IFN5564, IFN5565, IFN5566

N-Channel Dual Silicon Junction Field-Effect Transistor

- ## Wide Band Differential Amplifier
- ## 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	650 mW
Power Derating	3.3 mW/°C

At 25°C free air temperature:

Static Electrical Characteristics

		IFN5564 Min	IFN5564 Max	IFN5565 Min	IFN5565 Max	IFN5566 Min	IFN5566 Max	Unit	Process NJ72 Test Conditions	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	– 40		– 40		– 40		V	$I_G = – 1\,\mu A$, $V_{DS} = \emptyset V$	
Gate Leakage Voltage	I_{GSS}		– 100		– 100		– 100	pA	$V_{GS} = – 20V$, $V_{DS} = \emptyset V$	
			– 200		– 200		– 200	nA		$T_A = 150°C$
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	– 0.5	– 3	– 0.5	– 3	– 0.5	– 3	V	$V_{DS} = 15\,V$, $I_D = 1\,nA$	
Gate Source Voltage	$V_{GS(f)}$		1		1		1	V	$V_{DS} = \emptyset V$, $I_G = 2\,mA$	
Saturation Current (Pulsed)	I_{DSS}	5	30	5	30	5	30	mA	$V_{DS} = 15\,V$, $V_{GS} = \emptyset V$	
Static Drain Source ON Resistance	$rDS_{(ON)}$		100		100		100	Ω	$I_D = 1\,mA$, $V_{GS} = \emptyset V$	

Dynamic Electrical Characteristics

		IFN5564 Min	IFN5564 Max	IFN5565 Min	IFN5565 Max	IFN5566 Min	IFN5566 Max	Unit	Test Conditions	
Common Source Forward Transconductance	g_{fs}	7000	12500	7000	12500	7000	12500	µhmo	$V_{DG} = 15\,V$, $I_D = 2\,mA$	f = 1 kHz
		7000		7000		7000		µhmo		f = 100 MHz
Common Source Output Transconductance	g_{os}		45		45		45	µhmo	$V_{DS} = 15\,V$, $I_D = 2\,mA$	f = 1 kHz
Common Source Input Capacitance	C_{iss}		12		12		12	pF	$V_{DS} = 15\,V$, $I_D = 2\,mA$	f = 1 MHz
Common Source Reverse Transfer Capacitance	C_{rss}		3		3		3	pF	$V_{DS} = 15\,V$, $I_D = 2\,mA$	f = 1 MHz
Noise Figure	NF		1		1		1	dB	$V_{DS} = 15\,V$, $I_D = 2\,mA$, $R_G = 1\,M\Omega$	f = 10 Hz
Equivalent Short Circuit Input Noise Voltage	$\bar{e}_N$		50		50		50	nV/√Hz	$V_{DG} = 15\,V$, $I_D = 2\,mA$	f = 10 Hz

Characteristics

		IFN5564 Min	IFN5564 Max	IFN5565 Min	IFN5565 Max	IFN5566 Min	IFN5566 Max	Unit	Test Conditions		
Saturation Drain Current Ratio (Pulsed)	$\dfrac{I_{DSS1}}{I_{DSS2}}$	0.95	1	0.95	1	0.95	1	– –	$V_{DG} = 15\,V$, $V_{GS} = \emptyset V$		
Differential Gate Source Voltage	$|V_{GS(1)} – V_{GS(2)}|$		5		10		20	mV	$V_{DS} = 15\,V$, $I_D = 2\,mA$		
Gate Source Voltage Differential Drift	$\dfrac{\Delta|V_{GS(f)} – V_{GS(f)}|}{\Delta T}$		10		25		50	µV/°C	$V_{DS} = 15\,V$,	$T_A = 25°C$	$T_B = 125°C$
			10		25		50	µV/°C	$I_D = 2\,mA$	$T_A = 55°C$	$T_B = 25°C$
Transconductance Ratio (Pulsed)	$\dfrac{g_{fs(1)}}{g_{fs(2)}}$	0.95	1	0.9	1	0.9	1	– –	$V_{DS} = 15\,V$, $I_D = 2\,mA$		

TO-71 Package
Dimensions in Inches (mm)

Pin Configuration
1 Source, 2 Drain, 3 Gate, 4 Omitted,
5 Source, 6 Drain, 7 Gate, 8 Omitted