


SANYO Semiconductors

DATA SHEET

LA7793V — Monolithic Linear IC With Driver amplifier for ADC AGC amplifier

Overview

The LA7793V 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.

Functions

- IF AGC control
- IF AGC amplifier
- IF Step Gain Controlled amplifier
- Driver amplifier
- ADC drive capability

Specifications

Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum Supply Voltage	V _{CC} max	Pins 12, 13 and 14	7.0	V
Circuit Voltages	V max	Pin 11	V _{CC}	V
Circuit Current	I ₈	Pin 8 sink current	2	mA
	I ₉	Pin 9 sink current	2	mA
Allowable Power Dissipation	P _d max	Ta ≤ 85°C *	360	mW
Operating Temperature	T _{opr}		-40 to +85	°C
Storage Temperature	T _{stg}		-55 to +150	°C

* Mounted on specified board: 114.3mm × 76.1mm × 1.6mm, glass epoxy board.

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Recommended Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Supply Voltage	V _{CC}	Pins 12,13 and 14	5.0	V
Operating Supply Voltage Range	V _{CC} op	Pins 12,13 and 14	4.5 to 5.5	V

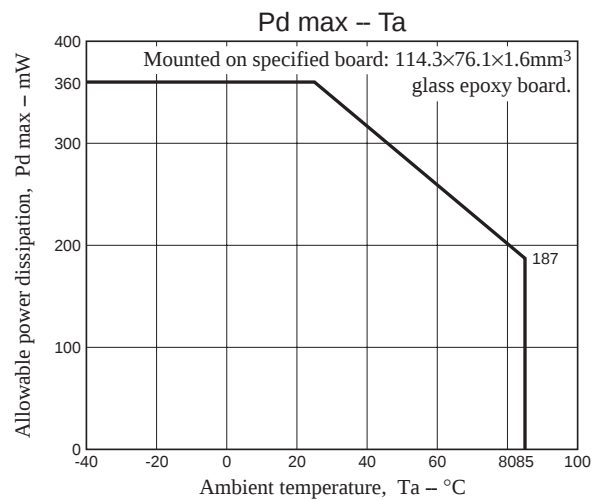
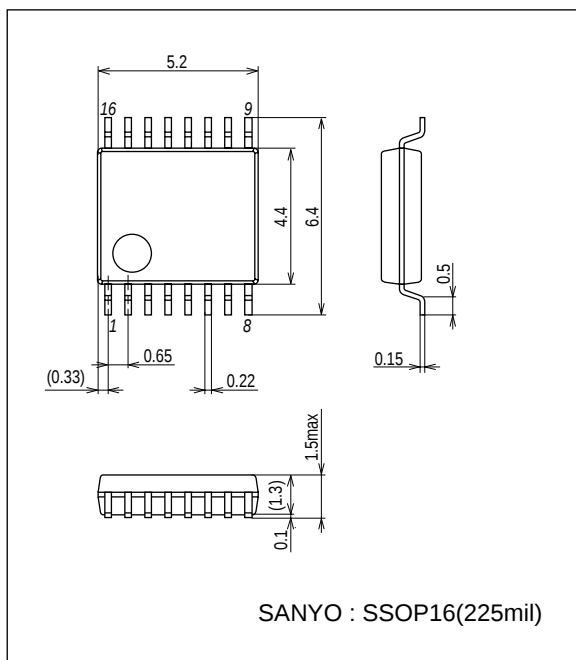
Electrical Characteristics at Ta = 25°C, V_{CC} = 5V

