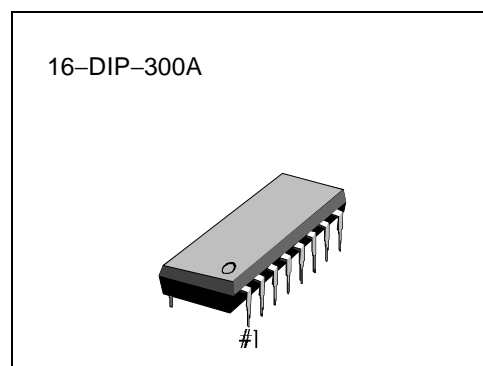


INTRODUCTION

The S1A2223X is a monolithic integrated Circuit consisting of an operational amplifier with five resonant circuits and an active filter. It is suitable for radio-cassette tape recorders, car stereos and audio systems.

FEATURES

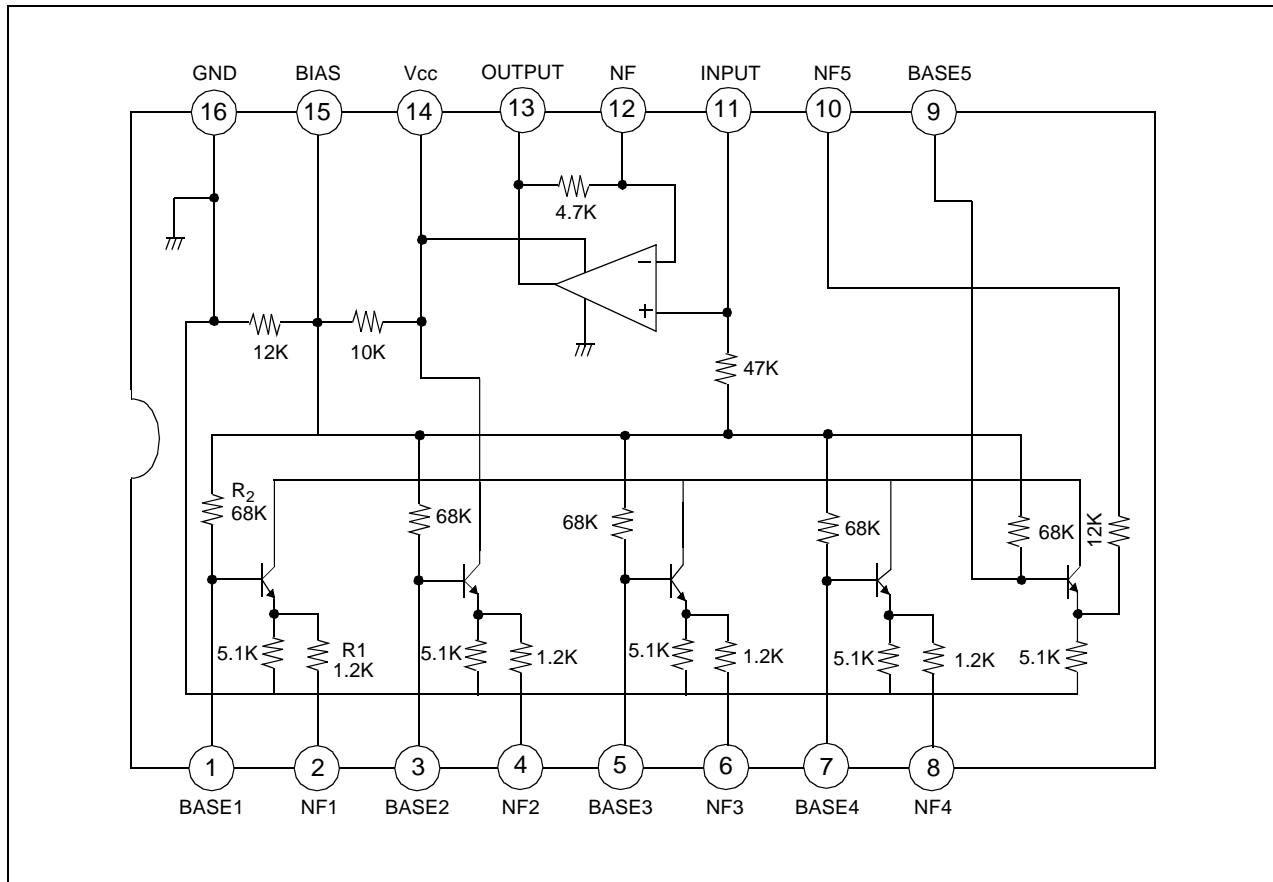
- Tone control with independent adjustment of each band through an external capacitor
- Gain control through an external variable resistor
- Increasing the bands by adding a resonant circuit or using two S1A2223X in a series
- Low noise ($V_{NO} = 7\mu V$: Typ. Flat)
- Low distortion (THD = 0.02% Typ. f = 1kHz Flat)
- Large input allowance ($V_I = 2.3V$: Typ, $V_{CC} = 9V$, f = 1kHz Flat)
- Operating Supply voltage range: $V_{CC} = 5V - 13V$



