

# UTCLS1240A LINEAR INTEGRATED CIRCUIT

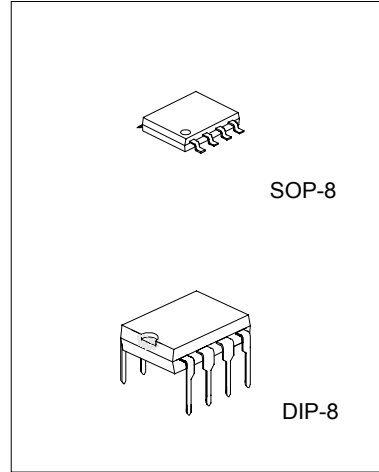
## ELECTRONIC TONE RINGER WITH BUILT-IN BRIDGE RECTIFIER

### DESCRIPTION

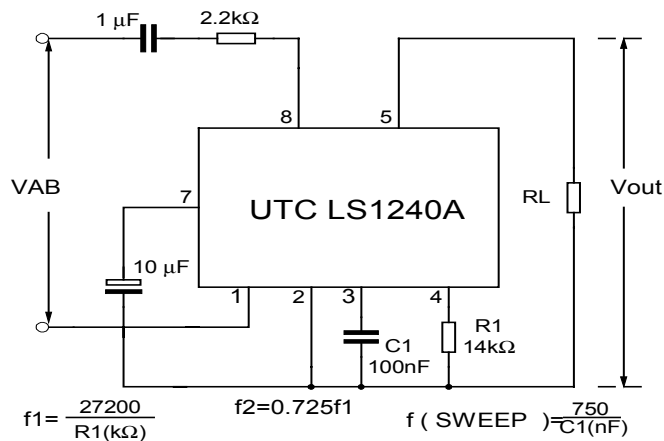
The UTC LS1240A is a monolithic integrated circuit, designed to be as a telephone ringer. It can drive directly a piezo-ceramic converter (buzzer). The output current capacity of UTC LS1240A is higher than UTC LS1240, For driving a dynamic loudspeaker, UTC LS1240A needs only a decoupling capacitor.

### FEATURES

- \*Low current consumption, in order to allow the parallel operation of 4 devices.
- \*Integrated rectifier bridge with zener diodes to protect against over voltage.
- \*Little external circuitry.
- \*Tone and switching frequencies adjustable by external components.
- \*Integrated voltage and current hysteresis.



### TEST CIRCUIT



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## ABSOLUTE MAXIMUM RATINGS(Ta=25°C)

PARAMETER	SYMBOL	VALUE	UNIT
Calling Voltage(f=50Hz) Continuous	VAB	120	Vrms
Calling Voltage(f=50Hz) 5s ON/10s OFF	VAB	200	Vrms
Supply Current	IDC	30	mA
Operating Temperature	Topr	-20 ~ +70	°C
Storage Temperature	Tstg	-65 ~ +150	°C
Thermal Resistance Junction-Ambient	Rth-amb	200	°C/W

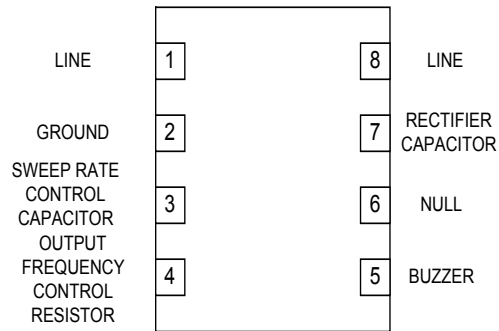
## ELECTRICAL CHARACTERISTICS

(Ta=25°C, unless otherwise specified)

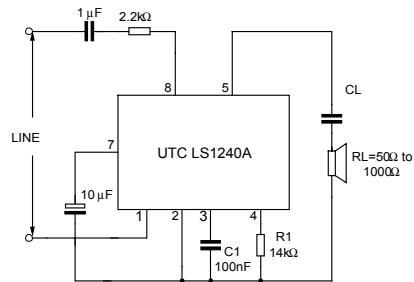
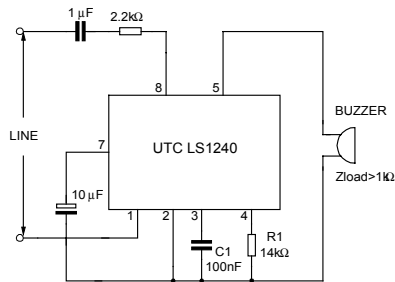
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	Vs				26	V
Current Consumption Without load	IB	Vs=9.3 to 25V		1.5	1.8	mA
Activation Voltage : 1240	Von		12		13.5	V
1240A	Von		12		13.5	V
Sustaining Voltage :1240	Voff		8		9	V
1240A	Voff		7.8		9.3	V
Differential Resistance in OFF Condition	Rd		6.4			kΩ
Output Voltage Swing	Vout			Vs-5		V
Short Circuit Current 1240	Iout	Vs=20V, RL=250Ω		70		mA
1240A	Iout	Vs=20V, RL=250Ω		70		mA
AC Operation						
Output Frequencies :	Vs=26V,R1=14kΩ					
1240	fout1	V3=0V	1.65		2.53	kHz
	fout2	Vs=6V	1.15		1.9	kHz
1240A	fout1	V3=0V	1.55		2.53	kHz
	fout2	Vs=6V	1.08		1.9	kHz
Fout1/Fout2			1.33		1.43	
Programming Resistor Range			5.6		8	kΩ
Sweep Frequency		C1=100nF,R1=14kΩ	5.25	7.5	9.75	Hz

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## PIN CONFIGURATIONS



## APPLICATION CIRCUIT



No current limitation is provided on the output stage of UTC LS1240A, so a minimum load DC of 50 ohms is advised.

The two tone frequencies generated are switched by an internal oscillator in a fast sequence and made audible across an output amplifier in the loudspeaker, both tone frequencies and the switching frequency can be externally adjusted. The signal and the circuit is designed so that noise on the line or variations of the ringing signal cannot affect correct operation of the device.