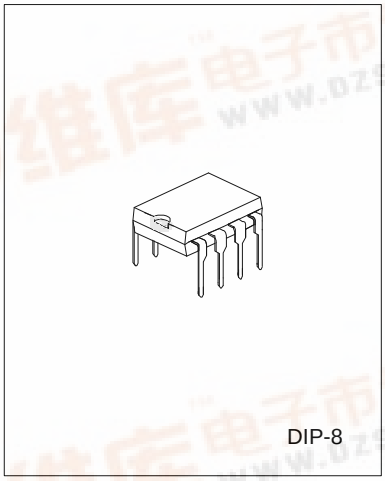
UTC TA31002 LINEAR INTEGRATED CIRCUIT

TELEPHONE TONE RINGER



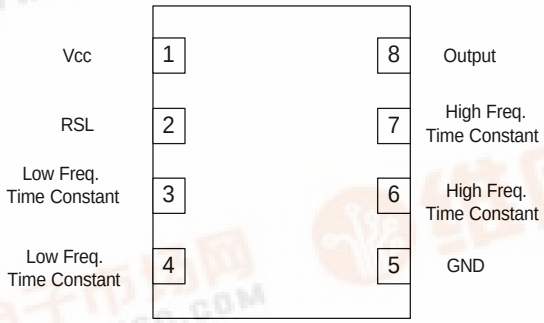
DESCRIPTION

The UTC TA31002 is a bipolar integrated circuit designed for telephone bell replacement. It can also be used as alarms or other alerting devices.

FEATURES

*Current consumption is small. (at no-load)
*Package is compaction. (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 componens.

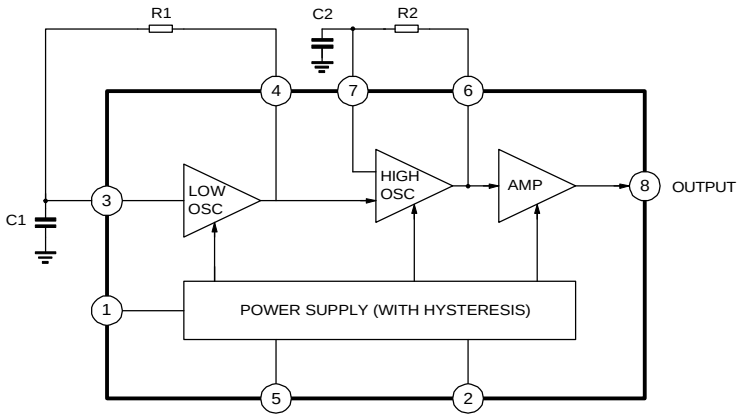
PIN CONFIGURATIONS



ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	VALUE	UNIT
Power Supply Voltage	Vcc	30	V
Power Dissipation	Pd	800	mW
Operating Temperature	Topr	-40 to 85	°C
Storage Temperature	Tstg	-55 to 150	°C

BLOCK DIAGRAM



Note:R1,R2,C1 and C2 are parts externally mounted

ELECTRICAL CHARACTERISTICS(Ta=25°C)

(All voltage referenced to GND unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operating Voltage	Vopr				29	V
Initiation Supply Voltage	Vsi	(note 1)	17	19	21	V
Sustaining Supply Voltage	Vsus	(note 2)	10.5	12	-	V
Initiation Current Consumption	Isi	No-Load	1.4	3.3	4.2	mA
Sustaining Current Consumption	Isus		0.7	1.4	2.5	mA
Oscillation Frequency (not3)	fL	C1=0.47μF,R1=165kΩ	9	10	11	Hz
	fH1	C2=6800pF,R2=191kΩ	461	512	563	Hz
	fH2		576	640	703	Hz
Output Voltage "H" Level	V_{OH}	Vcc=24V,VOH=-10mA PIN7=GND	20.0	21.5	22.5	V
Output Voltage "L" Level	V_{OL}	Vcc=24V,VOL=10mA PIN7=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.
2. Sustaining supply voltage (Vsus) is a supply voltage required to maintain oscillation of the tone ringer.
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)

APPLICATION NOTE

In the TA31002 the initiation current consumption (Isi) can be changed by using the RSL terminal. The resistor RSL is connected to GND from PIN2 as shown in fig.1. Further, the initation current consumption(Isi) can be changed by changing the value of RSL.

