2N4391, 2N4392, 2N4393

N-Channel Silicon Junction Field-Effect Transistor

- Low On Resistance Analog Switches
- Choppers
- Commutators

Absolute maximum ratings at T_A = 25°C

Reverse Gate Source & Reverse Gate Drain Voltage	– 40 V
Continuous Forward Gate Current	50 mA
Continuous Device Power Dissipation	1.8 W
Power Derating	12 mW/°C

At 25°C free air temperature Static Electrical Characteristics		2N4391		2N4392		2N4393		Process NJ132		
		Min	Max	Min	Max	Min	Max	Unit	Test Conditions	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	– 40		– 40		– 40		V	I_G = – 1µA, V_{DS} = ØV	
Gate Reverse Current	I_{GSS}		– 100		– 100		– 100	pA	V_{GS} = – 20V, V_{DS} = ØV	
			– 200		– 200		– 200	nA	V_{GS} = – 20V, V_{DS} = ØV	T_A = 150°C
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	– 4	– 10	– 2	– 5	– 0.5	– 3	V	V_{DS} = – 20V, I_D = 1 nA	
Gate Source Forward Voltage	$V_{GS(F)}$		1		1		1	V	I_G = 1 mA, V_{DS} = ØV	
Drain Saturation Current (Pulsed)	I_{DSS}	50	150	25	75	5	30	mA	V_{DS} = 20V, V_{GS} = ØV	
Drain Cutoff Current	$I_{D(OFF)}$						100	pA	V_{DS} = 20V, V_{GS} = – 5V	
							200	nA	V_{DS} = 20V, V_{GS} = – 5V	T_A = 150°C
					100			pA	V_{DS} = 20V, V_{GS} = – 7V	
					200			nA	V_{DS} = 20V, V_{GS} = – 7V	T_A = 150°C
			100					pA	V_{DS} = 20V, V_{GS} = – 12V	
			200					nA	V_{DS} = 20V, V_{GS} = – 12V	T_A = 150°C
Drain Source ON Voltage	$V_{DS(ON)}$						0.4	V	V_{GS} = ØV, I_D = 3 mA	
					0.4			V	V_{GS} = ØV, I_D = 6 mA	
			0.4					V	V_{GS} = ØV, I_D = 12 mA	
Static Drain Source ON Resistance	$r_{DS(ON)}$		30		60		100	Ω	V_{GS} = ØV, I_D = 1 mA	
Dynamic Electrical Characteristics										
Drain Source ON Resistance	$r_{ds(on)}$		30		60		100	Ω	V_{GS} = ØV, I_D = ØA	f = 1 kHz
Common Source Input Capacitance	C_{iss}		14		14		14	pF	V_{DS} = 20V, V_{GS} = ØV	f = 1 kHz
Common Source Reverse Transfer Capacitance	C_{rss}						3.5	pF	V_{DS} = ØV, V_{GS} = – 5V	f = 1 kHz
					3.5			pF	V_{DS} = ØV, V_{GS} = – 7V	f = 1 kHz
			3.5					pF	V_{DS} = ØV, V_{GS} = – 12V	f = 1 kHz
Switching Characteristics										
Turn ON Delay Time	$t_{d(on)}$		15		15		15	ns	V_{DD} = 10V, $V_{GS(ON)}$ = ØV	
Rise Time	t_r		5		5		5	ns		
Turn OFF Delay Time	$t_{d(off)}$		20		35		50	ns		
Fall Time	t_f		15		20		30	ns		

	2N4391	2N4392	2N4393	
$I_{D(ON)}$	12	6	3	mA
$V_{GS(OFF)}$	– 12	– 7	– 5	V

TO-18 Package
See Section G for Outline Dimensions

Surface Mount
SMP4391, SMP4392, SMP4393

Pin Configuration
1 Source, 2 Drain, 3 Gate & Case

InterFET Corporation
1000 N. Shiloh Road, Garland, TX 75042
(972) 487-1287 FAX (972) 276-3375

www.interfet.com