

KA22134

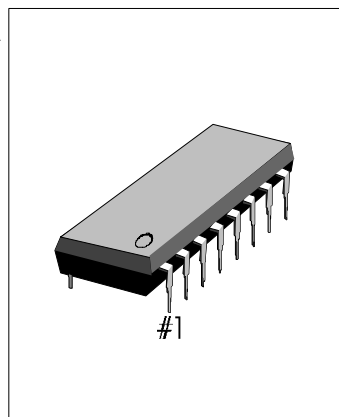
DUAL PRE-POWER AMP

INTRODUCTION

The KA22134 is a monolithic integrated circuit designed for use in low voltage and low power applications. It has all functions including a dual audio pre-power amplifier, DC volume control and headphone drive circuits.

It is suitable for portable tape recorders or headphone cassette recorder.

16-DIP-300A



FEATURES

- Built-in DC volume control circuit.
- Wide operation supply voltage: $V_{CC} = 1.8 \sim 6V$
- Only a few components to build headphone cassette tape recorders.
- Built-in ripple filter.

ORDERING INFORMATION

Device	Package	Operating Temperature
KA22134	16-DIP-300A	-20°C ~ +75°C

BLOCK DIAGRAM

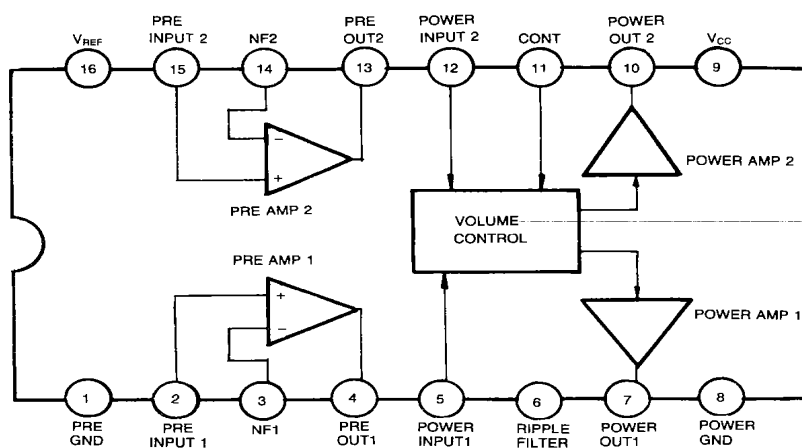


Fig. 1

ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	7	V
Power Dissipation	P_D	750	mW
Operating Temperature	T_{OPR}	- 20 ~ + 75	°C
Storage Temperature	T_{STG}	- 40 ~ + 125	°C

ELECTRICAL CHARACTERISTICS

(V_{CC} = 3V, T_a = 25°C)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Circuit Current	I_{CCQ1}	$V_I = 0, V_{OL} = \text{MIN}$		9	13	mA
	I_{CCQ2}	$V_I = 0, V_{OL} = \text{MAX}$		11.0		mA
Cross Talk	CT	$R_G = 2.2K\Omega, V_O = -10\text{dBm}$	34	40		dB

PRE-AMPLIFIER SECTION

(V_{CC} = 3V, T_a = 25°C, f = 1KHz, R₁ = 10 KΩ, unless otherwise specified)

Characteristic	Symbol	Test conditions	Min	Typ	Max	Unit
Open Loop Voltage Gain	G_{VO}	$V_I = 0.2\text{mV}$	55	62		dB
Closed Loop Voltage Gain	G_{VC1}	$V_O = -10\text{dBm}, \text{NAB } 1\text{KHz}$		33		dB
Output Voltage	V_O	THD = 1%	600	720		mV
Total Harmonic Distortion	THD ₁	$V_O = -10\text{dBm}$		0.04	0.1	%
Ripple Rejection Ratio	RR ₁	$R_G = 2.2K\Omega$ $V_R = -20\text{dBm}, f_r = 100\text{Hz}$		46		dB
Equivalent input Noise Voltage	V_{NI}	$R_G = 2.2K\Omega, \text{BW} = 30 \sim 20 \text{KHz}$ Gain for NAB 1KHz		1.2	2.0	μV

