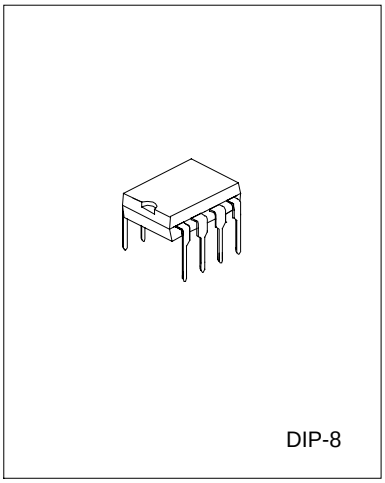
ELECTRONIC DUAL-TONE RINGER



DESCRIPTION

The UTC1240A are monolithic integrated circuits designed to replace the mechanical bell in telephone sets in connection with an electro-acoustical converter.Both devices can drive directly a piezoceramic converter (buzzer).

The output of UTC1240A needs a decoupling capacitor.

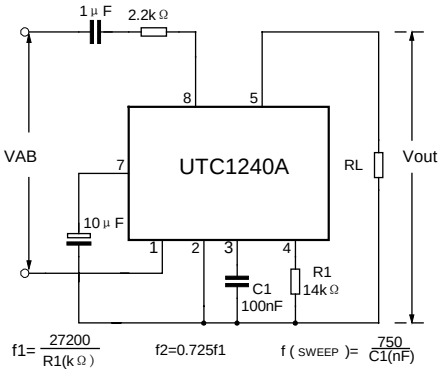
No current limitation is provided on the output stage of UTC1240A,so a minimum load DC of 50 ohms is adviced.

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 lin or variations of the ringing signal cannot affect correct operation of the device.

FEATURES

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

TEST CIRCUIT



ABSOLUTE MAXIMUM RATINGS(Ta=25°C)

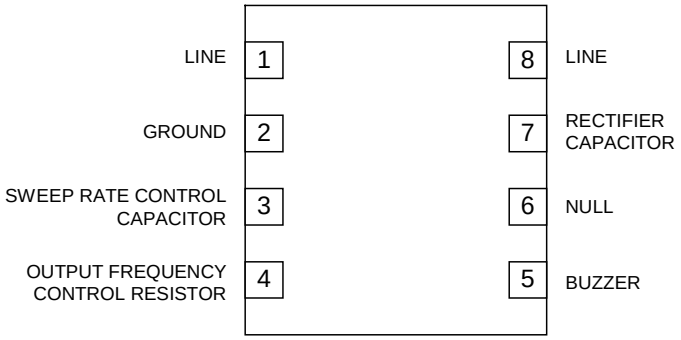
Characteristic	Symbol	Value	Unit
Calling voltage(f=50Hz) continuous	V_{AB}	120	Vrms
Calling voltage(f=50Hz) 5s ON/10s OFF	V_{AB}	200	Vrms
Supply Current	I_{DC}	30	mA
Operating Temperature	Topr	-20~+70	°C
Storage Temperature	Tstg	-65~+150	°C
Thermal resistance junction-ambient	Rth-amb	200	°C /W

ELECTRICAL CHARACTERISTICS

(Ta=25°C,unless otherwise specified)

Characteristic	Symbol	Test Conditions		Min	Typ	Max	Unit
Supply Voltage	V_S					26	V
Current consumption without load	I_B	Vs=9.3 to 25V			1.5	1.8	mA
Actination voltage	V_{ON}			13		14.5	V
Sustaining voltage	V_{OFF}			8.5		9.3	V
Differential resistance in OFF condition	R_D			6.4			kΩ
Output voltage swing	Vout				Vs-5		V
Short circuit current	Iout	R_L=250Ω			70		mA
Output high frequencies 1	fout1	V3=0V	Vs=26V,R1=14kΩ	1.55		2.53	kHz
Output high frequencies 2	fout2	V3=6V		1.08		1.9	kHz
fout1/fout2				1.33		1.43	kHz
Programming resistor range				8		5.6	kΩ
Sweep frequency		C1=100nF,R1=14kΩ		8.0	9.5	11.0	Hz

PIN CONFIGURATION



TYPICAL APPLICATION

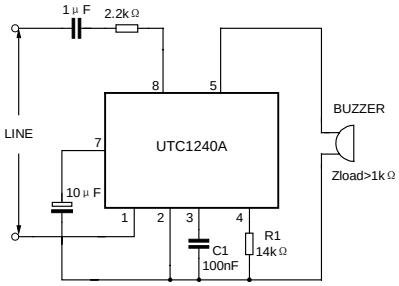


Figure.1

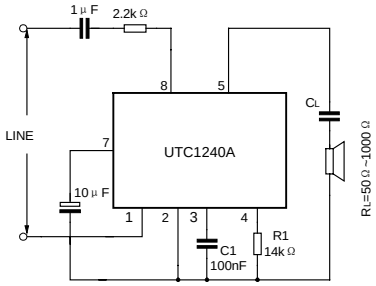


Figure.2