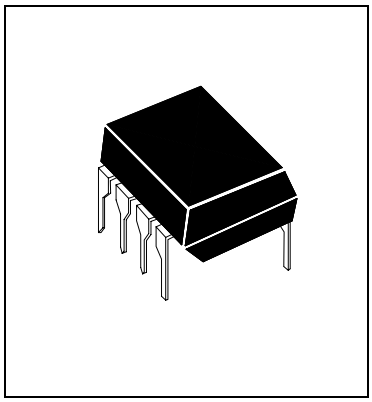
H31002P

BIPOLAR TONE RINGER ICS



Description

The H31002P is a bipolar integrated circuit. It is designed for telephone bell replacement.

Features

- Current consumption is small.
- Package is compact. (DIP-8 pin)
- Oscillation frequency is variable.
- Built-in threshold circuits prevent false triggering due to power noise as well as 'chirps' due to rotary dial.
- Few external components.

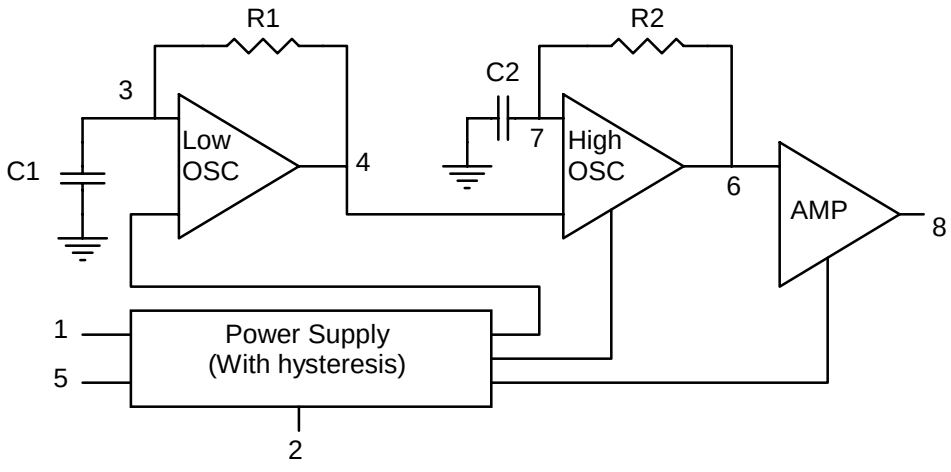
Applications

- Telecom Tone Ringer Set

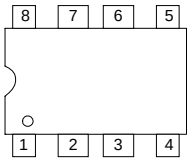
Absolute Maximum Rating (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Supply Voltage	VCC	30	V
Power Dissipation	PD	500	mW
Operating Temperature	Topr	-40°C to +85°C	°C
Storage Temperature	Tstg	-55°C to+150°C	°C

Block Diagram



Pin Connections



Pin1 : Vcc	Pin5 : Gnd
Pin2 : RSL Trigger In	Pin6 : High Freq. Time Constant.
Pin3 : Low Freq. Time Constant.	Pin7 : High Freq. Time Constant.
Pin4 : Low Freq. Time Constant.	Pin8 : Output

Electrical Characteristics

Characteristics		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Operating Voltage		V_{opr}		-	-	29	V
Initiation Supply Voltage		V_{si}	(Note 1)	17	19	21	V
Sustaining Supply Voltage		V_{sus}	(Note 2)	10.5	12	-	V
Initiation Current Consumption		I_{si}	No Load	1.4	3.3	4.2	mA
Sustaining Current Consumption		I_{sus}		0.4	1.4	2.0	mA
Oscillator Frequency		f_L	C1=0.47uF, R1=165kΩ	9	10	11	Hz
		f_{H1}	C1=6800pF, R2=191kΩ	461	512	563	
		f_{H2}		576	640	703	
Output Voltage	"H" Level	V_{OH}	Vcc=24V, I_{OH} =-10mA, Pin 7=Gnd	20	21.5	22.5	V
	"L" Level	V_{OL}	Vcc=24V, I_{OL}=10mA, Pin 7=7V	0.7	1.0	2.0	V

Note 1 : Initiation Supply Voltage (Vsi) is a supply voltage required to start oscillation of the tone ringer.
Note 2 : Sustaining Supply Voltage (Vsus) is a supply voltage required to maintain oscillation of the tone ringer .
Note 3 : Oscillation frequency is determined by the following equations (1), (2) and (3) :
(1)fL=1/1.234, R1, C1 (Hz) (2) fH1=1/1.515, R2, C2 (Hz) (3) fH2=1.24 fH1 (Hz)

Method Of Using Rsl

In the H31002P, using the RSL terminal can change the initiation supply current (Isi). The resistor RSL is connected to Gnd from Pin 2 as shown in Fig.3.