POWER AMPLIFIER SECTION

(V_{CC} = 3V, T_a = 25°C, f = 1KHz, R_{L2} = 32Ω, unless otherwise specified)

Characteristic	Symbol	Test conditions	Min	Typ	Max	Unit
Output Power	P_{O1}	THD ₂ = 10%	20	27		mW
	P_{O2}	THD ₂ = 10%, R _L = 160		39		mW
Total Harmonic Distortion	THD ₂	$P_O = 10\text{mW}, \text{Volume: } 100\%$		0.5	1.2	%
	THD ₃	$P_O = 10\text{mW}, \text{Volume: } 50\%$		0.3		%
Closed Loop Voltage Gain	G_{VC2}	$V_O = -10\text{dBm}, \text{Volume: } 100\%$	28	30	32	dB
	G_{VC3}	$V_O = -10\text{dBm}$		15		dB
Channel Balance	C_B	$V_O = -10\text{dBm}$	- 1.5	0	1.5	dB
Volume Rejection Ratio	VOL _{REJ}	$V_O = -10\text{dBm}$ Volume: 100% to 0%	66	72		dB
Output Noise Voltage	V_{NO}	BW = 30 - 20KHz, $R_G = 600\Omega$		250	320	μV
Ripple Rejection Ratio	RR ₂	$R_G = 600\Omega, f_r = 100\text{Hz}$ $V_R = -20\text{dBm}$		46		dB

