



## Quick Reference Guide

### Using the AGB3307 as a Replacement for the NGA-689

The AGB3307 InGaP HBT Gain Block from ANADIGICS is a wideband device with high linearity, low noise and low distortion that can be used as a replacement for the NGA-689 device from Sirenza Microdevices. Both offered in convenient SOT-89 surface mount packages, the two devices have comparable performance metrics and application circuits:

#### NGA-689 ELECTRICAL CHARACTERISTICS

PARAMETER	FREQUENCY	VALUE
Gain	850 MHz	11.9 dB
	1950 MHz	11.7 dB
Output IP3	850 MHz	+36.9 dBm
	1950 MHz	+33.6 dBm
Output P1dB	1950 MHz	+18.9 dB
Noise Figure	850 MHz	6.1 dB
Device Current		80 mA

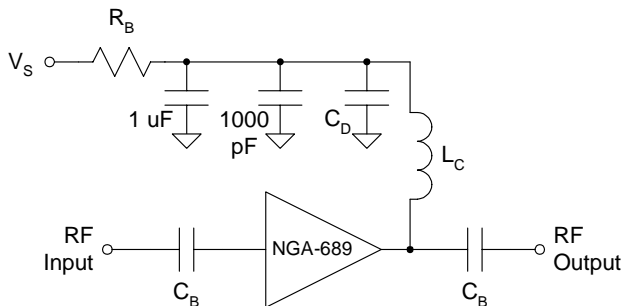
Test Conditions:  $V_s = +8V$ ,  $R_B = 27\Omega$  for 80mA current, Ambient Temperature =  $+25^\circ C$ ,  $50\Omega$  system.

#### AGB3307 ELECTRICAL CHARACTERISTICS

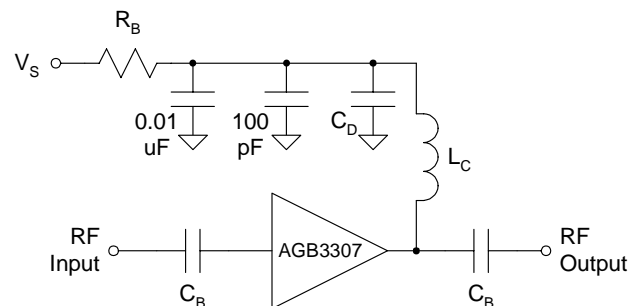
PARAMETER	FREQUENCY	VALUE
Gain	850 MHz	11.9 dB
	1950 MHz	11.7 dB
Output IP3	850 MHz	+41.9 dBm
	1950 MHz	+36.0 dBm
Output P1dB	1950 MHz	+17.4 dB
Noise Figure	850 MHz	5.0 dB
Device Current		80 mA

Test Conditions:  $V_s = +8V$ ,  $R_B = 38\Omega$  for 80mA current, Ambient Temperature =  $+25^\circ C$ ,  $50\Omega$  system.

#### NGA-689 APPLICATION CIRCUIT



#### AGB3307 APPLICATION CIRCUIT



NGA-689 COMPONENT	FREQUENCY	
	850 MHz	1950 MHz
$C_B$	100 pF	68 pF
$C_D$	68 pF	22 pF
$L_C$	33 nH	22 nH

AGB3307 COMPONENT	FREQUENCY	
	850 MHz	1950 MHz
$C_B$	0.01 uF	0.01 uF
$C_D$	10 pF	10 pF
$L_C$	100 nH	100 nH

Recommended Bias Resistor Values for 80mA Current on NGA-689				
$V_s$	+8 V	+9 V	+10 V	+12 V
$R_B$	27 $\Omega$	39 $\Omega$	51 $\Omega$	75 $\Omega$

Recommended Bias Resistor Values for 80mA Current on AGB3307				
$V_s$	+8 V	+9 V	+10 V	+12 V
$R_B$	38 $\Omega$	51 $\Omega$	63 $\Omega$	88 $\Omega$

The information contained herein is presented for reference only. Actual performance of the AGB3307 device is detailed in the product data sheet. NGA-689 device performance is extracted from Rev B of the product data sheet.