matched dual n-channel JFETs *designed for . . .*

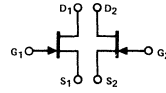
- **Cascode Amplifiers**
- **Balanced Mixers**

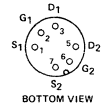
Performance Curves NZA See Section 4

BENEFITS

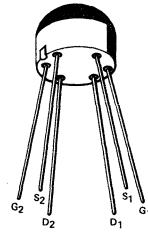
- Low Noise Figure
- Very Low Distortion +30 dBm Intercept Point

TO-105
See Section 5





BOTTOM VIEW



ABSOLUTE MAXIMUM RATINGS (25°C)

Drain-Gate or Gate-Source Voltage . . . . . –25 V
Gate Current . . . . . 10 mA
Total Device Dissipation
(25°C Free-Air Temperature) . . . . . 350 mW
Power Derating (to +125°C) . . . . . 3.5 mW/°C
Storage Temperature Range . . . . . –55 to +125°C
Operating Temperature Range. . . . . –55 to +125°C
Lead Temperature (1/16" from case for 10 seconds). . .300°C

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

		Characteristic		E430			E431			Unit	Test Conditions	
				Min	Typ	Max	Min	Typ	Max			
1	STATIC	I_{GSS}	Gate Reverse Current			-150			-150	pA	V_{GS} = -15 V, V_{DS} = 0	
2						-150			-150	nA		T = 150°C
3		BV_{GSS}	Gate-Source Breakdown Voltage	-25			-25			V	I_G = -1 μA, V_{DS} = 0	
4		$V_{GS(off)}$	Gate-Source Cutoff Voltage	-1.0		-4.0	-2.0		-6.0		V_{DS} = 10 V, I_D = 1 nA	
5		I_{DSS}	Saturation Drain Current (Note 1)	12		30	24		60	mA	V_{DS} = 10 V, V_{GS} = 0	
6		$V_{GS(f)}$	Gate-Source Forward Voltage			1.0			1.0	V	V_{DS} = 0, I_G = 10 mA	
7	DYNAMIC	g_{fs}	Common-Source Forward Transconductance	10		20	10		20	mmho	V_{DS} = 10 V, I_D = 10 mA	f = 1 kHz
8		g_{os}	Common-Source Output Conductance			150			150	μmho		
9		C_{gs}	Gate Source Capacitance			5.0			5.0	pF	V_{GS} = -10 V, V_{DS} = 0	f = 1 MHz
10		C_{gd}	Drain Gate Capacitance			2.5			2.5			
11		$\bar{e}_n$	Equivalent Short-Circuit Input Noise Voltage		10			10		$\frac{nV}{\sqrt{Hz}}$	V_{DS} = 10 V, I_D = 10 mA	f = 100 Hz
12	HIGH FREQ	g_{fs}	Common-Source Forward Transconductance		12			12		mmho	V_{DS} = 10 V, I_D = 10 mA	f = 100 MHz
13		g_{os}	Common-Source Output Conductance		0.15			0.15				
14		g_{ig}	Power-Match Source Admittance		12			12				
15		G_c	Conversion Gain (Note 2)		3.0			3.0		dB	V_{DS} = 20 V, V_{GS} = 1/2 $V_{GS(off)}$	f = 100 MHz
16		IMD	Intercept Point (Notes 2 and 3)		+30			+30		dBm		
17	MATCH	$\frac{I_{DSS1}}{I_{DSS2}}$	Saturation Drain Current Ratio (Note 4)	0.9		1.0	0.9		1.0		V_{DS} = 10 V	V_{GS} = 0
18		$\frac{V_{GS(off)1}}{V_{GS(off)2}}$	Gate-Source Cutoff Voltage Ratio (Note 4)	0.9		1.0	0.9		1.0			I_D = 1 nA
19		$\frac{g_{fs1}}{g_{fs2}}$	Transconductance Ratio (Note 4)	0.9		1.0	0.9		1.0			I_D = 10 mA

NOTES:
1. Pulse test duration = 300 μs, duty cycle ≤ 3%.
2. VHF single-balanced mixer drain load impedance 2K Ω.
3. 2-tone 3rd-order IMD.
4. Assumes smaller value in numerator.

NZA