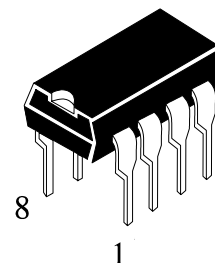


IL2418

TELEPHONE TONE RINGER WITH BRIDGE DIODE.

The IL2418N is a monolithic integrated circuit telephone tone ringer diode, when coupled with an appropriate transducer, it replaces the electromechanical bell. This device is designed for use with either a piezo transducer or an inexpensive transformer coupled speaker to produce a pleasing tone composed of a high frequency (f_H) alternating with a low frequency (f_L) resulting in a warble frequency. The supply voltage is obtained from the AC ring signal and the circuit is designed so that noise on the line or variation of the ringing signal can not affect correct operation of the device..



Features

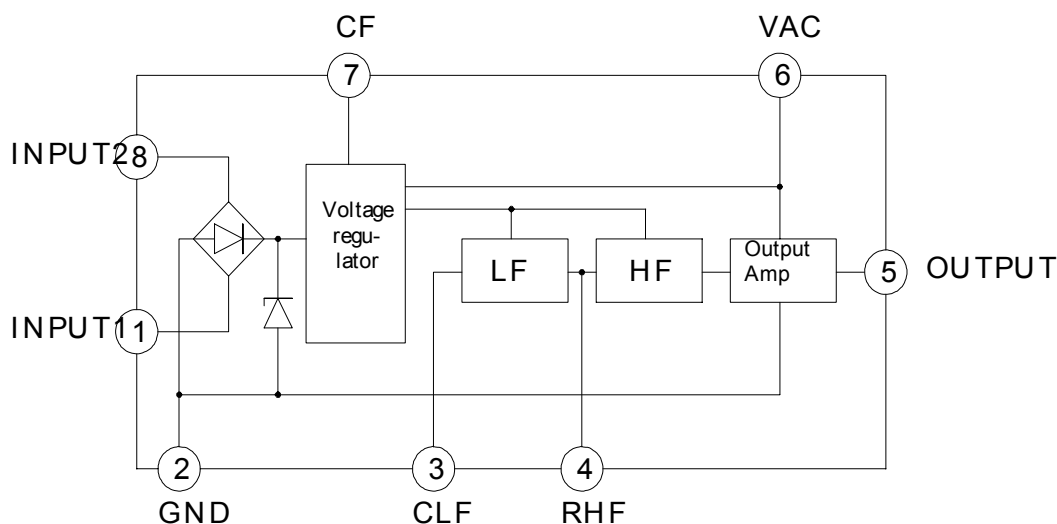
- On chip high voltage full wave diode bridge rectifier
- Low current consumption, in order to allow the parallel operation of the 4 devices
- Low external component count
- Tone and switching frequencies adjustable by external components
- High noise immunity due to built-in voltage current hysteresis
- Activation voltage adjustable
- Internal zener diodes to protect against over voltages
- Ringer impedance adjustable with external components.

PACKAGE

8 - DIP

$T_A = -40 \dots +70 \text{ } ^\circ\text{C}$

Block diagram



IL2418

ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

Symbol	Characteristic	Value	Unit
V _{TP}	Calling Voltage (f=50Hz) Continuous	120	Vrms
V _{TP}	Calling Voltage (f=50Hz) 5 Sec ON/10 Sec OFF.	200	Vrms
I _{CC}	Supply Current.	22	mA
T _{OP}	Operating Temperature.	-40 ... +70	°C
T _{stg}	Storage and Junction Temperature.	-65 ... +150	°C

ELECTRICAL CHARACTERISTICS (T_a=25°C)

