



Features

- Very Low Noise 1.1 dB Typ.
- High +36 dBm Typ. IP3
- 15.5 dB Typical Gain
- 6.0 Volt Bias
- 26% High Power Added Efficiency

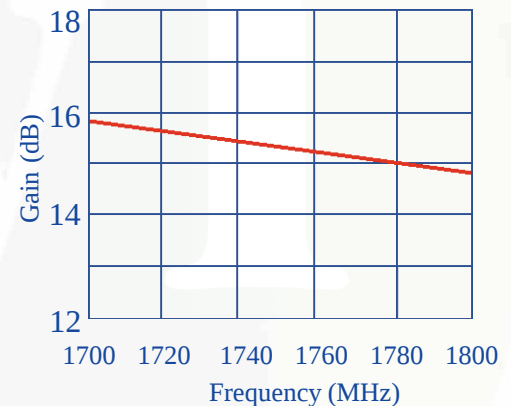
The MPS-1820A9-85 is a low noise, high dynamic range amplifier designed for PCS-1900 receiver applications. The circuit is matched to 50 ohm and employs a single stage GaAs FET with internal matching to provide exceptional noise figure, 1.1 dB combined with extremely high IP3, +36 dBm. Typical applications are PCS base station receivers and Tower mounted LNA's.

Specifications

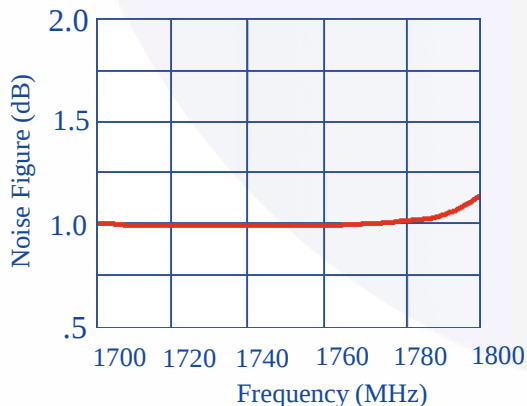
- Electrical at 25°C, V_{dd}= 6.0 V, Z_o= 50 Ω

Symbol	Parameter	Min.	Typical	Max	Unit
Freq	Frequency Range	1850		1910	MHz
SSG	Small Signal Gain	14	15.5		dB
P1dB	P out at 1 dB Compression		+22.0		dBm
IP3	Third-order Intercept	+33	+36.0		dBm
NF	Noise Figure		1.1	1.5	dB
VSWR	Input VSWR		2.0:1	2.5:1	
ΔGOF	Gain Variation over Freq.		+/-0.2	+/-0.5	dB
ΔGOT	Gain Variation over Temp.		-0.015		dB/°C
I _{dd}	DC Current		100	137	mA
PAE	Power Added Efficiency		26		%

Gain vs. Frequency



Noise Figure vs. Frequency



Absolute Maximum Ratings

Maximum Bias Voltage	7.0 V
Maximum Continuous RF Input Power	240 mW
Maximum Peak Input Power	360 mW
Maximum Case Operating Temperature	+85°C
Maximum Storage Temperature	-65°C to +150°C



MPS-1820A9-85

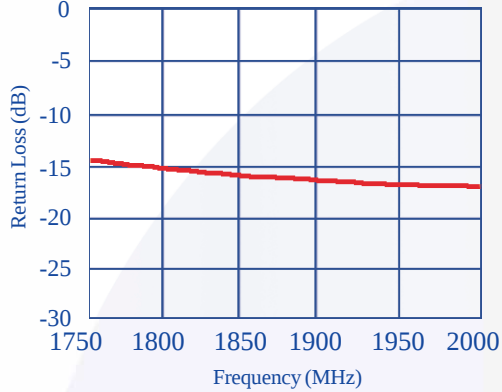
1850 to 1910 MHz Low Noise Receiver Amplifier

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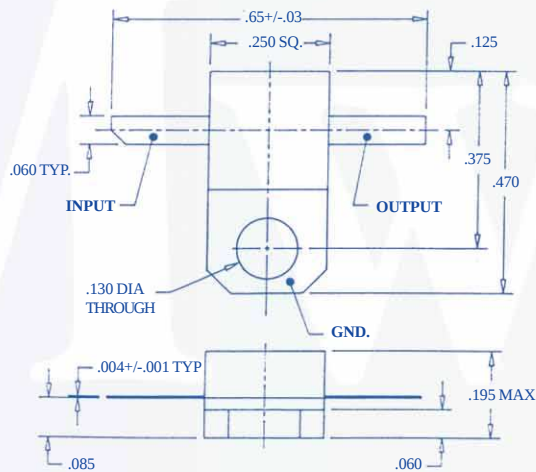
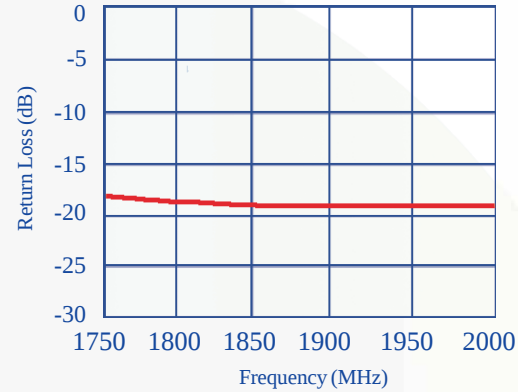
Return Loss vs. Frequency

INPUT



Return Loss vs. Frequency

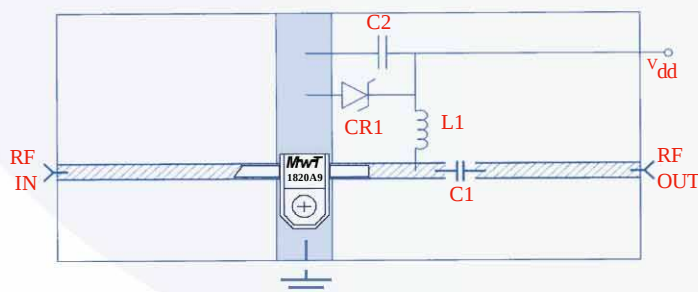
OUTPUT



Pin	Connection
1	N/C
2	N/C
3	RF Input
4	NC
5	N/C
6	N/C
7	N/C
8	RF Output, Vdd
9	N/C
10	N/C
Case	Ground

Outline Diagrams

Application Circuit



C1	100 pF	Chip Capacitor
C2	.22 μ F	Capacitor
L1	160 nH	Printer or Wound Coil
CR1	8.0 V	Zener Diode
		50 Ω Microstrip Line