Parameter	Symbol	Pin No.	Conditions		Ratings			Unit
					min	typ	max	
Circuit Current	I _{total}	12, 13, 14	No signal.		27	36	46	mA
IF Input Frequency Range	f(in)	8, 9	Fc: -3dB		30		100	MHz
Noise Figure	NF	8, 9	50MHz V ₁₁ = 2.5V	gnd: pin 3. open: pins 4, 5, 6 and 7.		10		dB
				gnd: pin 7. open: pins 3, 4, 5 and 6.		7		dB
Inter Modulation	IM3	8/1,16 9/1,16	V ₁₁ = 2.5V f1: 50MHz f2: 56MHz	Output = 110dBμ each	40	50		dB
Total Amplifier Gain	G1	8/1,16 9/1,16	50MHz V ₁₁ = 2.5V	gnd: pin 3. open: pins 4, 5, 6 and 7.	29.5	32	34.5	dB
	G2			gnd: pin 4. open: pins 3, 5, 6 and 7.	33.5	36	38.5	dB
	G3			gnd: pin 5 open: pins 3, 4, 6 and 7.	37.5	40	42.5	dB
	G4			gnd: pin 6. open: pins 3, 4, 5 and 7.	41.5	44	46.5	dB
	G5			gnd: pin 7 open: pins 3, 4, 5 and 6.	45.5	48	50.5	dB
AGC Range	GR	8/1,16 9/1,16	V ₁₁ = 0.5 to 2.5V IF Output Level < ±1dB		40			dB
Gain Step	GS	8/1,16 9/1,16	50MHz V ₁₁ = 2.5V	G2-G1	3	4	5	dB
				G3-G2	3	4	5	dB
				G4-G3	3	4	5	dB
				G5-G4	3	4	5	dB
IF Output Level 1	V _O (IF)1	8	50MHz	Output Level		1.0		Vp-p
IF Output Level 2	V _O (IF)2	9	V ₁₁ = 2.5V			1.0		Vp-p

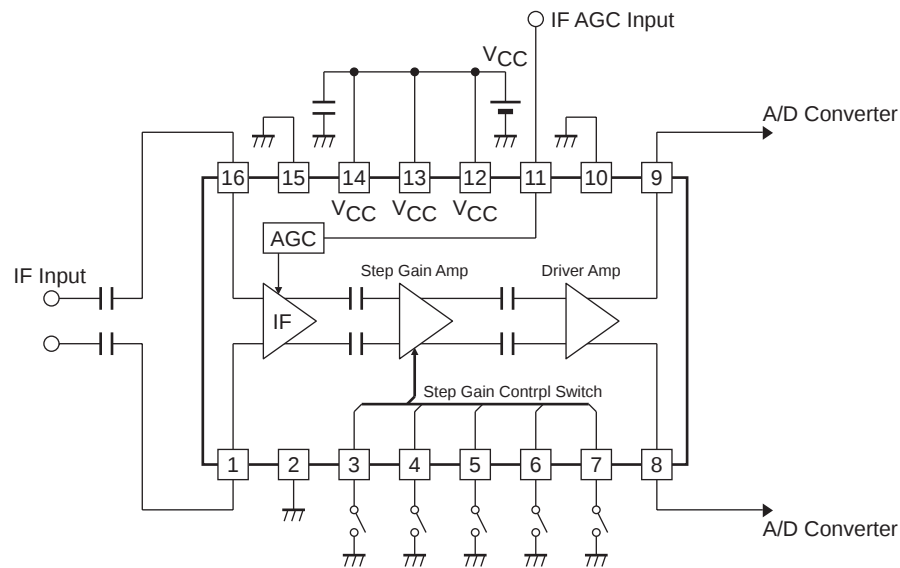
Package Dimensions

unit : mm (typ)

3178B



Block Diagram



Please connect only one pin to a ground among Pins 3, 4, 5, 6 and 7.

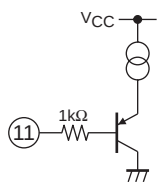
Pin Function

Pin No.	Function	Equivalent circuit
1 16	IF input.	
2	GND	
3 4 5 6 7	Step Gain Control Switch.	
8 9	Driver Output.	
10	GND	

Continued on next page.

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Pin No.	Function	Equivalent circuit
11	AGC Control.	
12	V _{CC}	
13		
14		
15	GND	

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