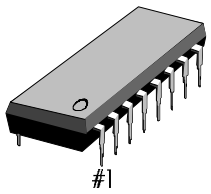
KA8504 SPEECH NETWORK WITH DIALER INTERFACE

INTRODUCTION

The KA8504 is a telephone speech network which includes TX Amp, RX Amp and DTMF Amp.
The gain is controlled automatically by sensing the line current. The circuit internally performs electronic switching between dialing and speech by mute signal.

16-DIP-300A



FEATURES

- Low line current operation
- Mute function
- DTMF signal interface
- Easy gain control

ORDERING INFORMATION

Device	Package	Operating Temperature
KA8504	16-DIP-300A	- 40°C ~ + 85°C

BLOCK DIAGRAM

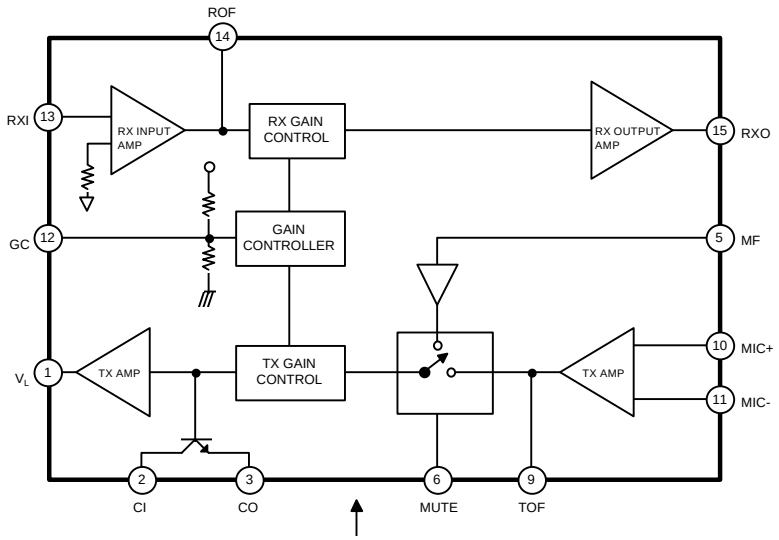


Fig. 1

PIN CONFIGURATION

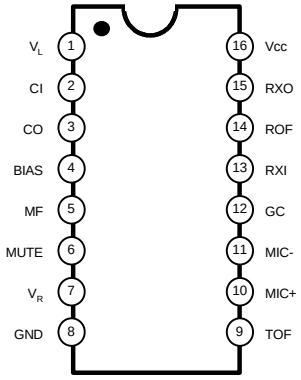


Fig. 2

PIN DESCRIPTION

Pin No	Symbol	Description
1	V_L	Positive power line and TX Amp Output.
2	CI	Current input.
3	CO	Current output. If the line current is large, this pin dissipates excess power (current)
4	BIAS	AC signal reference voltage terminal.
5	MF	DTMF input. When the mute pin is “H” level, this pin become active.
6	MUTE	Mute input. When this pin is 'H' level, speech circuit is muted and the DTMF input is enabled.
7	V_R	The voltage of this part becomes reference voltage of internal Amp.
8	GND	Negative power line.
9	TOF	Output of the Mic Amp. Negative feedback to MIC -.
10	MIC +	Non inverting Mic input.
11	MIC -	Inverting Mic input.
12	GC	Gain triggering point regulation.
13	RXI	Receiver input.
14	ROF	RX out and negative feedback to RX input.
15	RXO	Receiver Amp out.
16	V_{CC}	Internal power supply pin. Power is supplied from V_L through resistor.

ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Value	Unit
Line Voltage	V_L	15	V
Line Current	I_L	150	mA
Surge Line Current (2 sec)	$I_{L\ (SURGE)}$	200	mA
Power Dissipation	P_D	1.0	W
Operating Temperature	T_{OPR}	- 40 ~ 85	°C
Storage Temperature	T_{STG}	- 55 ~ 150	°C

