



MPS-1718A9-85

1710 to 1785 MHz Low Noise Receiver Amplifier

Features

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



Description

The MPS-1820A9-85 is a low noise high dynamic range amplifier designed for DCS-1800 receiver applications. The circuit is matched to 50 Ω 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 DCS-1800 base station receivers and Tower mounted LNA's.

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

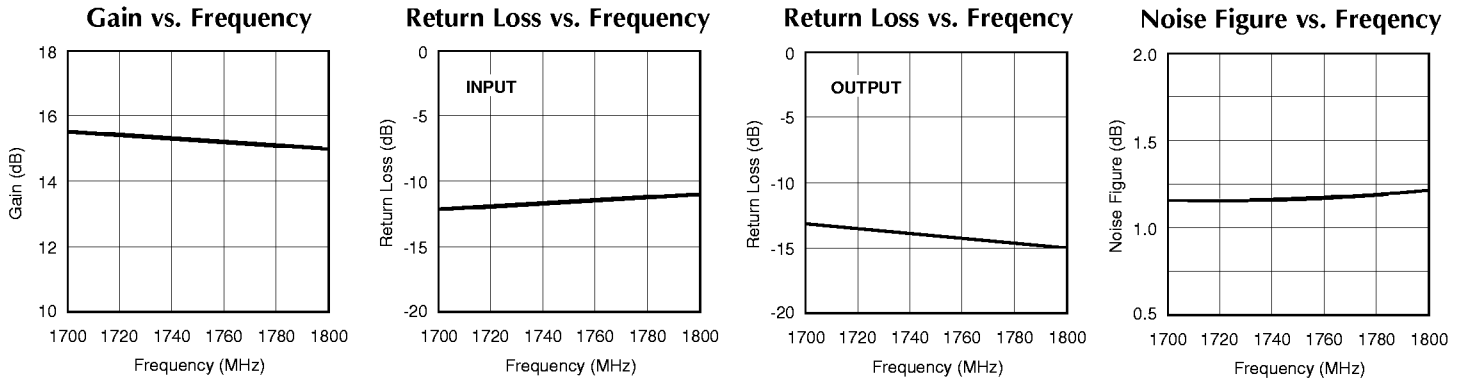
Symbol	Parameter	Minimum	Typical	Maximum	Unit
Freq	Frequency Range	1710		1785	MHz
SSG	Small Signal Gain	14	15.5		dB
P1dB	Pout at 1 dB Compression		+22.0		dBm
IP3	Third-order Intercept ¹	+33.0	+36.0		dBm
NF	Noise Figure		1.1	1.5	dB
VSWR	Input/Output VSWR		2.0:1	2.5:1	
Δ GOF	Gain Variation over Frequency		\pm 0.2	\pm 0.5	dB
Δ GOT	Gain Variation over Temperature		-0.15		dB/°C
I _{dd}	DC Current		100	150	mA
PAE	Power Added Efficiency		26		%

¹ Two tone tests at Pout = +5 dBm for each tone; centered at 1750 MHz with 20 MHz separation.

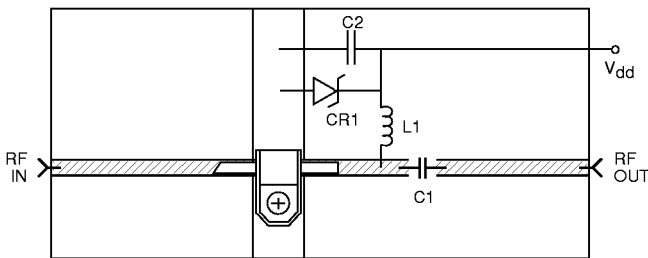
Absolute Maximum Ratings

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

Typical Performance at +25°C



Application Circuit

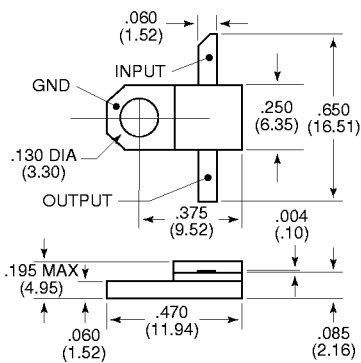


C1	100 pF	Chip Capacitor
C2	.22 μ F	Capacitor
L1	160 nH	Printed or Wound Coil
CR1	7.0 V	Zener Diode
		50 Ω Microstrip Line

Board material FR-4 or equivalent.

Outline Diagram

Half Flange Package (-85)



Dimensions in inches and (mm)

Ordering Information

Part Number	Package
MPS-1718A9-85	Half Flange Package
MPS-1718A9-85EV	Half Flange Package on Evaluation Board