APPLICATION CIRCUIT

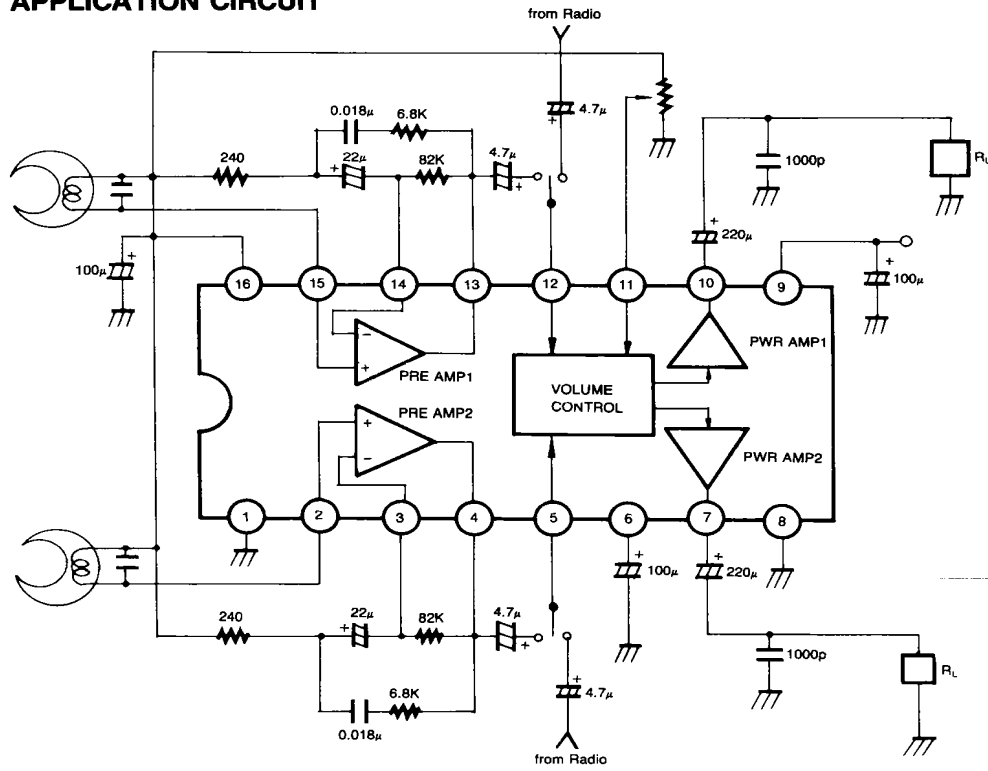
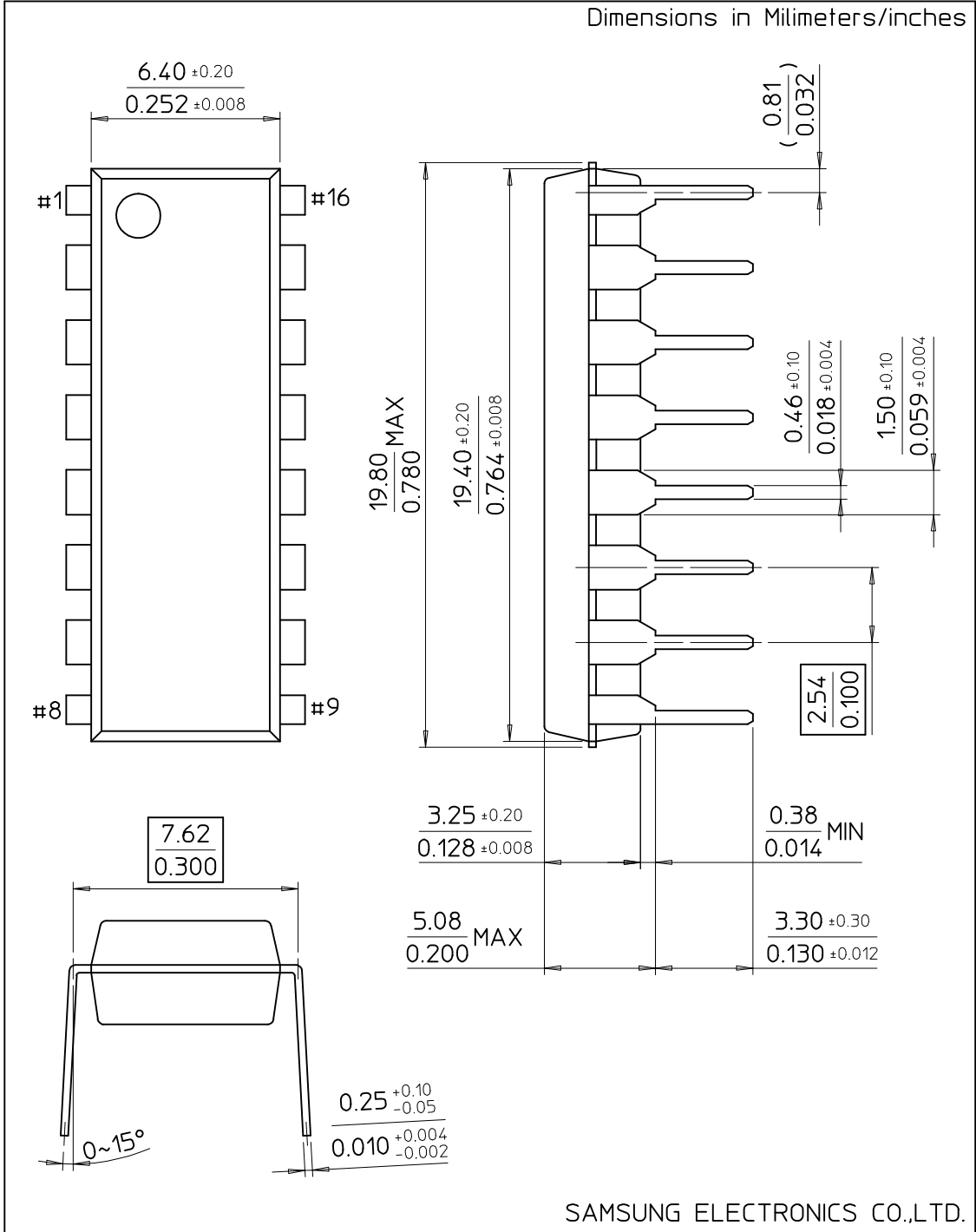


Fig. 3

16-DIP-300A

Dimensions in Millimeters/inches



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