UNISONIC TECHNOLOGIES CO., LTD

TA31001

LINEAR INTEGRATED CIRCUIT

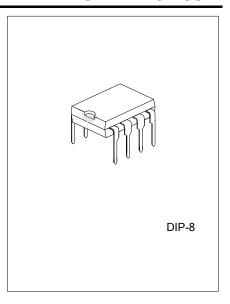
TELEPHONE TONE RINGER

■ DESCRIPTION

The UTC **TA31001** is a bipolar integrated circuit designed for telephone bell replacement. It can also be used as alarms or other alerting devices.

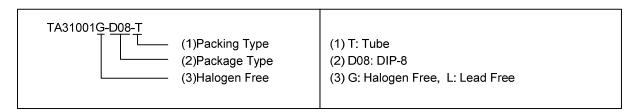
■ FEATURES

- *Designed for Telephone Bell Replacement.
- *Low Current Drain for Multiple Extension of Lines.
- *Adjustable 2-Frequency Tone.
- *Adjustable Warbling Rate.
- *Built-in Hysteresis Prevents False Triggering and Rotary Dial 'CHIRPS'.
- *Programmable for Initiation Voltage by Simple External Resistor.



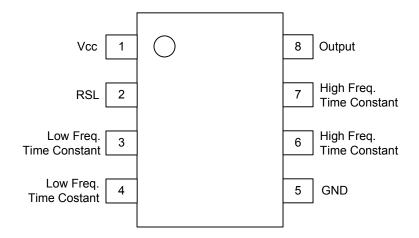
ORDERING INFORMATION

Ordering	Number	Dookogo	Packing	
Lead Free	Halogen Free	Package		
TA31001L-D08-T	TA31001G-D08-T	DIP-8	Tube	

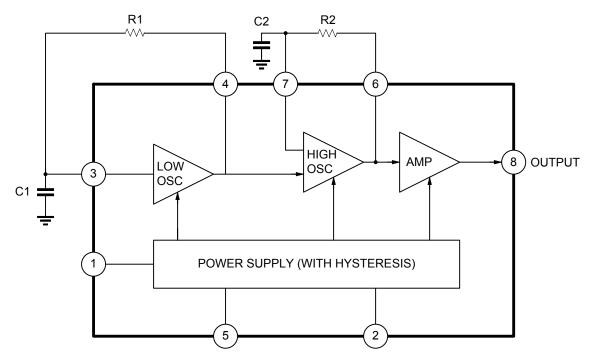


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■ PIN CONFIGURATIONS



■ BLOCK DIAGRAM



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

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V_{CC}	30	V
Power Dissipation	P_{D}	800	mW
Ambient Operating Temperature	T _{OPR}	-45 to 85	°C
Storage Temperature	T _{STG}	-65 to 150	°C

■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

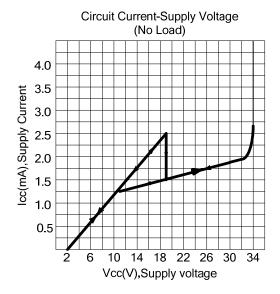
(All voltage referenced to GND unless otherwise specified)

