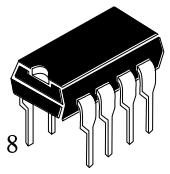
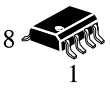
Speaker Amplifier

IL5009

The IL5009 is a monolithic integrated circuit designed forspeaker amp.



N SUFFIX
PLASTIC



D SUFFIX
SOIC

ORDERING INFORMATION
IL5009N Plastic
IL5009D SOIC
T_A = -20° to 60° C
for all package

FEATURES

- Operating supply voltage range : Vcc = 1.5V ~ 5.0V
- Recommended operating supply voltage : Vcc = 3V
- Low quiescent : Icc = 3.9mA
- Package is compact.

APPLICATION

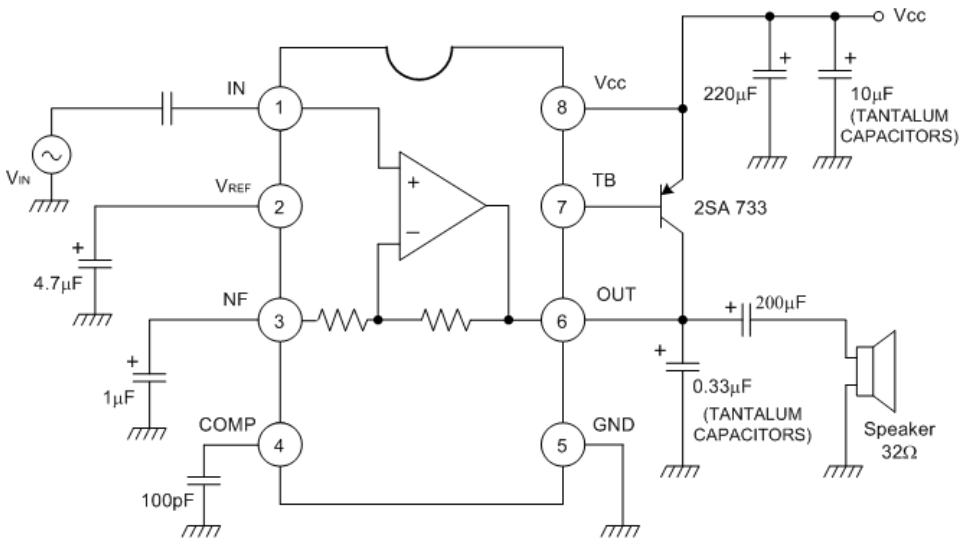
- Telephone set

MAXIMUM RATINGS

Characteristics	Symbol	Rating	Unit
Supply Voltage	Vcc	10	V
Power Dissipation	P_D	800	mW
Operating Temperature	Topr	-20 ~ +60	ºC
Storage Temperature	Tstr	-55 ~ +150	ºC

* Stresses beyond those listed under “absolute maximum ratings” may cause permanent damage to the device.
These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated under “recommended operating conditions” is not implied.
Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

BLOCK DIAGRAM & APPLICATION CIRCUIT



ELECTRICAL DC CHARACTERISTICS

(Pin Voltage at Vcc = 3V and no input signal)

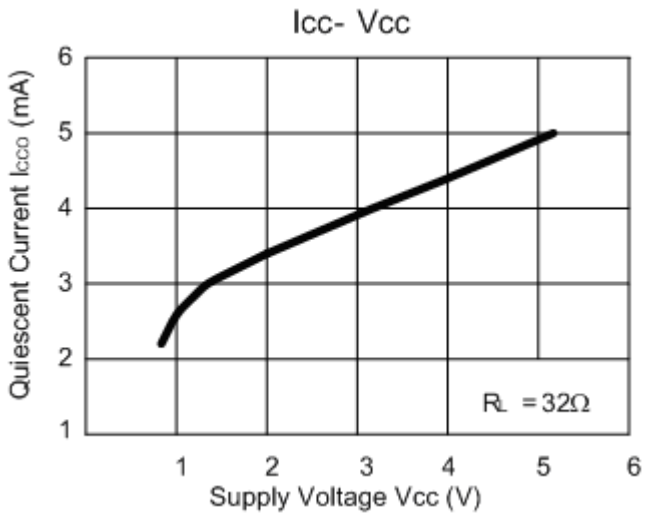
Pin No.	Symbol	Typical Value	Unit	Pin No	Symbol	Typical Value	Unit
1	V_1	1.4	V	5	V_5	0	V
2	V_2	1.4	V	6	V_6	1.5	V
3	V_3	1.4	V	7	V_7	2.3	V
4	V_4	1.3	V	8	V_8	3.0	V

