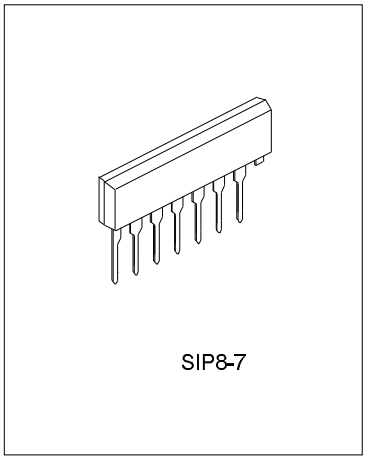
MIC AMP IC

DESCRIPTION

SA2011 is suitable for audio MIC amplifier of portable cassette tape recorder and karaoke.



FEATURES

* Built in ALC DET Circuit.
* Built in NFB resistance. (Voltage gain is fixed)
  Gv = 47dB (Typ.) : f=1kHz, ALC OFF
* ALC Level: Vout(ALC) = 0.6Vrms(Typ.)
* ALC Range: R_{ALC} = 58dB(Typ.)
* Operating Supply Voltage Range: V_{CC}=4V~14V

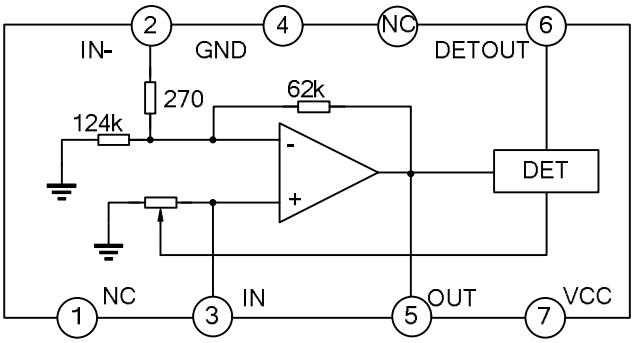
APPLICATIONS

* Cassette tape recorder, karaoke, etc…

ORDERING INFORMATION

Device	Package
SA2011	SIP8-7

BLOCK DIAGRAM



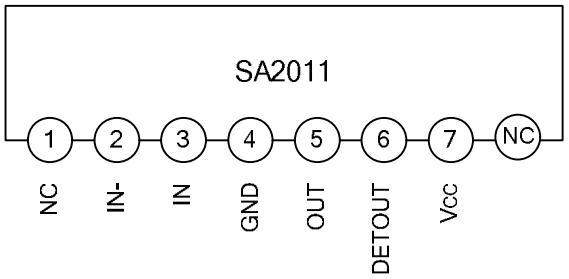
ABSOLUTE MAXIMUM RATING (Tamb=25°C)

Characteristics	Symbol	Rating	Unit
Maximum Supply Voltage	V_{CC} max	14	V
Allowable Power Dissipation	P_d max	900	mW
Operating Temperature	T_{opr}	–25 ~ +75	°C
Storage Temperature	T_{stg}	–55 ~+150	°C

ELECTIVAL DHARACTERISTICS (V_{CC}=7V, f_r =1kHz, R_L=10kΩ, T_{amb}=25°C)

Characteristics	Symbol	Test condition	Min.	Typ.	Max.	Unit
Quiescent Current	I_{CCQ}	V_{IN} =0, ALC ON	--	5.0	8.0	mA
Voltage Gain	G_V	--	45.5	47	48.5	dB
Maximum Output Voltage	V_{om}	THD = 1%	1.0	1.3	--	Vrms
Total Harmonic Distortion	THD	V_{OUT}= 0.3Vrms BW = 400Hz~30kHz	--	0.2	0.5	%
ALC Level	V_{out}(ALC)	V_{IN}= 0.0178Vrms(-35dBv)	0.7	0.8	0.9	Vrms
ALC Range	R_{ALC}	3dB up	40	58	--	dB
Attack Time	T_{ATK}	V_{IN}=1.41mVrms(-57.0dBV) →0.014Vrms(-37.0dBV)	--	0.05	--	s
Recovery Time	T_{RCV}	V_{IN}=0.014Vrms(-37.0dBV) →0.447mVrms(-67.0dBV)	--	2	--	s
Ripple Rejection Ratio	R.R.	f=100Hz,V_{ripple} = 0.1Vrms	-30	-46	--	dB
Input Resistance	R_{IN}		--	20	--	kΩ
Equivalent Input Noise Voltage	V_{ni}	BW = 20Hz~20kHz G_V = 47dB, R_g = 2.2kΩ	--	1.4	3.0	μV

PIN CONFIGURATION



Note: When the seal is looked in positive direction, the left pin on the bottom is the first pin (Pin 1).

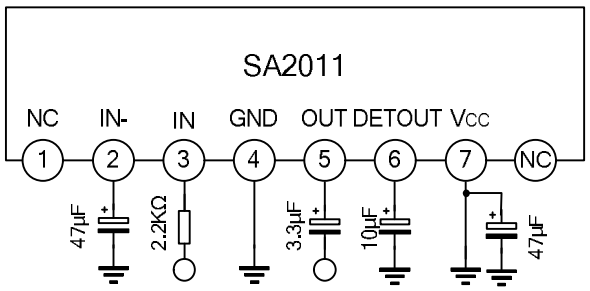
PIN DESCRIPTIONS

Pin no.	Pin name	Description
1	NC	No connection.
2	IN-	Feedback port.
3	IN	Positive input of AMP.
4	GND	Ground.
5	OUT	Output of AMP.
6	DETOUT	Output of ALC DET, connected to a 10μF capacitance .
7	Vcc	Vcc.

FUNCTION DESCRIPTION

1. This IC built-in ALC detect circuit. When input large signal, the ALC become high level, and control the output amplitude; when input small signal, the ALC is shut down, output gain is fixed.
2. Voltage gain of amplifier is determined by the built-in negative feedback resistance.

TEST CIRCUIT



PACKAGE OUTLINE

SIP8-7 Unit: mm