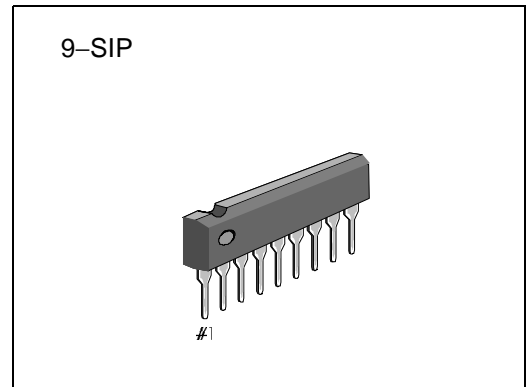


INTRODUCTION

The S1A0241A01 is a monolithic integrated circuit consisting of a dual equalizer amplifier with ALC, and it is suitable for stereo radio cassette-tape recorders.

FEATURES

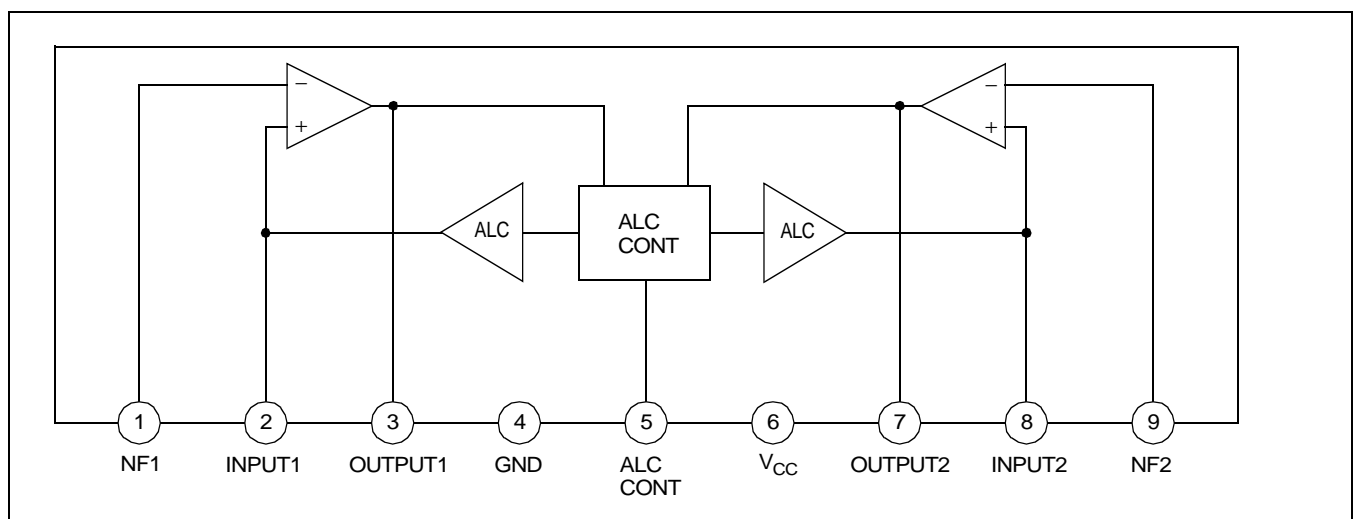
- Dual equalizer amplifier with built-in ALC circuit Low noise; $V_{NI} = 1.0\mu V$ (Typ)
- High open loop voltage gain: 80dB (Typ)
- Wide operating supply voltage range: $V_{CC} = 4.5V - 14V$
- Good ALC response balance between channels
- Input coupling capacitor unnecessary
- Diode or transistor for ALC unnecessary
- Minimum number of external parts required



ORDERING INFORMATION]

Device	Package	Operating Temperature
S1A0241A01-I0B0	9-SIP	-20°C — + 75C

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	16	V
Power Dissipation	P_D	(NOTE) 550	mW
Operating Temperature	T_{OPR}	-20 — +75	°C
Storage Temperature	T_{STG}	-20 — +125	°C

