

IFN410, IFN411, IFN412

N-Channel Matched Dual Silicon Junction Field-Effect Transistor

- Improved Replacements for the U410, U411, & U412
- Low Noise Differential Amplifier
- Differential Amplifier
- Wide-Band Amplifier

Absolute maximum ratings at T_A = 25°C

Reverse Gate Source & Gate Drain Voltage	-40V
Continuous Forward Gate Current	50 mA
Continuous Device Power Dissipation	375 mW
Power Derating	3.0 mW/°C
Operating Temperature Range	-55°C to +125°C
Storage Temperature Range	-65°C to +150°C

At 25°C free air temperature Static Electrical Characteristics

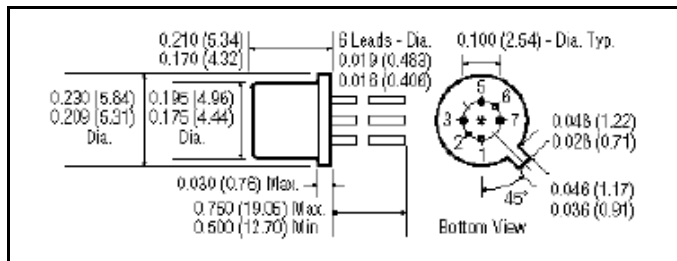
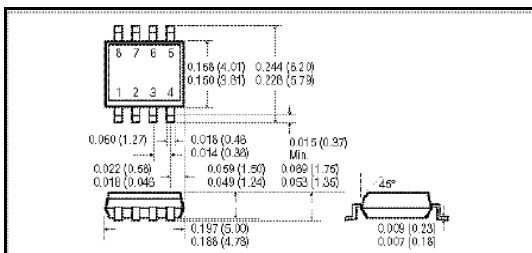
		410, 411, 412			Unit	Process NJ16	
		Min	Typ	Max		Test Conditions	
Gate Source Breakdown Voltage	V _{(BR)GSS}	-40			V	I _G = -1 uA, V _{DS} = 0 V	
Gate Reverse Current	I _{GSS}			-0.2	nA	V _{GS} = -30 V, V _{DS} = 0 V	
Gate Source Cutoff Voltage	V _{GS(OFF)}	-0.5		-3.5	V	V _{DS} = 20 V, I _D = 1 nA	
Gate Source Voltage	V _{GS}	-0.2		-3	V	V _{DS} = 20 V, I _D = 200 uA	
Drain Saturation Current (pulsed)	I _{DSS}	0.5		5	mA	V _{DS} = 20 V, V _{GS} = 0 V	
Gate Current	I _G			-200	pA	V _{DS} = 10 V, I _D = 200 uA	

Dynamic Electrical Characteristics

Common-Source Forward Transconductance	g _{fs}	1 0.6		4 1.2	mS	V _{DS} = 20 V, V _{GS} = 0 V V _{DS} = 20 V, I _D = 200 uA	f = 1 kHz
Common-Source Output Conductance	g _{os}			20 5	uS	V _{DS} = 20 V, V _{GS} = 0 V V _{DS} = 20 V, I _D = 200 uA	f = 1 kHz
Common-Source Input Capacitance	C _{iss}			4.5	pF	V _{DS} = 20V, V _{GS} = 0 V	f = 1 MHz
Common-Source Reverse Transfer Capacitance	C _{rss}			1.2	pF	V _{DS} = 20 V, V _{GS} = 0 V	f = 1 MHz
Equivalent Short Circuit Input Noise Voltage	~e _N			50	nV/√Hz	V _{DS} = 20 V, I _D = 200uA	f = 100 Hz

Matching Characteristics

		410	411	412	Units	Test Conditions
Differential Gate-Source Voltage	V _{GS1} - V _{GS2}	10	20	40	mV	V _{DG} = 20 V, I _D = -200 uA
Differential Gate Source Voltage with Temperature	$\frac{\Delta V_{GS1} - V_{GS2} }{\Delta T}$	10	25	80	μV/°C	V _{DG} = 20 V, I _D = 200 μA 25°C to 85°C
Common Mode Rejection Rate	CMRR (typ)	80	80	70	dB	V _{DD} = 10 V to V _{DD} = 20 V I _D = 200 uA



SOIC-8 Package Pin Configuration
 SMPU410, SMPU411, SMPU412
 1-G1, 2-D1, 3-S1, 4-G2,
 5-G2, 6-D2, 7-S2, 8-G1

TO-71:
 IFN410, IFN 411, IFN 412,

Pin Configuration
 1-S1, 2-D1, 3-G1,
 4-S2, 5-D2, 6-G2

Dimensions in Inches (mm)



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