ORDERING INFORMATION

Device	Package	Operating Temperature
S1A2223X	16-DIP-300A	-20°C - +70°C

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

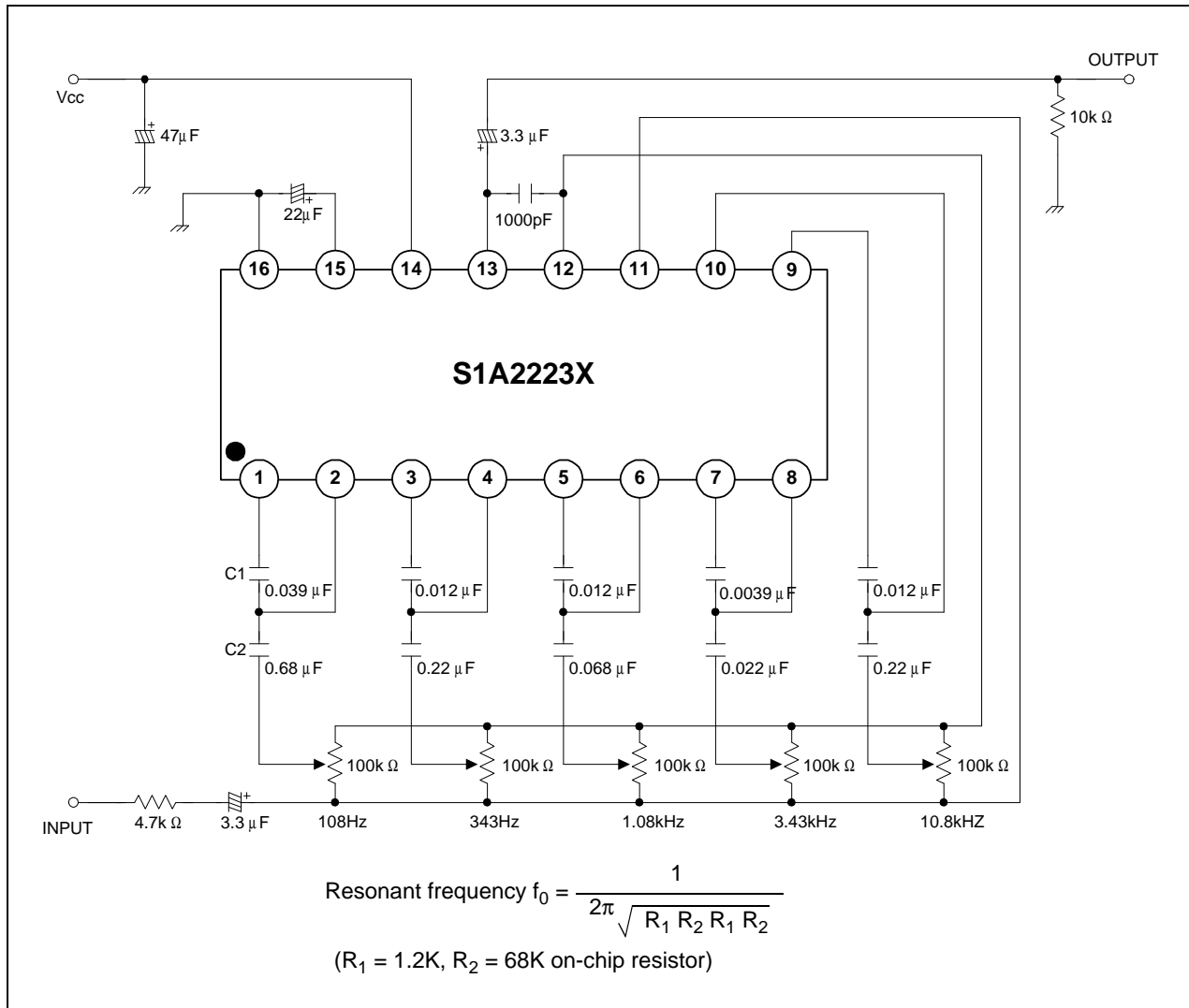
Characteristic	Symbol	Value	Unit
Supply Voltage	V _{CC}	20	V
Power Dissipation	P _D	700	mW
Operating Temperature	T _{OPR}	-20 ~ +70	°C
Storage Temperature	T _{STG}	-55 ~ +125	°C

ELECTRICAL CHARACTERISTICS

(Ta = 25°C, V_{CC} = 9V unless otherwise specified)

