

IFN5564, IFN5565, IFN5566

N-Channel Dual Silicon Junction Field-Effect Transistor

- Wide Band Differential Amplifier
- Commutators

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

Reverse Gate Source & Reverse Gate Drain Voltage
 Continuous Forward Gate Current
 Continuous Device Power Dissipation
 Power Derating

– 40 V
 50 mA
 650 mW
 3.3 mW/°C

At 25°C free air temperature:
 Static Electrical Characteristics

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

Dynamic Electrical Characteristics

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

Characteristics

Saturation Drain Current Ratio (Pulsed)	$\frac{I_{DSS1}}{I_{DSS2}}$	0.95	1	0.95	1	0.95	1	–	$V_{DG} = 15\text{V}$, $V_{GS} = \emptyset\text{V}$	
Differential Gate Source Voltage	$ V_{GS(1)} - V_{GS(2)} $		5		10		20	mV	$V_{DS} = 15\text{V}$, $I_D = 2\text{mA}$	
Gate Source Voltage Differential Drift	$\frac{\Delta V_{GS(f)} - V_{GS(f)} }{\Delta T}$		10		25		50	$\mu\text{V}/^\circ\text{C}$	$V_{DS} = 15\text{V}$, $T_A = 25^\circ\text{C}$, $T_B = 125^\circ\text{C}$	
			10		25		50	$\mu\text{V}/^\circ\text{C}$	$I_D = 2\text{mA}$, $T_A = 55^\circ\text{C}$, $T_B = 25^\circ\text{C}$	
Transconductance Ratio (Pulsed)	$\frac{g_{fs(1)}}{g_{fs(2)}}$	0.95	1	0.9	1	0.9	1	–	$V_{DS} = 15\text{V}$, $I_D = 2\text{mA}$	

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