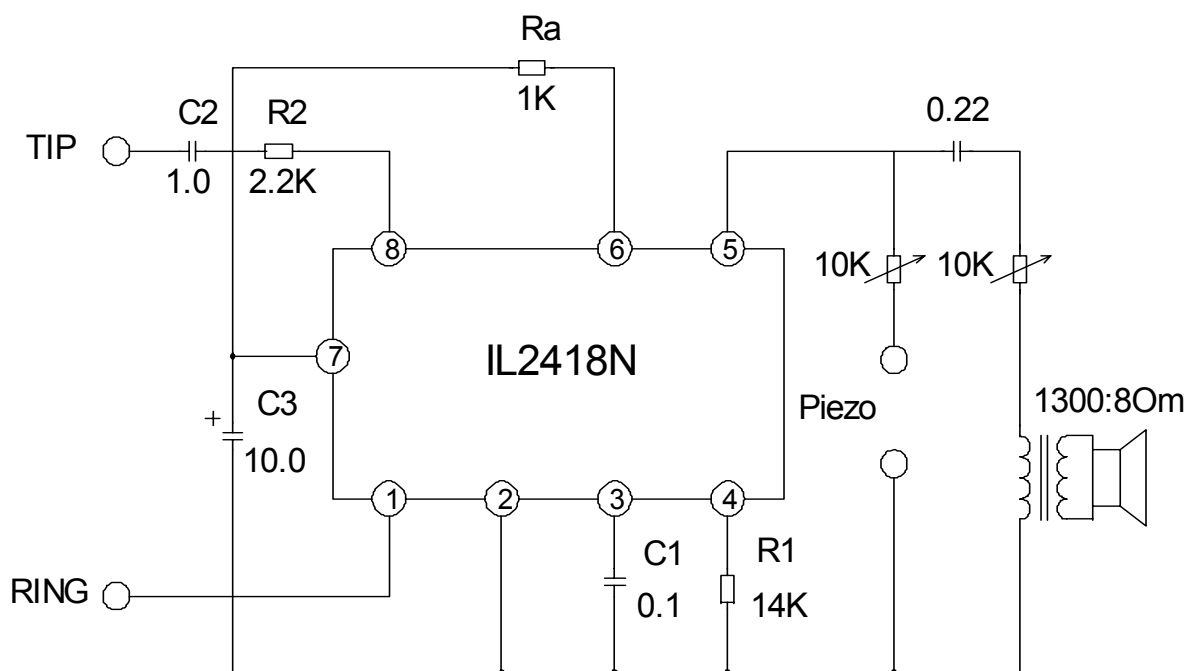
Symbol	Characteristic	Test Condition	Min	Typ	Max	Unit
V _{CC}	Supply Voltage	Pin 7 V _{CC} Pin 2 V=0V	-	-	26	V
I _{CC}	Current Consumption without Load	V _S =8.8 to 26V Pin 7 V _{CC} Pin 0 V=0V	-	1.5	1.8	mA
V _{ON}	Activation Voltage	Pin 7 V _{ON} Pin 2 V=0V	12.2		13	V
V _{ONR}	Activation Voltage Range	R _A = 1 êΩ (Pin 7 V _{ONR} Pin 2 V=0V)	8		10	V
V _{SUS}	Sustaining Voltage	Pin 7 V _{SUS} Pin 2 V=0V	8		8.8	V
R _D	Differential Resistance in Off Condition	(Pin 1 , 8)	6.4			kΩ
V _{OUT}	Output Voltage Swing	(Pin 5) Pin 7 V _{CC} =26V Pin 2 V=0V		V _{CC} -3		V
I _{OUT}	Short Circuit Current	(Pin 5) Pin 7 V _{CC} = 26V Pin 2 V=0V		35		mA

IL2418

AC OPERATION

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Output Frequencies	f_{H1} f_{H2}	Pin 7 $V_{CC}=26V$ Pin 2 $V=0V$, $R_1=14k\Omega$, $V_{CC}=0V$, $V_{CC}=6V$		2300 1700		Hz Hz
f_{H1} Range		$R_1=27k\Omega$ to $1.7k\Omega$	0.1		15	KHz
Sweep Frequency	f_L	Pin 7 $V_{CC}=26V$ Pin 2 $V=0V$, $R_1=14k\Omega$ $C_1=100nF$		10		Hz

TEST AND APPLICATION CIRCUIT



$$f_{H1} = 3.22 \times 10^4 / R_1 (k\Omega)$$

$$f_{H2} = (5/7) \times f_{H1}$$

$$f_L = 1000 / C_1 (nF)$$