General Purpose GaAs FETs

查询CFA0101供应商

July 2006 - Rev 31-Jul-06

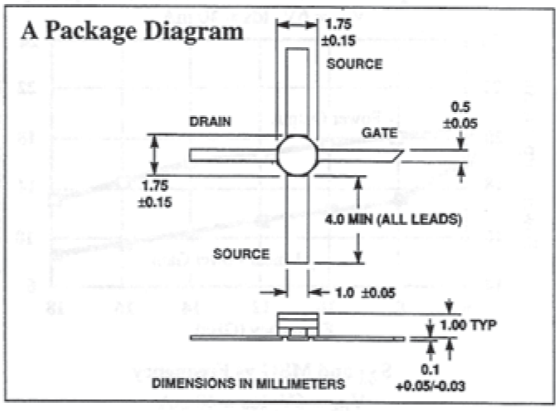
CFA0101

Features

- High Gain
- 19 dBm Power Output
- Ion Implanted Material
- 70 Mil Hermetic Package

Applications

- Satellites
- Point-to-Point Radios
- Commercial Communications
- Defense Electronics



General Description

The CFA0101-G series is a family of high-gain FETs ideally suited for high performance gain block applications. This family of devices is assembled in an industry standard 70 mil hermetic package. This family of high reliability devices is ideally suited for operation-critical applications where reliability and performance are required.

Typical Noise Parameters

(Vds=6V, Ids=40 mA)

Freq (GHz)	NF_{opt}	G_A (dB)	Gamma Opt Mag	Gamma Opt Ang	Rn/50
2.0	0.94	21.5	0.81	39	1.57
4.0	1.18	17.6	0.66	78	0.67
6.0	1.46	15.3	0.56	115	0.19
8.0	1.82	13.7	0.51	151	0.04
10.0	2.35	12.5	0.48	-175	0.14
12.0	2.87	11.6	0.48	-140	0.42
14.0	3.29	10.9	0.50	-105	0.78
16.0	3.70	10.3	0.51	-69	1.16
18.0	4.00	9.9	0.53	-32	1.46

Absolute Maximum Ratings

Drain-Source Voltage (Vds)	8 V
Gate-Source Voltage (Vgs)	-5 V
Drain Current (Ids)	Idss
Continuous Dissipation (Pt)	800 mW
RF Power In (Pin)	+17 dBm
Channel Temperature (Tch)	175 °C
Storage Temperature (Tstg)	-65 °C to +175 °C

Electrical Characteristics (Ambient Temperature T = 25 °C)

Parameter	Bias Vds (V)	Bias Ids (mA)	Frequency (GHz)	Units	Grade	Min	Typ	Max
P1dB	6.0	40.0	12.0	dBm	G1	19.0	19.5	-
					G2	18.0	18.5	-
					G3	17.0	17.5	-
GL	6.0	40.0	12.0	dB	G1	9.0	9.5	-
					G2	9.0	9.5	-
					G3	8.0	8.5	-
$IS211^2$	6.0	40.0	2.0	dB			14.0	
			10.0	dB			8.7	
			18.0	dB			5.1	
NFopt	6.0	40.0	12.0	dB			2.8	
gm	Vds = 3.0V	Vgs = 0V		mS			60.0	
Idss	Vds = 3.0V	Vgs = 0V		mA		40.0	60.0	120.0
Vp	Vds = 3.0V	Ids = 1 mA		Volts		-0.7	-1.3	-2.5
BVgd	Igd = 100 uA			Volts		-5.5	-8.0	
Rth				°C/W			250	

