

IFN3993, IFN3993A, IFN3994, IFN3994A

P-Channel Silicon Junction Field-Effect Transistor

- Choppers
- High Speed Commutators

Absolute maximum ratings at $T_A = 25^\circ\text{C}$

Reverse Gate Source & Gate Drain Voltage	25V
Continuous Forward Gate Current	-10 mA
Continuous Device Power Dissipation	300 mW
Power Derating	2.4 mW/ $^\circ\text{C}$
Operating Temperature Range	-55 $^\circ\text{C}$ to +125 $^\circ\text{C}$
Storage Temperature Range	-65 $^\circ\text{C}$ to +150 $^\circ\text{C}$

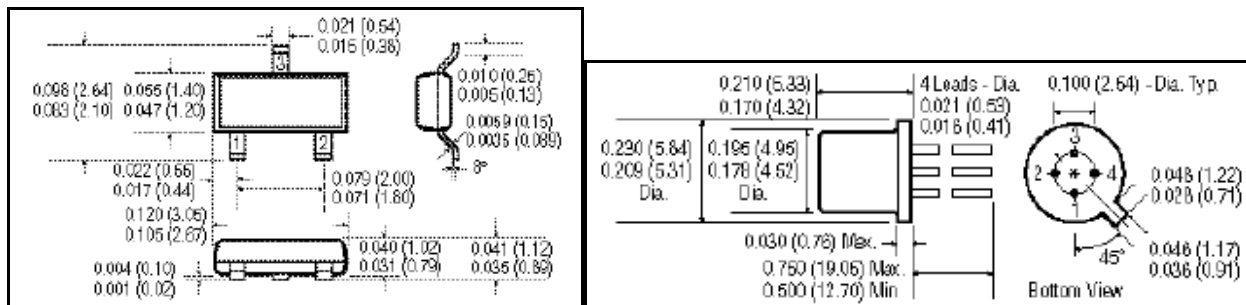
At 25 $^\circ\text{C}$ free air temperature

Static Electrical Characteristics

		IFN3993		IFN3993A		IFN3994		IFN3994A		Process PJ99	
		Min	Max	Min	Max	Min	Max	Min	Max	Unit	Test Conditions
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	25		25		25		25		V	$I_G = 1 \mu\text{A}$, $V_{DS} = 0 \text{ V}$
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	4	9.5	4	9.5	1	5.5	1	5.5	V	$V_{DS} = -10 \text{ V}$, $I_D = -1 \mu\text{A}$
Drain Reverse Current (pulsed)	I_{DSS}	-10		-10		-2		-2		mA	$V_{DS} = -10 \text{ V}$, $V_{GS} = 0 \text{ V}$
Drain Reverse Current	I_{DGO}		-1.2		-1.2		-1.2		-1.2	nA	$V_{DG} = -15 \text{ V}$, $I_S = 0 \text{ A}$
Drain Cutoff Current	$I_{D(OFF)}$		-1.2		-1.2		-1.2		-1.2	nA	$V_{DS} = -10 \text{ V}$, $V_{GS} = 10 \text{ V}$
			-1		-1		-1		-1	μA	$T_A = 150^\circ\text{C}$

Dynamic Electrical Characteristics

Common-Source Forward Transmittance	$ Y_{fs} $	6	36	7	36	4	30	5	30	mS	$V_{DS} = -10 \text{ V}$, $V_{GS} = 0 \text{ V}$	$f = 1 \text{ kHz}$
Common-Source Input Capacitance	C_{iss}		16		12		16		12	pF	$V_{DS} = -10 \text{ V}$, $V_{GS} = 0 \text{ V}$	$f = 1 \text{ MHz}$
Common-Source Reverse Transfer Capacitance	C_{rss}		4.5		3		5		3.5	pF	$V_{DS} = 0 \text{ V}$, $V_{GS} = 10 \text{ V}$	$f = 1 \text{ MHz}$
Drain Source ON Resistance	$R_{ds(on)}$		150		150		300		300	Ω	$V_{GS} = 0 \text{ V}$, $I_D = 0 \text{ mA}$	$f = 1 \text{ kHz}$



SOT-23: SMP3993, SMP3993A, SMP3994, SMP3994A
1-Source, 2- Gate, 3- Drain

TO-72: IFN3993, IFN3993A, IFN3994, IFN3994A
1-Source, 2- Gate, 3- Drain 4-Case

Dimensions in Inches (mm)



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