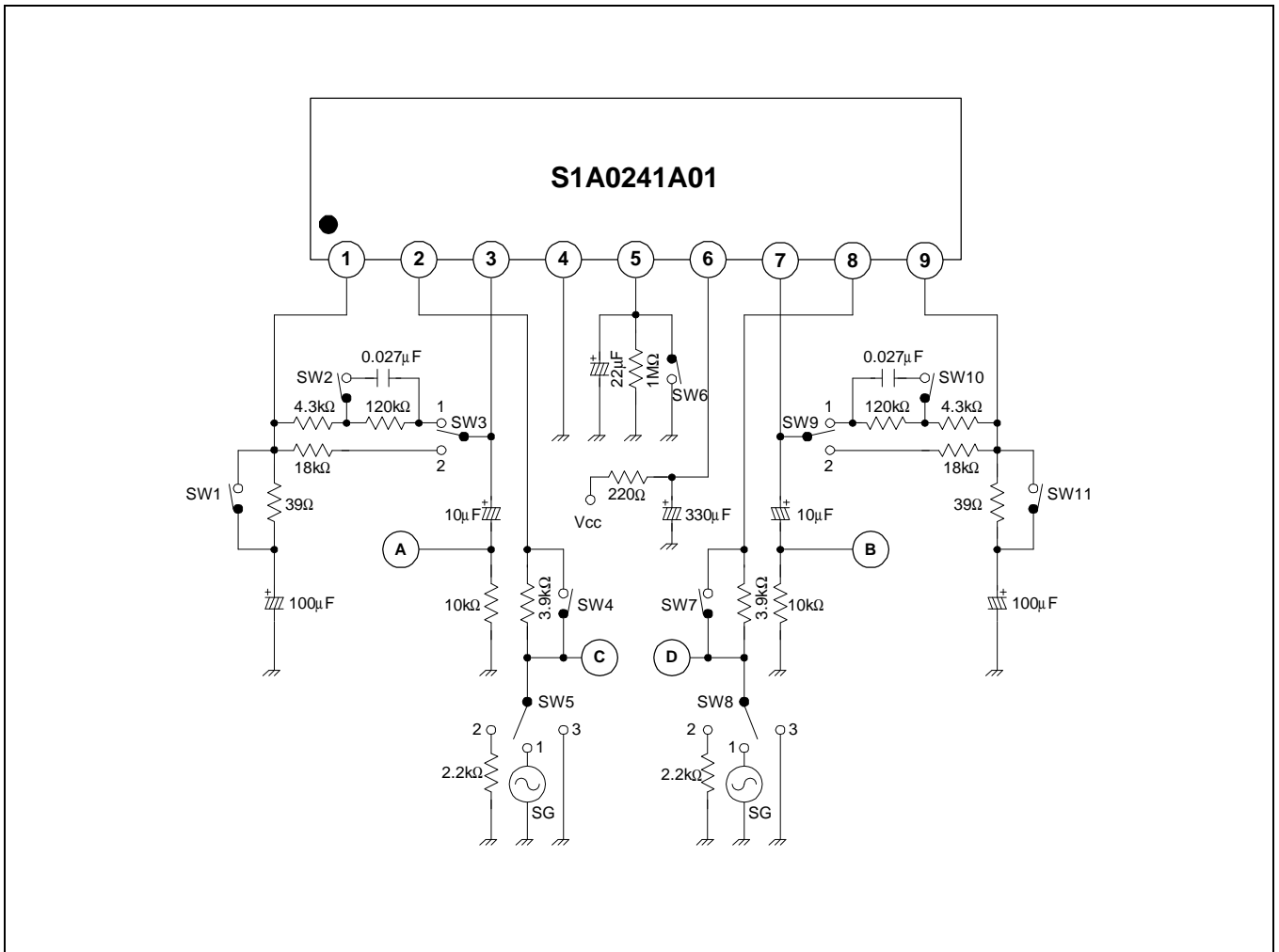
NOTE: Derated above Ta = 25 °C in the propotion of 5.5 mW/°C