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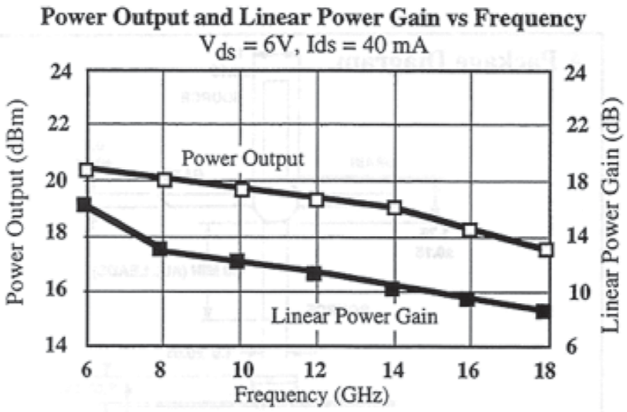
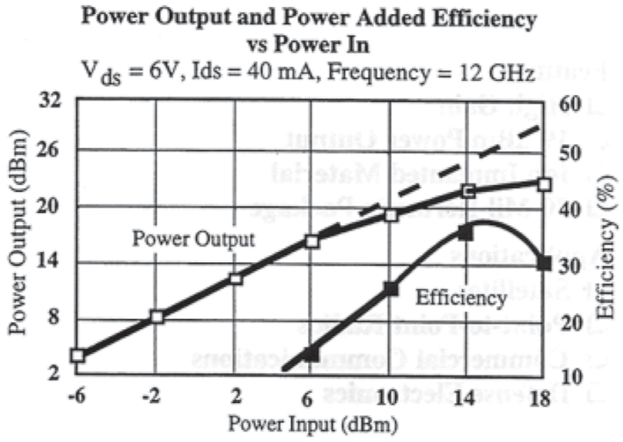
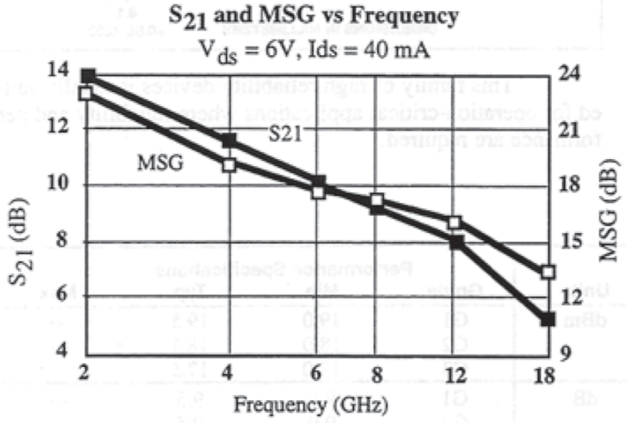
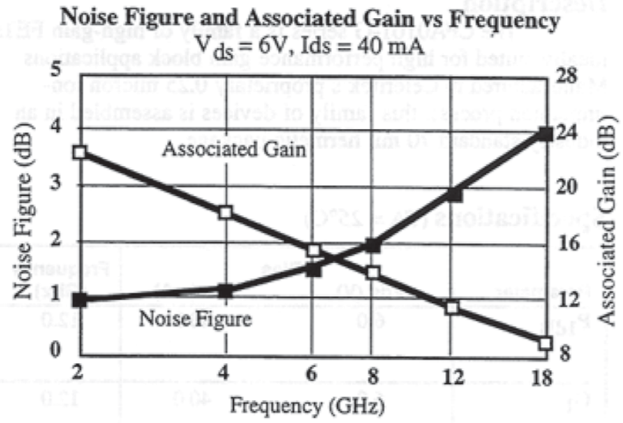
Typical Performance (TA = 25°C)









Typical Scattering Parameters (TA = 25°C, Vds = 3V, Ids = 15mA)

Frequency (GHz)	S11 (Mag)	S11 (Ang)	S21 (dB)	S21 (Mag)	S21 (Ang)	S12 (dB)	S12 (Mag)	S12 (Ang)	S22 (Mag)	S22 (Ang)	MSG (dB)
2.0	0.95	-37	14.0	5.01	145	-32.4	0.02	59	0.55	-17	23.2
4.0	0.84	-80	11.9	3.94	106	-27.4	0.04	40	0.58	-45	19.7
6.0	0.75	-114	10.4	3.31	75	-25.6	0.05	26	0.58	-64	18.0
8.0	0.63	-157	9.9	3.13	44	-24.7	0.06	12	0.51	-76	17.3
10.0	0.61	165	8.7	2.72	12	-24.2	0.06	-3	0.41	-113	16.5
12.0	0.59	135	8.0	2.51	-16	-23.4	0.07	-4	0.50	-138	15.7
14.0	0.60	94	7.1	2.26	-48	-22.1	0.08	-20	0.49	-167	14.6
16.0	0.61	71	5.9	1.97	-79	-21.4	0.09	-38	0.62	157	13.7
18.0	0.57	41	5.1	1.80	-111	-21.7	0.08	-60	0.68	139	13.4

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