

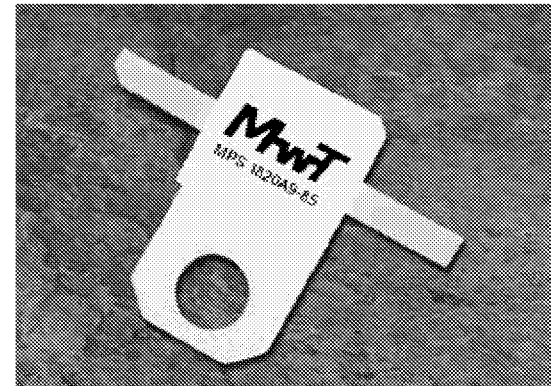


# MPS-1820A9-85

## 1850 to 1910 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 PCS-1900 receiver applications. The circuit is matched to 50  $\Omega$  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, Tower mounted LNA's and receiver multi-couplers.

### Electrical Specifications at 25°C, V<sub>dd</sub> = 6.0 V, Z<sub>o</sub> = 50 $\Omega$

Symbol	Parameter	Minimum	Typical	Maximum	Unit
Freq	Frequency Range	1850		1910	MHz
SSG	Small Signal Gain	14	15.5		dB
P1dB	Pout at 1 dB Compression		+22.0		dBm
IP3	Third-order Intercept <sup>1</sup>	+33.0	+36.0		dBm
NF	Noise Figure		1.1	1.5	dB
VSWR	Input/Output VSWR		2.0:1	2.5:1	
$\Delta$ GOF	Gain Variation over Frequency		$\pm$ 0.2	$\pm$ 0.5	dB
$\Delta$ GOT	Gain Variation over Temperature		-0.15		dB/°C
I <sub>dd</sub>	DC Current		100	137	mA
PAE	Power Added Efficiency		26		%

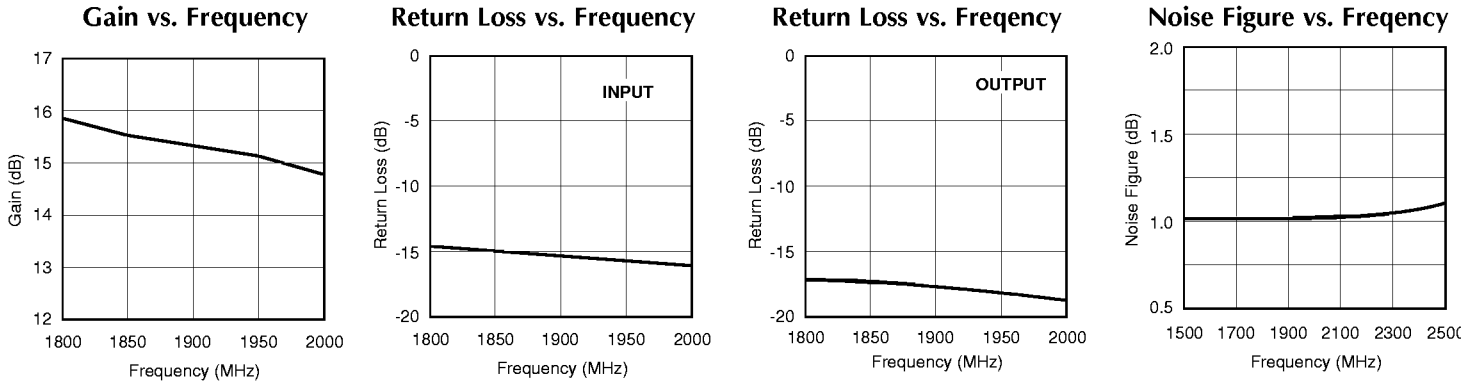
<sup>1</sup> Two tone tests at Pout = +5 dBm for each tone; centered at 1880 MHz with 20 MHz separation.

### Absolute Maximum Ratings

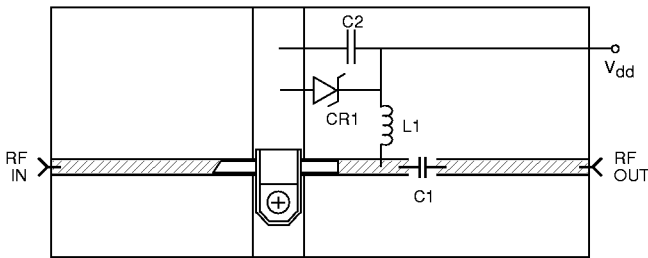
Maximum Bias Voltage	7.0 V
Maximum Continuous RF Input Power	240 mW
Maximum Peak Input Power	360 mW
Maximum Case Operating Temperature	+85°C
Maximum Storage Temperature	-65°C to +150°C

# MPS-1820A9-85

## Typical Performance at 25°C



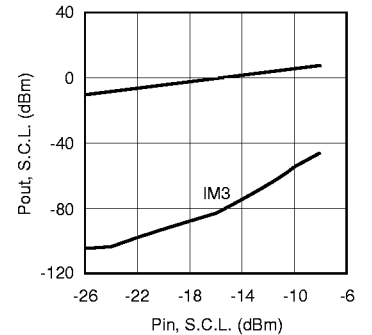
## Application Circuit



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

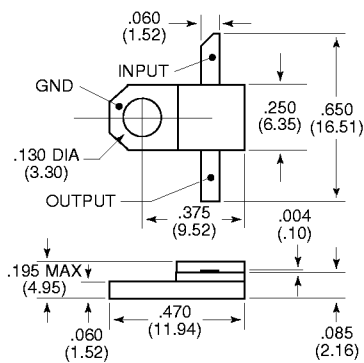
Board material FR-4 or equivalent.

## Intermodulation Products



## Outline Diagram

### Half Flange Package (-85)



Dimensions in inches and (mm)

## Ordering Information

Part Number	Package
MPS-1820A9-85	Half Flange Package
MPS-1820A9-85EV	Half Flange Package on Evaluation Board

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