

2N4391, 2N4392, 2N4393 N-CHANNEL JFET SWITCH

FEATURES

LOW $r_{DS(on)} < 30$

HIGH OFF-ISOLATION $I_{D(off)} < 100\text{pA}$

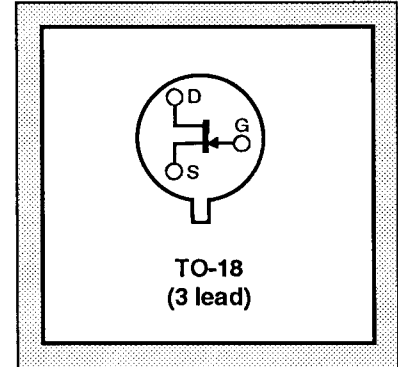
HIGH SPEED $t_{ON} < 20\text{ns}$

PACKAGING OPTIONS AVAILABLE: PLASTIC SOIC

ABSOLUTE MAXIMUM RATINGS

@ 25°C (unless otherwise noted)

Reverse Gate to Drain or Source	-40V
Gate Current	50mA
Operating Junction Temperature	1.8W
Storage Temperature	-65°C to +200°C



ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTICS	2N4391		2N4392		2N4393		UNITS	CONDITIONS	
		MIN	MAX	MIN	MAX	MIN	MAX			
I_{GSS}	Gate Reverse Current		-100		-100		-100	pA	$V_{GS}=-20V$ $V_{DS}=0$	
			-200		-200		-200	nA		150°C
BV_{GSS}	Gate-Source Breakdown	-40		-40		-40		V	$I_G=-1\mu A$ $V_{DS}=0$	
$I_{D(off)}$	Drain Cutoff Current						100	pA	$V_{DS}=20V$ $V_{GS}=-5V$	
							200	nA		150°C
					100				pA	$V_{GS}=-7V$
					200				nA	
				100					pA	$V_{GS}=-12V$
				200					nA	
$V_{GS(f)}$	Gate-Source Forward		1		1		1	V	$I_G=1mA$ $V_{DS}=0$	
$V_{GS(off)}$	Gate-Source Cutoff	-4	-10	-2	-5	-0.5	-3		$V_{DS}=20$ $I_D=1nA$	
I_{DSS}	Saturation Drain Current	50	150	25	75	5	30	mA	$V_{DS}=20$ $V_{GS}=0$ (NOTE 1)	
$V_{DS(on)}$	Drain Source ON						0.4	V	$V_{GS}=0$	
					0.4			$I_D=3mA$		
								$I_D=6mA$		
			0.4					$I_D=12mA$		
$r_{DS(on)}$	Static Drain-Source ON Resistance		30		60		100	Ω	$V_{GS}=0$ $I_D=1mA$	
$r_{ds(on)}$	Drain-Source ON Resistance		30		60		100		$V_{GS}=0$ $I_D=0$ $f=1kHz$	
C_{iss}	Common Source Input Capacitance		14		14		14	pF	$V_{DS}=20V$ $V_{GS}=0$	
C_{rss}	Common Source Reverse Transfer Capacitance						3.5	pF	$V_{DS}=0$	
					3.5			$V_{GS}=-5V$		
								$V_{GS}=-7V$		
			3.5					$V_{GS}=-12V$	$f=1kHz$	
$t_{d(on)}$	Turn-ON Delay Time		15		15		15	ns	$V_{DD}=10V$ $V_{GS(on)}=0$	
t_r	Rise Time		5		5		5	$I_D=(on)$ $V_{GS(off)}$ R_L		
$t_{d(off)}$	Turn-OFF Delay Time		20		35		50	2N4391 12mA -12V		
t_f	Fall Time		15		20		30	2N4392 6 -7		
									2N4393 3 -5	

NOTE 1: Pulse test required, pulse width=300 μ s, duty cycle 3%.