ELECTRICAL CHARACTERISTICS

(Ta = 25°C, V_{CC} = 7V, f = 1kHz, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Quiescent Circuit Current	I_{CCQ}	$V_I = 0$	1.5	3.5	4.5	mA
Open Loop Voltage Gain	G_{VO}	$V_O = 0.3V$	70	80	–	dB
Closed Loop Voltage Gain	G_{VC}	$V_O = 0.3V$	45	48	50	dB
Output Voltage	V_O	THD = 1%	0.6	1.2	–	V
Total Harmonic Distortion	THD	$V_O = 0.3V$	–	0.1	0.3	%
Equivalent Input Noise Voltage	V_{NI}	$R_G = 2.2k\Omega$, BW (-3dB)=20Hz – 20kHz	–	1.0	2.0	μV
Input Resistance	R_I	–	15	25	45	k Ω
ALC Range	ΔV_{ALC}	$R_G = 3.9k\Omega$, THD = 10%	40	45	–	dB
ALC Balance	CB_{ALC}	$V_I = 1mV$	–	0	2.5	dB

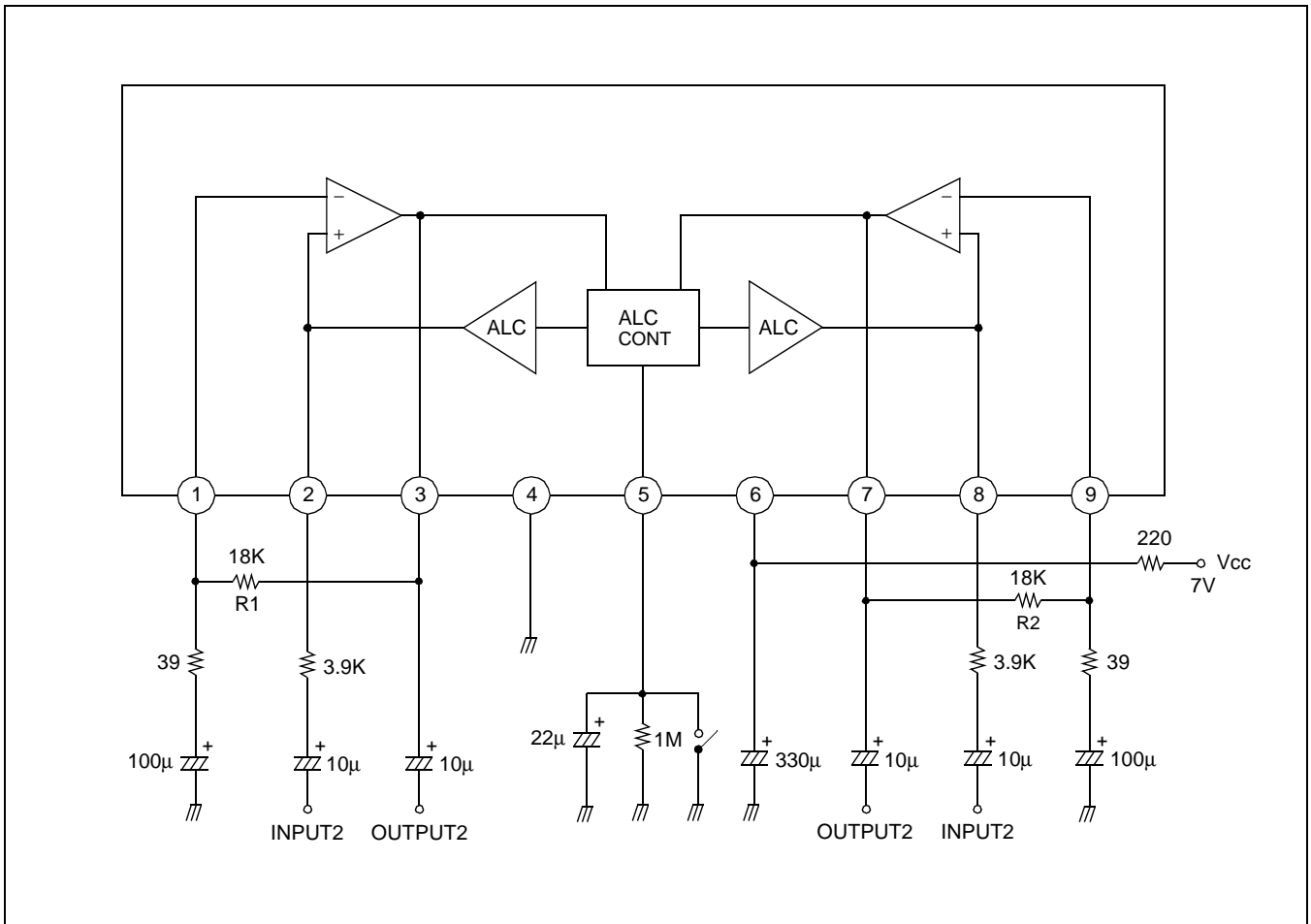
TEST CIRCUIT