Further, the initiation supply current (Isi) can be changing the value of RSL. Fig.4 shows the graph of Vs-Is characteristic at the time when RSL has been changed to three values. The Vs-Is characteristic at the time when RSL=6.8 kΩ coincides with that at the time when Pin 2 of the H31002P has been used at an open state. If Pin 7 is connected to Gnd as shown in Fig. 5, the H31002P can stop oscillation. (the “L” level voltage is under 2V)

Fig.3

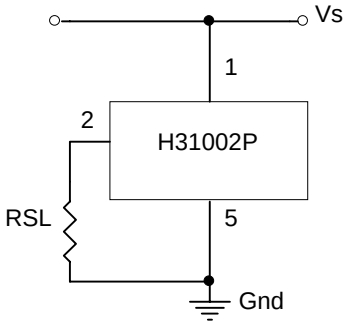
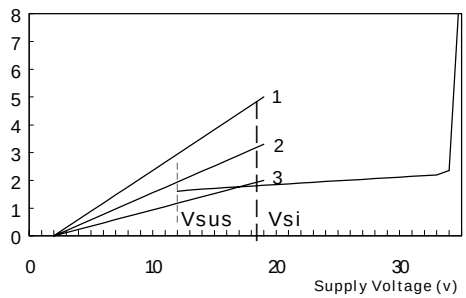
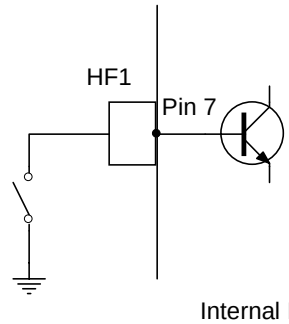


Fig.4



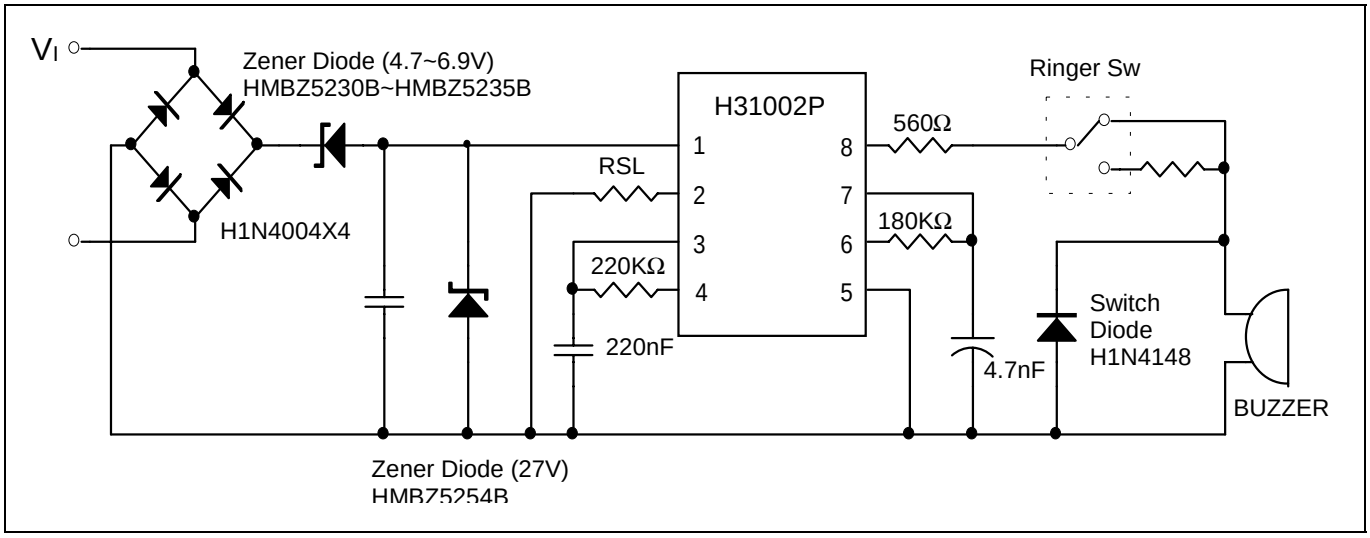
Current Consupmption(mA)
1.RSL=1.3K 2.RSL=3.3K 3.RSL=6.8K