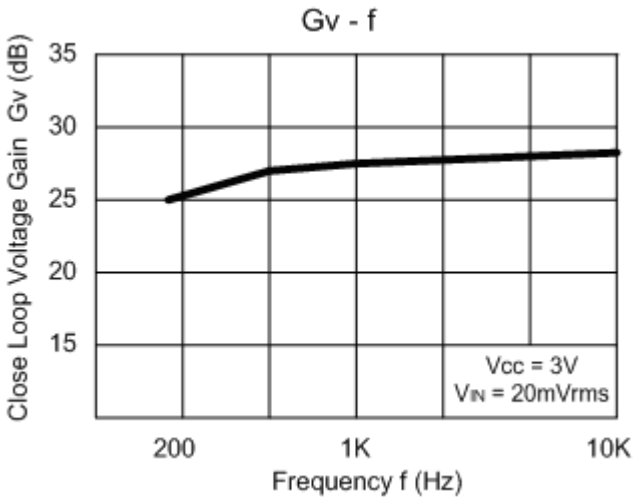
ELECTRICAL AC CHARACTERISTICS

(Unless otherwise specified, Vcc = 3V, f = 1KHz, V_{IN} = 20mVrms, R_L = 32Ω, Ta = 25 ºC)

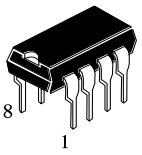
Characteristic	Symbol	Test condition	Min.	Typ.	Max.	Unit
Quiescent Current	I_{CCO1}	Vcc = 1.5V		3.1		mA
	I_{CCO2}	Vcc = 3.0V		3.9		mA
	I_{CCO3}	Vcc = 5.0V		4.9		mA
Close Loop Voltage Gain	G_V			27		dB
Maximum Output Voltage	V_{OM}	THD = 10%		1.0		Vrms
Total Harmonic Distortion	THD	V_{IN} = 40m Vrms		0.6		%
Output noise Voltage	V_{NO}	V_{IN} = 0		200		μVrms
Input Resistance	R_{IN}			15		KΩ

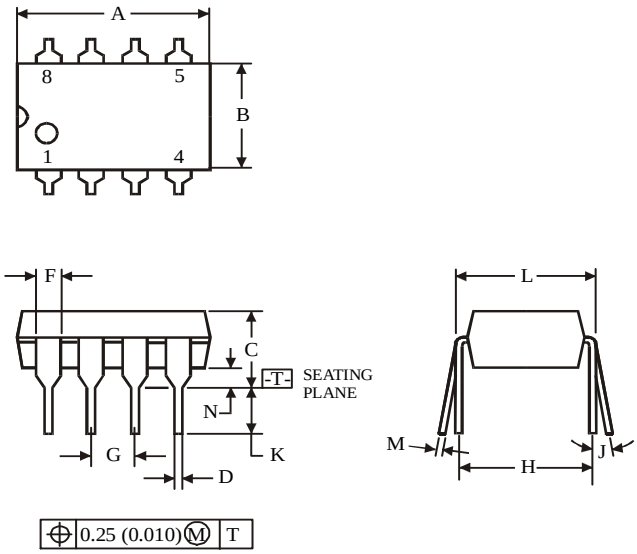
TYPICAL PERFORMANCE CHARACTERISTICS





N SUFFIX PLASTIC DIP
(MS – 001BA)



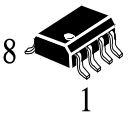


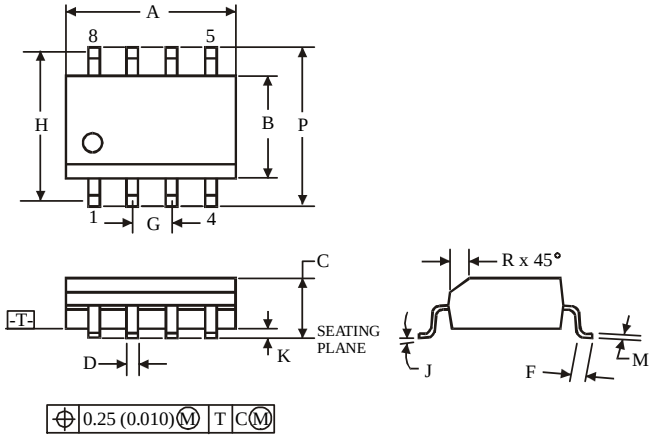
	Dimension, mm	
Symbol	**MIN**	**MAX**
A	8.51	10.16
B	6.1	7.11
C		5.33
D	0.36	0.56
F	1.14	1.78
G	2.54	
H	7.62	
J	0°	10°
K	2.92	3.81
L	7.62	8.26
M	0.2	0.36
N	0.38	

NOTES:

1. Dimensions “A”, “B” do not include mold flash or protrusions.
   Maximum mold flash or protrusions 0.25 mm (0.010) per side.

D SUFFIX SOIC
(MS - 012AA)





	Dimension, mm	
Symbol	**MIN**	**MAX**
A	4.8	5
B	3.8	4
C	1.35	1.75
D	0.33	0.51
F	0.4	1.27
G	1.27	
H	5.72	
J	0°	8°
K	0.1	0.25
M	0.19	0.25
P	5.8	6.2
R	0.25	0.5

NOTES:

1. Dimensions A and B do not include mold flash or protrusion.
2. Maximum mold flash or protrusion 0.15 mm (0.006) per side
   for A; for B – 0.25 mm (0.010) per side.