

SPEAKERPHONE CIRCUIT

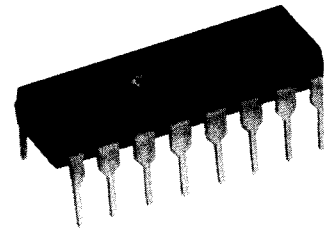
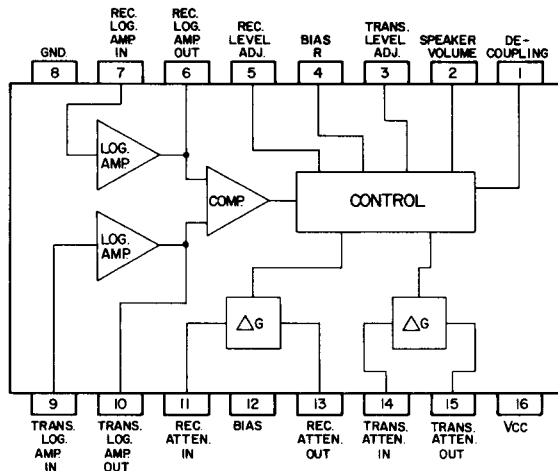
DESCRIPTION

The CS-272 is a monolithic integrated circuit designed for use in a speakerphone system.

Included in the CS-272 are the transmit/receive variable gain cells with a range of -40db to 6db, transmit/ receive logarithmic level detectors, useful over 3 decades of signal levels, a signal level comparator, and associated control circuitry.

The circuit contains an on chip 5.9V shunt regulator for use with a wide range of unregulated supplies, or if desired may be powered with an external 4.5 to 5V regulated supply.

PIN CONNECTIONS (TOP VIEW)



FEATURES:

- Low current drain
- Wide dynamic range
- Independent control of transmit/receive levels
- Speaker volume control pin
- Reduced component count

APPLICATIONS:

- Speakerphones
- Intercoms
- Transmitters
- Noise Gates
- Voltage controlled amplifiers

ABSOLUTE MAXIMUM RATINGS

Operating Temperature -25°C to +85°C Storage Temperature -40°C to +150°C

ELECTRICAL SPECIFICATIONS: (T_A=25°C) Pin 2=OV, except where noted

PARAMETER	PIN	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
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Regulator

V _{REG}	16	I ₁₆ =10mA	5.4	5.9	6.4	V
Supply Current	16	V ₁₆ =5VDC	3.5		9.0	mA
V _{BIAS}	12	V ₁₆ =5VDC	2.2		2.7	V

Transmit Log Amplifier

Input Voltage	9	V ₁₆ =5VDC	2.2		2.7	V
V _{OUT} Low Level	10	V ₁₆ =5VDC V _{IN} =100mV rms, F=1kHz		2.60		V
V _{OUT} High Level	10	V ₁₆ =5VDC V _{IN} =1V rms, F=1kHz		2.66		V

Receive Log Amplifier

Input Voltage	7	V ₁₆ =5VDC	2.2		2.7	V
V _{OUT}	6	V ₁₆ =5VDC V _{IN} =100mV rms, F=1kHz		2.60		V
V _{OUT} High Level	6	V ₁₆ =5VDC V _{IN} =1V rms, F=1kHz		2.66		V

Transmit/Receive Comparator

Transmit Input Current	10	V ₁₀ =3.5V			5	μA
Receive Input Current	6	V ₆ =3.5V			5	μA
T _X /R _X Switching Threshold	7/9	Signal Level Required To Switch Comparator.			6	dB

Level Control

Speaker Volume Control Input Current	2				50	μA
V ₃	3	V ₁₆ =5VDC	0.8		1.5	V
V ₄	4	V ₁₆ =5VDC	0.8		1.5	V
V ₅	5	V ₁₆ =5VDC	0.8		1.5	V

Transmit Attenuator

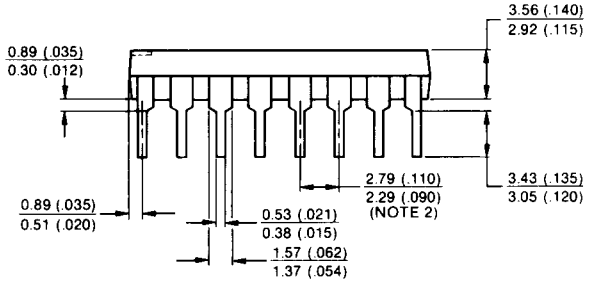
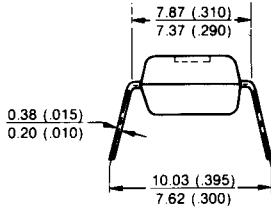
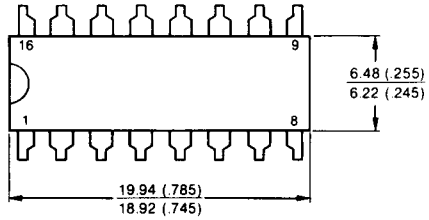
Input Voltage	14		2.2		3.0	V
Output Voltage	15		2.4		3.4	V
Delta Output Voltage	15	Switch From T _X To R _X			200	mV
Minimum Attenuation	15	V ₁₆ =5VDC V _{IN} =0.5 rms, F=1kHz	2		-4	dB
Maximum Attenuation	15	V ₁₆ =5VDC V _I =4.92VDC V _{IN} =0.5 rms, F=1kHz	-21			dB
Distortion	15	V _I =4.92VDC V _{IN} =0.5 rms, F=1kHz		1		%

Receive Attenuator

Input Voltage	11		2.2		3.0	V
Output Voltage	13		2.4		3.4	V
Delta Output Voltage	13	Switch From R _X To T _X			200	mV
Minimum Attenuation	13	V ₂ =5VDC V _{IN} =0.5 rms, F=1kHz	7		1	dB
Maximum Attenuation	13	V ₂ =0VDC V _{IN} =0.5V rms, F=1kHz	-24		-30	dB
Distortion	13	V ₂ =5VDC V _{IN} =0.5 rms, F=1kHz		1		%

16 LEAD PLASTIC DIP

DIMENSIONS IN MM (INCHES)



CHERRY 
SEMICONDUCTOR

2000 South County Trail, East Greenwich, Rhode Island 02818
 Tel: (401)885-3600 Telex WUI 6817157

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