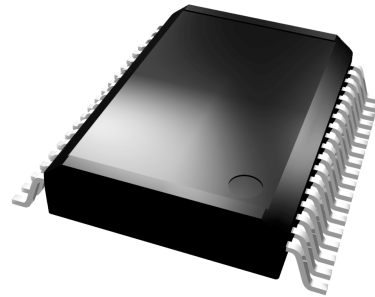


**FEATURES**

- Attenuation Range: 0-56 dB, adjustable in 2 dB increments via a serial 3 wire control
- Meets DOCSIS distortion requirements at +60 dBmV output signal level
- Low noise figure
- Low cost integrated monolithic GaAs amplifier with step attenuator
- +5V Operation
- Power saving shutdown capability

**APPLICATIONS**

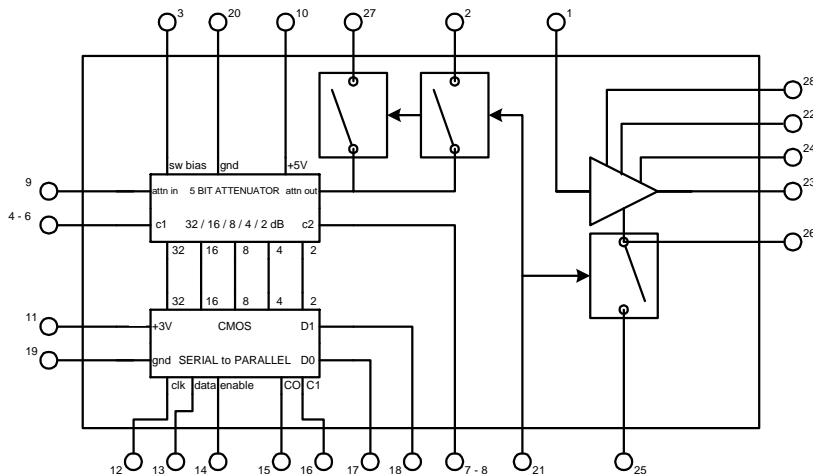
- DOSIS Compliant IP Telephony Systems.
- CATV Interactive Set-Top Box
- Home Gateway



**Ordering Information**  
**ARA3000 S23 -40 to +85° C**  
**28 PIN SSOP PACKAGE**

**Description**

The ARA3000 is a GaAs IC designed to provide additional reverse path amplification and isolation in IP Telephony Systems. The precision step attenuator can be digitally controlled to set the output power to the desired level. The single amplifier stage at the output is capable of meeting both the DOCSIS distortion and noise requirements from a single +5V supply. In addition, the output amp can be shut down and bypassed by an on chip switch to save power. The ARA3000 is supplied in a 28-pin SSOP package featuring an exposed paddle on the bottom of the package. Soldering the exposed paddle to the ground plane of the PC board ensures the lowest possible thermal resistance for the IC resulting in a long MTF.



**Figure 1: Functional Block Diagram**

DC Electrical Specifications (TA=25°C, Vdd=+5V, Vdd CMOS=+3V)			
PARAMETER	TYP	UNIT	COMMENTS
Current Consumption			
+5V	12	mA	Amplifier Disabled
+5V	120	mA	Amplifier Enabled
+3V	2	mA	Max Attenuation Setting
AC Electrical Specifications (TA=25°C, Vdd=+5V, Vdd CMOS=+3V)			
PARAMETER	TYP	UNIT	COMMENTS
Gain	16	dB	Attenuator setting @ 0 dB Amplifier enabled
	-1.7	dB	Attenuator setting @ 0 dB Amplifier disabled (bypassed)
Gain Flatness	0.5	dB	5 to 42 MHz
Gain variation over temp	-0.006	dB/C	
Attenuation Step Sizes			
2 dB	1.7	dB	
4 dB	3.9	dB	
8 dB	8.1	dB	
16 dB	15.9	dB	
32 dB	30.7	dB	
2nd Harmonic Level	-55	dBc	Pout = +60 dBmV (amp enabled)
	-60	dBc	Pin = + 58 dBmV (amp disabled)
3rd Harmonic Level	-60	dBc	Pout = +60 dBmV (amp enabled)
	-60	dBc	Pin = + 58 dBmV (amp disabled)
Maximum Isolation	-60	dB	Attenuator setting of 62 dB and amp disabled
Noise Figure	3.5	dB	Attenuator setting of 0 dB and amp enabled
Input & Output Impedance	75	ohms	
Input & Output Return Loss	-12	dB	



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