Fig.2 show the graph of Vs-Is characteristic at the time when RSL has been changed to three values. The Vs-Is characteristic in TA31002 at the time when RSL=6.8kΩ coincides with that at the time when PIN2 of the TA31001 has been used at an open state.

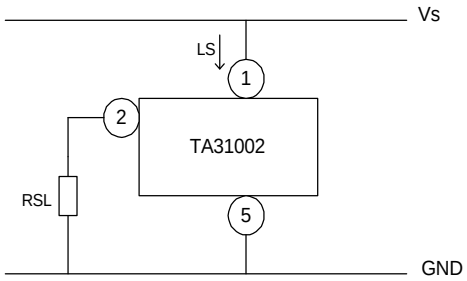


FIG.1

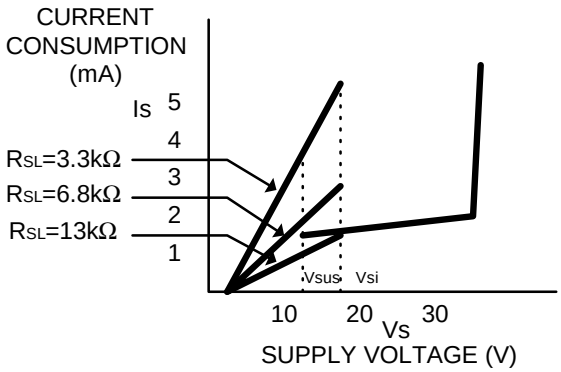
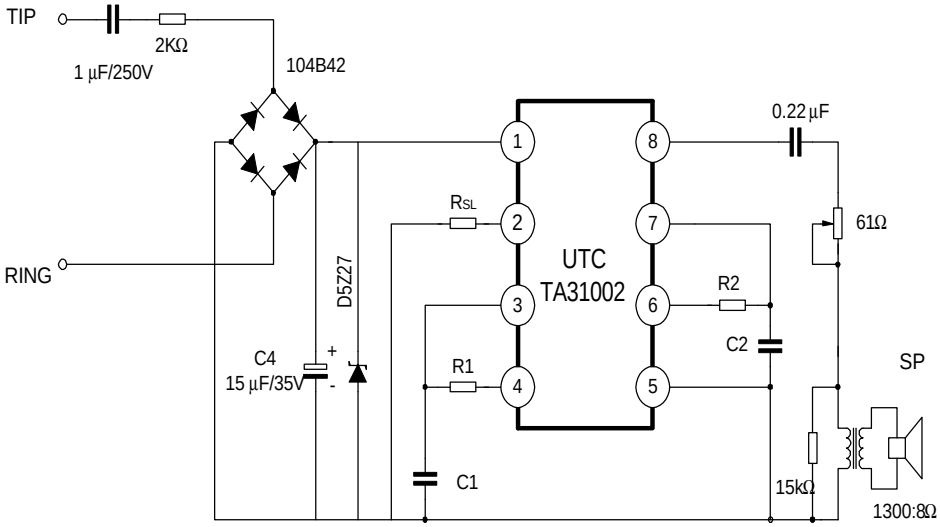


FIG.2

APPLICATION CIRCUIT



fL=1/1.234R1*C1
fH1=1/1.515R2*C2
fH2=1.24fH1

when:
R1=165KΩ R2=191KΩ
C1=0.47μF/16V C2=0.0068μF/16V
fL≅10Hz fH1≅500Hz fH2≅630Hz