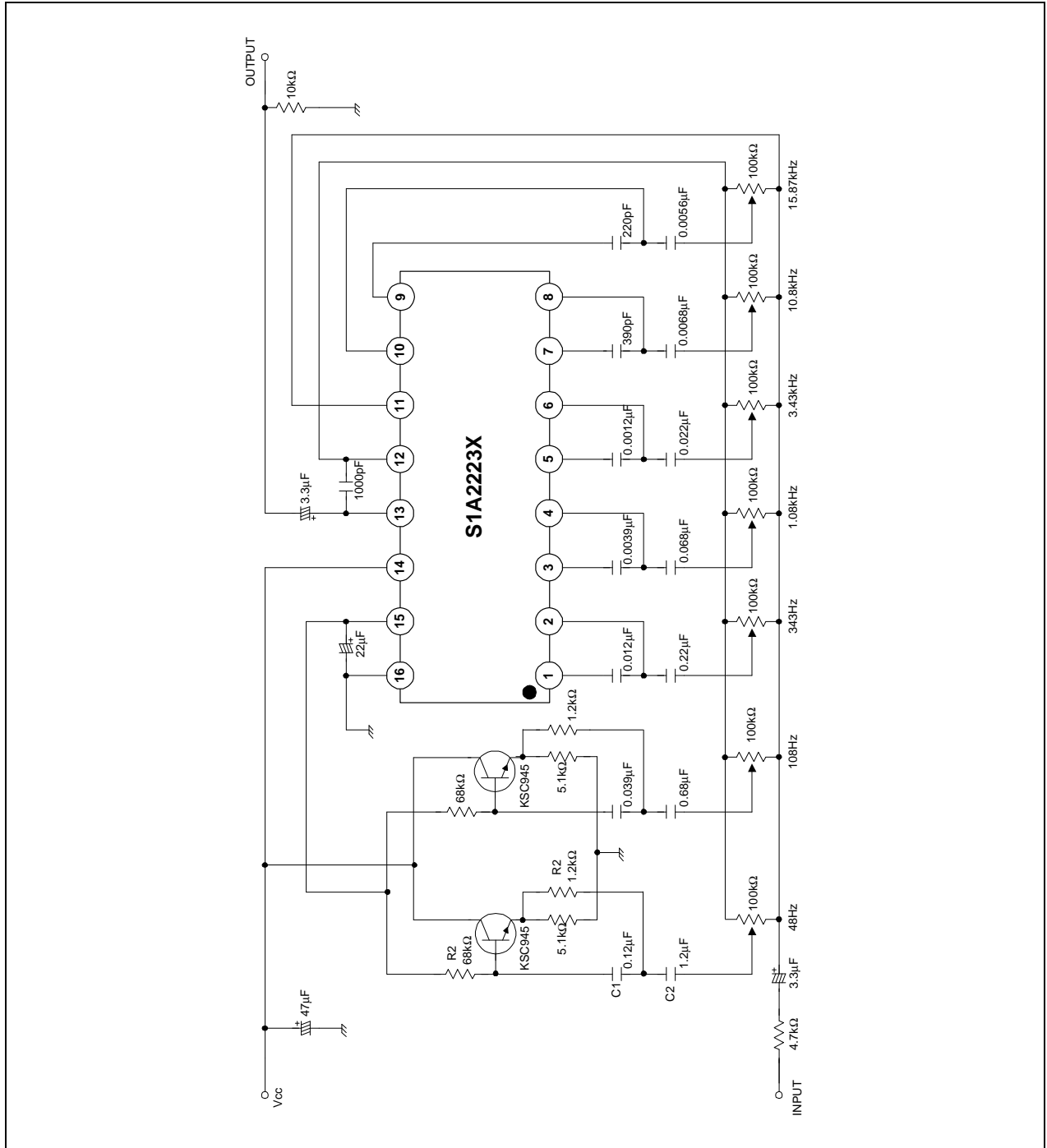
Characteristic		Symbol	Test		Min.	Typ.	Max.	Unit
			f (Hz)	Conditions				
Quiescent circuit current		I _{CCQ}	–	V _I = 0	3.0	5.2	8.0	mA
Voltage Gain	Flat	G _V (Flat)	1K	V _I = –10dBm	–3.8	–0.8	2.2	dB
	Boost	G _V (Boost)	108	V _I = – 10dBm	8	10.5	12	dB
			343					
			1.08K					
			3.43K					
			10.8K					
	Cut	G _V (Cut)	108	V _I = – 10dBm	–12	–10.5	–8	dB
			343					
			1.08K					
			3.43K					
10.8K								
Total Harmonic distortion		THD	1K	V _I = 1V	–	0.02	0.1	%
Output Noise Voltage		V _{NO}	Flat, Input Short BW(–3 dB) = 10Hz – 30kHz		–	7.0	30	μV

TEST CIRCUIT



APPLICATION CIRCUIT

1.7 BAND



2. 10 BAND