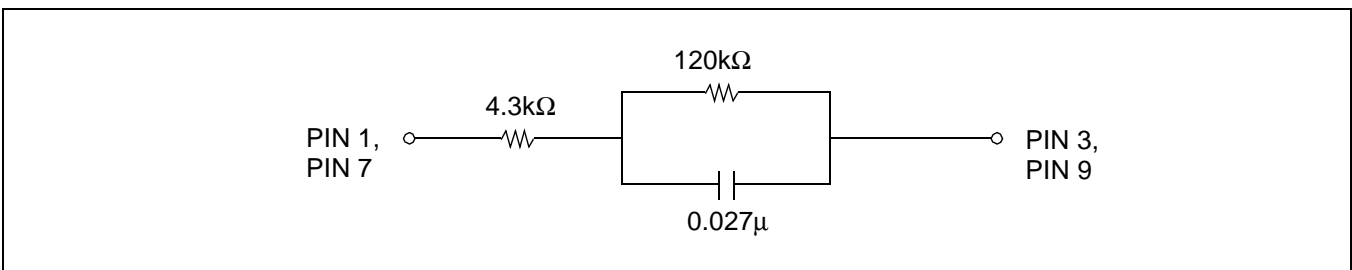
TEST METHOD

Symbol		S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11
I_{CCQ}		ON	OFF	1	ON	3	ON	ON	3	1	OFF	ON
G_{VO}		ON	OFF	1	ON	1	ON	ON	3	1	OFF	ON
G_{VC}	CH -1	OFF	ON	1	ON	1	ON	ON	3	1	OFF	ON
THD	CH -1	OFF	ON	1	ON	1	ON	ON	3	1	OFF	ON
V_O	CH -1	OFF	ON	1	ON	1	ON	ON	3	1	OFF	ON
V_{NI}	CH -1	OFF	ON	1	ON	2	ON	ON	3	1	OFF	ON
	CH -2	ON	OFF	1	ON	3	ON	ON	2	1	ON	OFF
ΔV_{ALC}	CH -1	OFF	OFF	2	OFF	1	OFF	ON	3	1	OFF	ON
CB_{ALC}		OFF	OFF	2	OFF	1	OFF	OFF	1	2	OFF	OFF

APPLICATION CIRCUIT



NOTE: ON playback, connect the time constant circuit as shown below, instead of R1 of Pins 1, 3 and R2 of Pins 7, 9, which are used in the NAB.



APPLICATION CIRCUIT 1

