



Tone Ringer

HC2410

HSiN Semiconductor Pte Ltd

www.hsin.com.sg

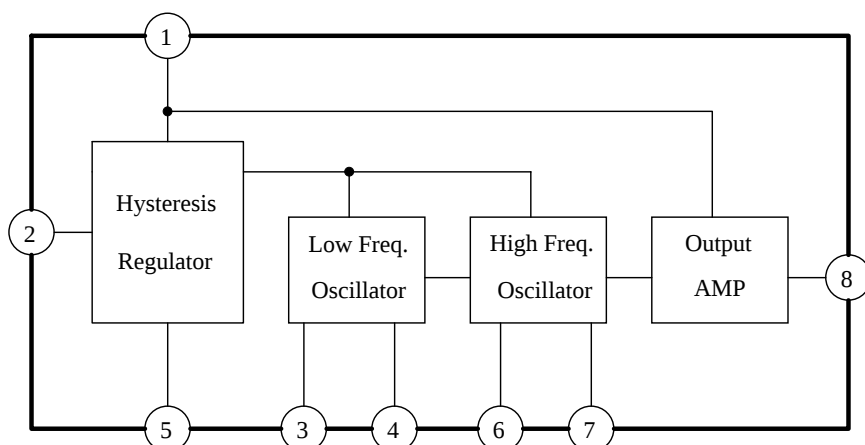
1. Overview

The HC2410 is a bipolar integrated circuit designed for telephone bell replacement

- Low power dissipation
- Adjustable output tune
- Adjustable switching rate
- Built-in hysteresis prevents false triggering
- DIP8

2. Block Diagram and Pin Description

2.1 Block Diagram



2.2 Pin Description

Pin No.	Symbol	Description	Pin No.	Symbol	Description
1	V _{CC}	Supply Voltage	5	GND	GND
2	T _R	Triggering Input	6	R _{Tf}	High Frequency Oscillation Resistance
3	C _{Sf}	Low Frequency Oscillation Capacitor	7	C _{Tf}	High Frequency Oscillation Capacitor
4	R _{Sf}	Low Frequency Oscillation Resistance	8	OUT	Output

3. Electrical Characteristics

3.1 Absolute Maximum Ratings

Unless otherwise specified, $T_{amb} = 25^{\circ}\text{C}$

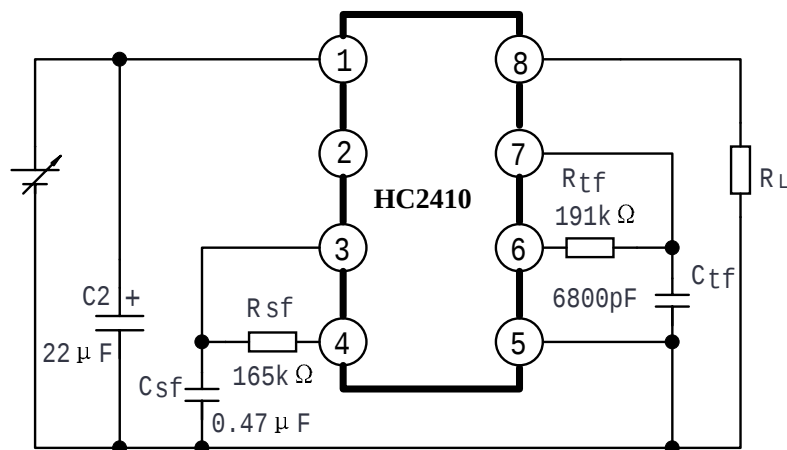
Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	30	V
Power Dissipation	P_D	400	mW
Operating Temperature	T_{amb}	-25 ~ 75	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55 ~ 150	$^{\circ}\text{C}$

3.2 Electrical Characteristics

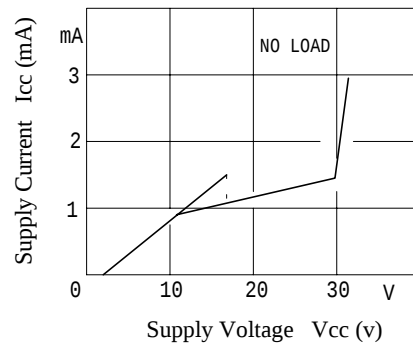
Unless otherwise specified, $T_{amb} = 25^{\circ}\text{C}$

Parameter	Symbol	Test Conditions	Value			Unit
			Min	Typ	Max	
Supply Voltage	V_{CC}				29.0	V
Initiation Voltage	V_{INIT}		17	19	21	V
Initiation Current	I_{INIT}		1.4	2.5	4.2	mA
Sustain Voltage	V_{SUST}		9.7	11	12	V
Sustain Current	I_{SUST}		0.7	1.4	2.5	mA
Output Level High	V_{OH}	$V_{CC}=24\text{V}$, $I_8 = -10\text{mA}$, $V_6=7\text{V}$, $V_7=0\text{V}$	20.0	21.5	22.5	V
Output Level Low	V_{OL}	$V_{CC}=24\text{V}$, $I_8=10\text{mA}$, $V_7=7\text{V}$, $V_6=0\text{V}$	0.7	1.0	2.0	V
Trigger Input Operation Voltage	V_{TR}	$V_{CC}=15\text{V}$, $I_2=100\mu\text{A}$	9.0	10.5	12	V
High Frequency 1	f_{H1}	$R_{TF}=191\text{k}$, $C_{TF}=6800\text{pF}$	461	512	563	Hz
High Frequency 2	f_{H2}	$R_{TF}=191\text{k}$, $C_{TF}=6800\text{pF}$	576	640	703	Hz
Low Frequency	f_{SW}	$R_{SF}=165\text{k}$, $C_{SF}=0.47\mu\text{F}$	9	10	11	Hz

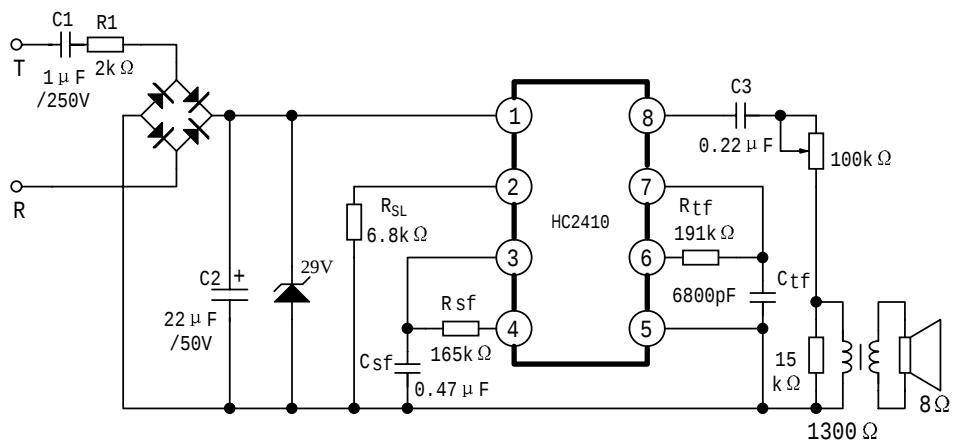
4. Test Circuit



5. Characteristics Curve



6. Application Circuit



7. Package Dimensions