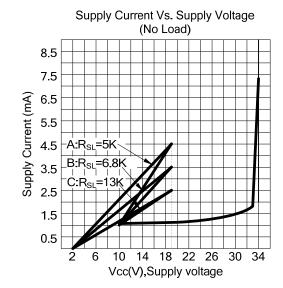
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SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
V_{CC}				29	V
V_{SI}		17	19	21	V
I _{SI}	6.8K-Pin 2 to GND	1.4	3.5	4.2	mA
V_{SUS}	See Fig.1	9.7	11	12	V
I _{SUS}	No Load V _{CC} =V _{SUS}	0.7	1.4	2.5	mA
V_{TRG}	V _{CC} =15V	9	10.5	12	V
I _{TRG}	V _{CC} =15V	10	20	1000 ⁵	μΑ
V_{DIS}				8.0	V
I _{DIS}		-40	-50		μΑ
V _{OH}	V _{CC} =21V, I8=-15mA Pin6=6V, Pin7=GND	17.0	19	21	V
V _{OL}	V _{CC} =21V, I8=15mA Pin6=GND, Pin7=6V			1.6	V
I _{IN(Pin 3)}	Pin3=6V, Pin4=GND			500	nA
I _{IN(Pin 7)}	Pin7=6V, Pin6=GND			500	nA
F _{H1}	R3=191K, C3=6800pF	461	512	563	Hz
F _{H2}	R3=191K, C3=6800pF	576	640	704	Hz
F_L	R2=165K, C2=0.47μF	9	10	11	Hz
	SYMBOL V _{CC} V _{SI} I _{SI} V _{SUS} I _{SUS} V _{TRG} I _{TRG} V _{DIS} I _{DIS} V _{OH} V _{OL} I _{IN(Pin 3)} I _{IN(Pin 7)} F _{H1} F _{H2}	V _{CC} V _{SI} I _{SI} 6.8K-Pin 2 to GND V _{SUS} See Fig.1 I _{SUS} No Load V _{CC} =V _{SUS} V _{TRG} V _{CC} =15V I _{TRG} V _{CC} =15V V _{DIS} I _{DIS} V _{OH} V _{CC} =21V, I8=-15mA Pin6=6V, Pin7=GND V _{CC} =21V, I8=15mA Pin6=GND, Pin7=6V Pin6=GND, Pin7=6V I _{IN(Pin 3)} Pin3=6V, Pin4=GND I _{IN(Pin 7)} Pin7=6V, Pin6=GND F _{H1} R3=191K, C3=6800pF F _{H2} R3=191K, C3=6800pF	SYMBOL TEST CONDITIONS MIN V _{CC} 17 I _{SI} 6.8K-Pin 2 to GND 1.4 V _{SUS} See Fig.1 9.7 I _{SUS} No Load V _{CC} =V _{SUS} 0.7 V _{TRG} V _{CC} =15V 9 I _{TRG} V _{CC} =15V 10 V _{DIS} -40 I _{DIS} -40 V _{OH} V _{CC} =21V, I8=-15mA Pin6=6V, Pin7=GND 17.0 V _{OL} V _{CC} =21V, I8=15mA Pin6=GND, Pin7=6V 17.0 I _{IN(Pin 3)} Pin3=6V, Pin4=GND I _{IN(Pin 7)} Pin7=6V, Pin6=GND F _{H1} R3=191K, C3=6800pF 461 F _{H2} R3=191K, C3=6800pF 576	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

Note 1. Initiation supply voltage (V_{SI}) is the supply voltage required to start the tone ringer oscillating.

- 2. Sustaining voltage (V_{SUS}) is the supply voltage required to maintain oscillation.
- 3. V_{TR} and I_{TR} are the conditions applied to trigger in to start oscillation for $V_{SUS} \le V_{CC} \le V_{SI}$
- 4. V_{DLS} and IDIS are the conditions applied to trigger in to inhibit oscillation for $V_{SI} \le V_{CC}$
- 5. Trigger current must be limited to this value externally.

TYPICAL CHARACTERISTICS





■ APPLICATION CIRCUIT

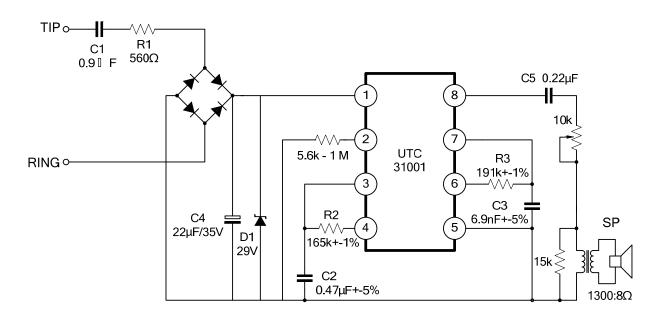


Figure 1

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