	See Figure 3 of MIL-PRF-19500/431	t_{don}		15 15 15	ηs
Rise Time	2N4091 2N4092 2N4093		t_r		10 20 40	ηs
Turn-Off Delay Time	2N4091 2N4092 2N4093		t_{doff}		40 60 80	ηs