Fig.5

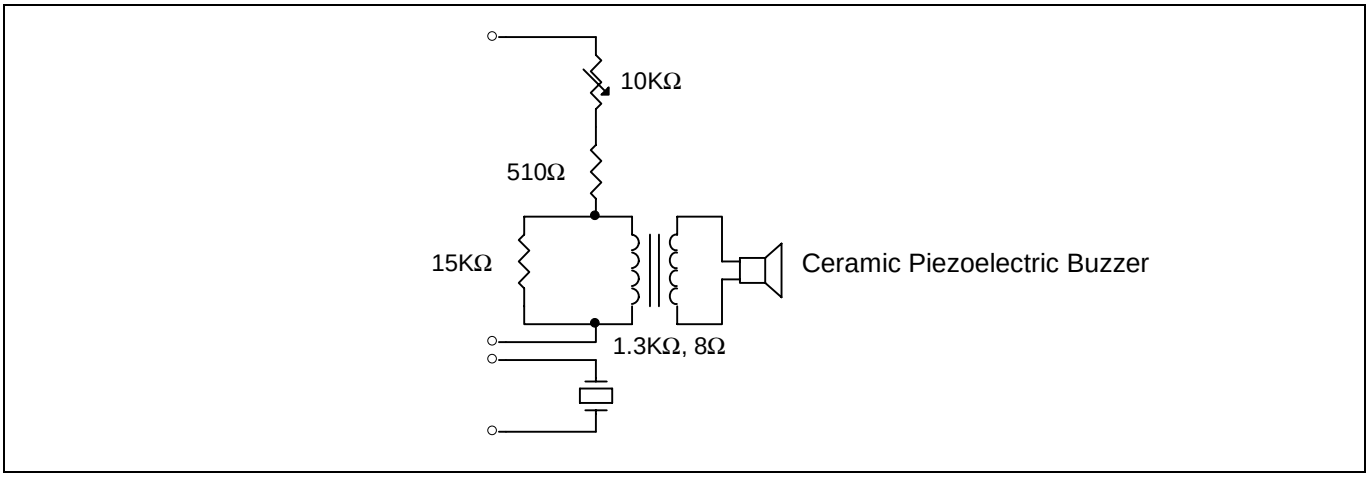


Application Information

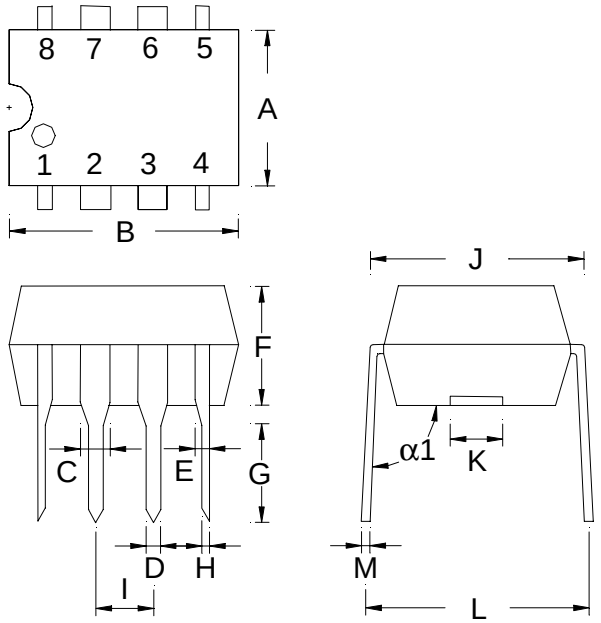
• Application circuits of Telecom Tone Ringer Set



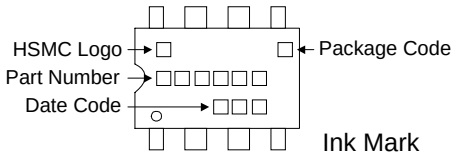
• Example of Output Circuit



DIP-8P Dimension



Marking :



DIP-8P Plastic Package
HSMC Package Code : P

*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.2480	0.2520	6.29	6.40	H	0.0150	0.0210	0.38	0.53
B	0.3630	0.3670	9.22	9.32	I	0.0898	0.1098	2.28	2.79
C	-	*0.0600	-	*1.52	J	0.2950	0.3050	7.49	7.74
D	-	*0.0500	-	*1.27	K	-	*0.1181	-	*3.00
E	-	*0.0390	-	*0.99	L	0.3370	0.7470	8.56	8.81
F	0.1280	0.1320	3.25	3.35	M	0.0090	0.0150	0.229	0.381
G	0.1250	0.1400	3.17	3.55	α1	94°	97°	94°	97°

Notes : 1.Dimension and tolerance based on our Spec. dated Sep. 07,1997.
2.Controlling dimension : millimeters.
3.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
4.If there is any question with packing specification or packing method, please contact your local HSMC sales office.

Material :

- Lead : 42 Alloy ; solder plating
- Mold Compound : Epoxy resin family, flammability solid burning class:UL94V-0

Head Office And Factory :

- **Head Office** (Hi-Sincerity Microelectronics Corp.) : 10F.,No. 61, Sec. 2, Chung-Shan N. Rd. Taipei Taiwan R.O.C.
  Tel : 886-2-25212056 Fax : 886-2-25632712, 25368454
- **Factory 1 :** No. 38, Kuang Fu S. Rd., Fu-Kou Hsin-Chu Industrial Park Hsin-Chu Taiwan. R.O.C
  Tel : 886-3-5983621~5 Fax : 886-3-5982931
- **Factory 2 :** No. 17-1, Ta-Tung Rd., Fu-Kou Hsin-Chu Industrial Park Hsin-Chu Taiwan. R.O.C
  Tel : 886-3-5977061 Fax : 886-3-5979220

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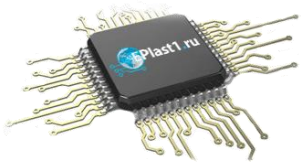

Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)
Факс: 8 (812) 320-02-42
Электронная почта: org@eplast1.ru
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.