SANYO

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LA7783V Preliminary Specification

AGC Amplifier IC

Description: The LA7783V, a bipolar monolithic IC, is a AGC amplifier with Driver amplifier for ADC. It is ideally suited for use with receiver systems receiving QPSK and/or QAM data transmissions.

Package: SSOP-16 (0.65mm pitch)

Functions:

IF AGC control
RF AGC control output
IF AGC amplifier
Driver amplifier
ADC drive capability

Specifications:

Vcc = 5V
IF Input Frequency Range = 30 ~ 100MHz
IF Output Amplitude = 2Vp-p (differential)
IF AGC Amplifier Gain = 34dB
Driver Amplifier Gain = 26dB
AGC Gain Reduction = 60dB
IF Input IP3 = 50dBmVrms(Gain min.)
NF = 10dB (Gain max.)
IF AGC voltage range = 1.5 ~ 2.7V
RF AGC voltage range = 0.3 ~ 1.5V

Block Diagram:

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Maximum Ratings

Parameter	Symbol	Condition	Rating	Unit
Maximum Supply Voltage	Vcc_{max}	Pin 10, Pin 12, Pin 13, Pin 14	7.0	V
Circuit Voltages	V_{max}	Pin 11, Pin 4	Vcc	V
Circuit Current	I_6	Pin 6 sink current	2	mA
	I_8	Pin 8 sink current	2	
	I_9	Pin 9 sink current	2	
	I_{13}	Pin 13 source current	0.3	
Allowable Power Dissipation	P_{dmax}	Ta<=85 degC	360*	mW
Operating Temperature Range	T_{opg}		-20 ~ 85	degC
Storage Temperature Range	T_{stg}		-55 ~ 150	degC

*On the board

Recommended Operating Conditions

Parameter	Symbol	Condition	Rating	Unit
Recommended Supply Voltage	Vcc	Pin 10, Pin 14	5.0	V
Operating Supply Voltage Range	Vcc_{op}	Pin 10, Pin 14	4.5 ~ 5.5	V

AC Characteristics at Ta = 25degC, Vcc = 5.0V

Parameter	Symbol	Pin No.	Condition	Rating			Unit
				Min	Typ	Max	
Circuit Current	I_{total}	10,12,13,14	No Signal		35		mA
IF Input Frequency Range	$f_{(in)}$	1,16		30	-	100	MHz
Input Sensitivity	$V_{in(IF)}$	1,16		-	-5	-	dBmV
Noise Figure	NF	1,16	Gain max	-	10	-	dB
IF Input IP3	IP3	1,16	Gain min	-	50	-	dBmV
Total Amplifier Gain	$G_{(AGC)}$	8,9/1,16		-	61		dB
AGC Range 1	GR1	1,16	Pin3=Gnd	20		40	dB
AGC Range 2	GR2	1,16	Pin3 is short to Pin4	-	60	-	dB
IF Output Level	$V_{o(IF)}$	8,9	Differential output	-	2.0	-	V_{p-p}
RF AGC Output Level	$V_{o(RF)}$	13		0.3		Vcc	V

Note:
AGC Range 1 -- The delay point will be changed by the voltage of pin4. During the RF AGC operation the IF AGC will be stop to operate.
AGC Range 2 -- The delay point will be changed by the voltage of pin4. During the RF AGC operation the IF AGC still operates continuously.

LA7784H BLOCK DIAGRAM