

UTC1240A

LINEAR INTEGRATED CIRCUIT

ELECTRONIC DUAL-TONE RINGER

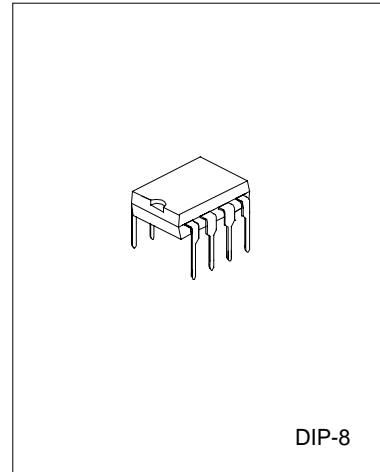
DESCRIPTION

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 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.

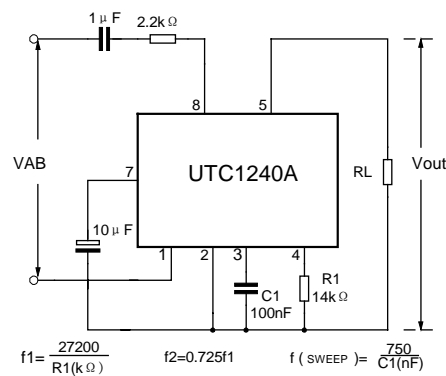


DIP-8

FEATURES

- * Low current consumption, 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.
- * Integrated voltage and current hysteresis

TEST CIRCUIT



UTC1240A

LINEAR INTEGRATED CIRCUIT

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Characteristic	Symbol	Value	Unit
Calling voltage(f=50Hz) continuous	V _{AB}	120	V _{rms}
Calling voltage(f=50Hz) 5s ON/10s OFF	V _{AB}	200	V _{rms}
Supply Current	I _{DC}	30	mA
Operating Temperature	T _{OP}	-20~+70	°C
Storage Temperature	T _{STG}	-65~+150	°C
Thermal resistance junction-ambient	R _{th-amb}	200	°C/W

ELECTRICAL CHARACTERISTICS

(Ta=25°C, unless otherwise specified)

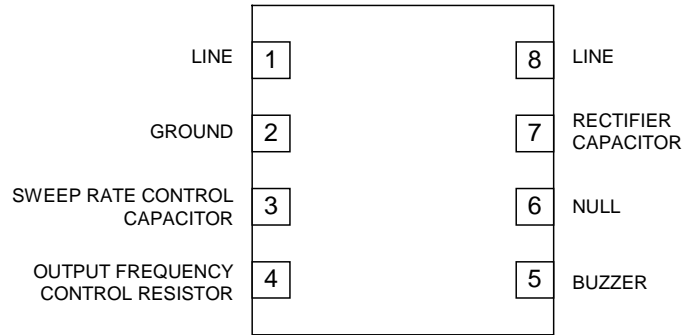
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	V _s				26	V
Current consumption without load	I _B	V _s =9.3 to 25V		1.5	1.8	mA
Actination voltage	V _{ON}		13		14.5	V
Sustaining voltage	V _{OFF}		8.5		9.3	V
Differential resistance in OFF condition	R _D		6.4			kΩ
Output voltage swing	V _{out}			V _s -5		V
Short circuit current	I _{out}	R _L =250Ω		70		mA
Output high frequencies 1	f _{out1}	V ₃ =0V	V _s =26V, R ₁ =14kΩ	1.55	2.53	kHz
Output high frequencies 2	f _{out2}	V ₃ =6V		1.08	1.9	
	f _{out1} /f _{out2}			1.33	1.43	kHz
Programming resistor range			8		5.6	kΩ
Sweep frequency		C ₁ =100nF, R ₁ =14kΩ	8.0	9.5	11.0	Hz



UTC1240A

LINEAR INTEGRATED CIRCUIT

PIN CONFIGURATION



TYPICAL APPLICATION

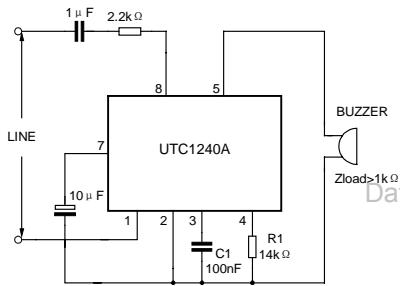


Figure.1

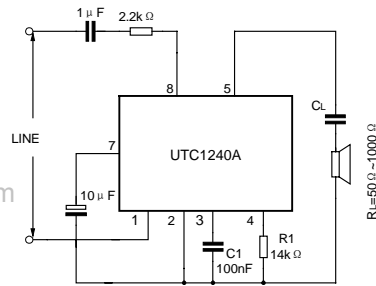


Figure.2