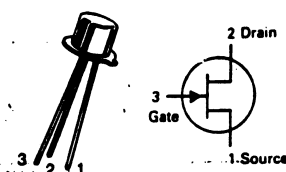


MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	40	Vdc
Drain-Gate Voltage	V_{DG}	40	Vdc
Gate-Source Voltage	V_{GS}	40	Vdc
Forward Gate Current	I_{GF}	50	mAdc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.8 10	Watts mW/°C
Operating Junction Temperature Range	T_J	-65 to +175	°C
Storage Temperature Range	T_{stg}	-65 to +175	°C

2N4391 thru 2N4393

TO-18



JFETs
SWITCHING

— N-CHANNEL — DEPLETION

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Gate-Source Breakdown Voltage ($I_G = 1.0 \mu\text{Adc}$, $V_{DS} = 0$)	$V_{(BR)GSS}$	40	—	Vdc
Gate Reverse Current ($V_{GS} = 20 \text{ Vdc}$, $V_{DS} = 0$) ($V_{GS} = 20 \text{ Vdc}$, $V_{DS} = 0$, $T_A = 150^\circ\text{C}$)	I_{GSS}	— —	0.1 0.2	nAdc μAdc
Gate Source Voltage ($V_{DS} = 20 \text{ Vdc}$, $I_D = 1.0 \text{ nAdc}$)	V_{GS}	-4.0 -2.0 -0.5	-10 -5.0 -3.0	Vdc
Gate-Source Forward Voltage ($I_G = 1.0 \text{ mAdc}$, $V_{DS} = 0$)	$V_{GS(f)}$	—	1.0	Vdc
Drain-Cutoff Current ($V_{DS} = 20 \text{ Vdc}$, $V_{GS} = 12 \text{ Vdc}$) ($V_{DS} = 20 \text{ Vdc}$, $V_{GS} = 7.0 \text{ Vdc}$) ($V_{DS} = 20 \text{ Vdc}$, $V_{GS} = 5.0 \text{ Vdc}$) ($V_{DS} = 20 \text{ Vdc}$, $V_{GS} = 12 \text{ Vdc}$, $T_A = 150^\circ\text{C}$) ($V_{DS} = 20 \text{ Vdc}$, $V_{GS} = 7.0 \text{ Vdc}$, $T_A = 150^\circ\text{C}$) ($V_{DS} = 20 \text{ Vdc}$, $V_{GS} = 5.0 \text{ Vdc}$, $T_A = 150^\circ\text{C}$)	$I_{D(off)}$	— — — — — —	0.1 0.1 0.1 0.2 0.2 0.2	nAdc μAdc
ON CHARACTERISTICS				
Zero-Gate-Voltage Drain Current(1) ($V_{DS} = 20 \text{ Vdc}$, $V_{GS} = 0$)	I_{DSS}	50 25 5.0	150 75 30	mAdc
Drain-Source On-Voltage ($I_D = 12 \text{ mAdc}$, $V_{GS} = 0$) ($I_D = 6.0 \text{ mAdc}$, $V_{GS} = 0$) ($I_D = 3.0 \text{ mAdc}$, $V_{GS} = 0$)	$V_{DS(on)}$	— — —	0.4 0.4 0.4	Vdc
Static Drain-Source On Resistance ($I_D = 1.0 \text{ mAdc}$, $V_{GS} = 0$)	$r_{DS(on)}$	— — —	30 60 100	Ohms
SMALL-SIGNAL CHARACTERISTICS				
Drain-Source "ON" Resistance ($V_{GS} = 0$, $I_D = 0$, $f = 1.0 \text{ kHz}$)	$r_{ds(on)}$	— — —	30 60 100	Ohms



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2N4391 thru 2N4393

*ELECTRICAL CHARACTERISTICS (continued) ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Max	Unit
Input Capacitance ($V_{DS} = 20\text{ Vdc}$, $V_{GS} = 0$, $f = 1.0\text{ MHz}$)	C_{iss}	—	14	pF
Reverse Transfer Capacitance ($V_{DS} = 0$, $V_{GS} = 12\text{ Vdc}$, $f = 1.0\text{ MHz}$) ($V_{DS} = 0$, $V_{GS} = 7.0\text{ Vdc}$, $f = 1.0\text{ MHz}$) ($V_{DS} = 0$, $V_{GS} = 5.0\text{ Vdc}$, $f = 1.0\text{ MHz}$)	C_{rss}	— — —	3.5 3.5 3.5	pF

SWITCHING CHARACTERISTICS

Rise Time ($I_{D(on)} = 12\text{ mAdc}$) ($I_{D(on)} = 6.0\text{ mAdc}$) ($I_{D(on)} = 3.0\text{ mAdc}$)	2N4391 2N4392 2N4393	t_r	— — —	5.0 5.0 5.0	ns
Fall Time ($V_{GS(off)} = 12\text{ Vdc}$) ($V_{GS(off)} = 7.0\text{ Vdc}$) ($V_{GS(off)} = 5.0\text{ Vdc}$)	2N4391 2N4392 2N4393	t_f	— — —	15 20 30	ns
Turn-On Time ($I_{D(on)} = 12\text{ mAdc}$) ($I_{D(on)} = 6.0\text{ mAdc}$) ($I_{D(on)} = 3.0\text{ mAdc}$)	2N4391 2N4392 2N4393	t_{on}	— — —	15 15 15	ns
Turn-Off Time ($V_{GS(off)} = 12\text{ Vdc}$) ($V_{GS(off)} = 7.0\text{ Vdc}$) ($V_{GS(off)} = 5.0\text{ Vdc}$)	2N4391 2N4392 2N4393	t_{off}	— — —	20 35 50	ns

(1) Pulse Test: Pulse Width $\leq 100\text{ }\mu\text{s}$, Duty Cycle $\leq 1.0\%$.
*In addition to JEDEC Registered Data.



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