ELECTRICAL CHARACTERISTICS

(Ta = 25°C, f = 1KHz, unless otherwise noted)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Line Voltage	V_L	I_L = 20mA	3.1	3.5	3.9	V
		I_L = 50mA	5.4	6.0	6.4	
		I_L = 120mA	10.5	11.5	12.5	
Internal Operating Voltage	V_{CC}	I_L = 20mA	1.7	2.0	2.3	V
		I_L = 50mA	3.3	3.7	4.1	
		I_L = 120mA	7.2	7.6	8.0	
T_X Gain	$G_{V\ (TX)}$	I_L = 20mA	35.0	37.0	39.0	dB
		I_L = 120mA	32.0	34.0	36.0	
T_X Dynamic Output Voltage	$V_{O\ (TX)}$	I_L = 20mA THD = 4.0%	2.5	-	-	Vp-p
		I_L = 120mA THD = 4.0%	4.0	-	-	
R_X Gain	$G_{V\ (RX)}$	I_L = 20mA	-7.5	-4.5	-1.5	dB
		I_L = 120mA	-13.5	-1.5	-7.5	
R_X Dynamic Output Voltage	$V_{O\ (RX)}$	I_L = 20mA THD = 10%	250	-	-	mVp-p
		I_L = 120mA THD = 10%	300	-	-	
R_X Output Current	$I_{O\ (RX)}$	I_L = 20 ~ 120mA	4.0	-	-	mA
DTMF Gain	$G_{V\ (MF)}$	I_L = 20mA	20.5	22.5	24.5	dB
		I_L = 120mA	17.5	19.5	21.5	
DTMF Input Impedance	$Z_{I\ (MF)}$	I_L = 50mA	24	-	-	KΩ
Mute Pin High Voltage	$V_{IH\ (MUTE)}$	I_L = 20 ~ 120mA	1.5	-	V_{CC}	V

APPLICATION CIRCUIT

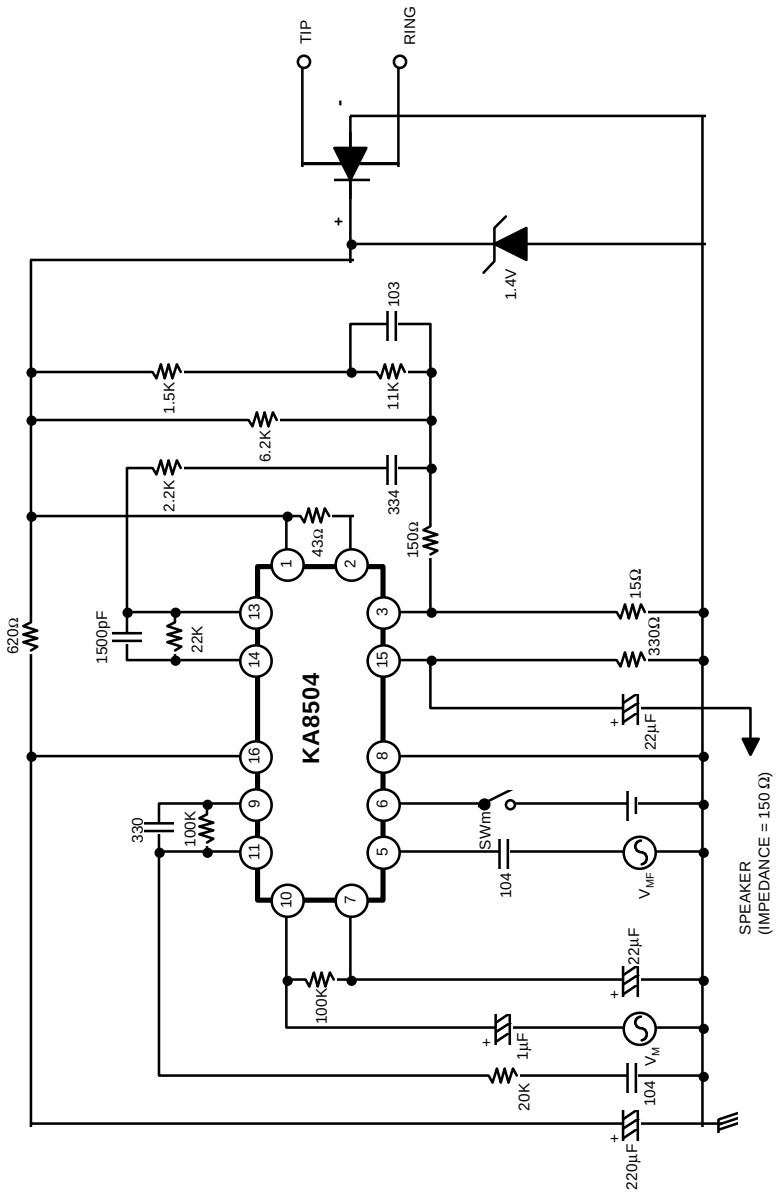


Fig.3