

IFN5432, IFN5433, IFN5434

N-Channel Silicon Junction Field-Effect Transistor

- Analog Low On Resistance Switches
- Choppers

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

Reverse Gate Source & Reverse Gate Drain Voltage	- 25 V
Continuous Forward Gate Current	100 mA
Continuous Device Power Dissipation	300 mW
Power Derating	2.4 mW/°C

At 25°C free air temperature:

Static Electrical Characteristics

		IFN5432		IFN5433		IFN5434		Process NJ903	
		Min	Max	Min	Max	Min	Max	Unit	Test Conditions
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	- 25		- 25		- 25		V	$I_G = -1\mu\text{A}$, $V_{DS} = \emptyset\text{V}$
Gate Reverse Current	I_{GSS}		- 200		- 200		- 200	pA	$V_{GS} = -15\text{V}$, $V_{DS} = \emptyset\text{V}$
			- 200		- 200		- 200	nA	$V_{GS} = -15\text{V}$, $V_{DS} = \emptyset\text{V}$, $T_A = 150^\circ\text{C}$
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	- 4	- 10	- 3	- 9	- 1	- 4	V	$V_{DS} = 5\text{V}$, $I_G = 3\text{nA}$
Drain Saturation Current (Pulsed)	I_{DSS}	150		100		30		mA	$V_{DS} = 15\text{V}$, $V_{GS} = \emptyset\text{V}$
Drain Cutoff Current	$I_{D(OFF)}$		200		200		200	pA	$V_{DS} = 5\text{V}$, $V_{GS} = -10\text{V}$
			200		200		200	nA	$V_{DS} = 5\text{V}$, $V_{GS} = -10\text{V}$, $T_A = 150^\circ\text{C}$
Drain Source ON Voltage	V_{DS}		50		70		100	mV	$V_{GS} = \emptyset\text{V}$, $I_D = 10\text{mA}$
Static Drain Source ON Resistance	$r_{DS(ON)}$	2	5		7		10	Ω	$V_{DS} = \emptyset\text{V}$, $I_D = 10\text{mA}$

Dynamic Electrical Characteristics

Drain Source ON Resistance	$r_{ds(on)}$		5		7		10	Ω	$V_{GS} = \emptyset\text{V}$, $I_D = \emptyset\text{A}$	$f = 1\text{kHz}$
Common Source Input Capacitance	C_{iss}		60		60		60	pF	$V_{DS} = \emptyset\text{V}$, $V_{GS} = -10\text{V}$	$f = 1\text{MHz}$
Common Source Reverse Transfer Capacitance	C_{rss}		20		20		20	pF	$V_{DS} = \emptyset\text{V}$, $V_{GS} = -10\text{V}$	$f = 1\text{MHz}$

Switching Characteristics

Turn ON Delay Time	$t_{d(on)}$		4		4		4	ns	$V_{DD} = 1.5\text{V}$, $V_{GS(ON)} = \emptyset\text{V}$ $V_{GS(OFF)} = -12\text{V}$, $I_{D(ON)} = 10\text{mA}$ (IFN5432) $R_L = 145\Omega$ (IFN5433) $R_L = 143\Omega$ (IFN5433) $R_L = 140\Omega$
Rise Time	t_r		1		1		1	ns	
Turn OFF Delay Time	$t_{d(off)}$		6		6		6	ns	
Fall Time	t_f		30		30		30	ns	

TO-52 Package

Dimensions in Inches (mm)

Pin Configuration

1 Source, 2 Drain, 3 Gate & Case