BT 2410/2411

TONE RINGER
(8 PINs)

The **BT 2410/2411** is a bipolar integrated circuit designed for telephone bell replacement.

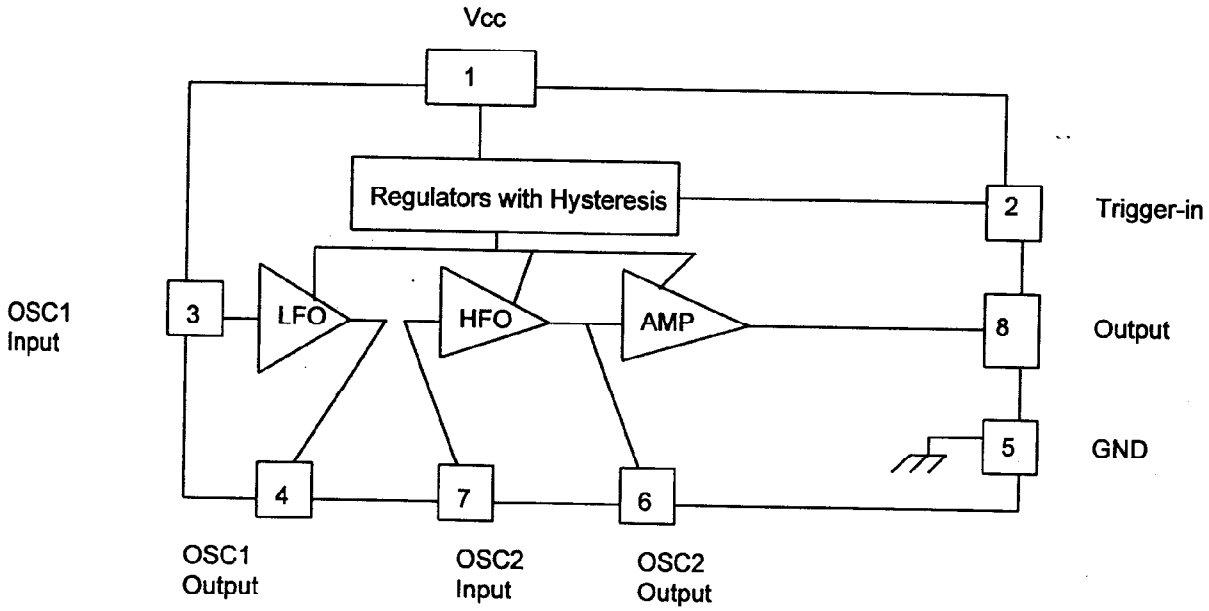
FEATURES

. DESIGNED FOR TELEPHONE BELL REPLACEMENT
. LOW CURRENT DRAIN
. EXTENSION TONE RINGER MODULES
. ADJUSTABLE 2-FREQUENCY TONE
. ALARMS OR ALERTING DEVICES
. EXTERNAL TRIGGERING OR RINGER DISABLE (BT/ FT 2410)
. ADJUSTABLE FOR REDUCED INITIAL SUPPLY CURRENT (BT/FT 2411)
. BUILT-IN HYSTERESIS PREVENTS FALSE TRIGGERING AND ROTARY DIAL ' CHIRPS'
. 8-PIN PLASTIC DIP PACKAGE

FUNCTIONS

. TWO OSCILLATORS
. OUTPUT AMPLIFIER
. POWER SUPPLY CONTROL CIRCUIT

BLOCK DIAGRAM



LFO : LOW FREQUENCY OSC.
PIN 3,4 : LOW FREQUENCY TIME CONSTANT

HFO : HIGH FREQUENCY OSC.
PIN 6,7 : HIGH FREQUENCY TIME CONSTANT

ABSOLUTE MAXIMUN RATINGS(T a = 25°C)

SYMBOL	CHARACTERISTICS	VALUE	UNIT
V CC	SUPPLY VOLTAGE	30	V
PD	POWER DISSIPATION	400	mA
T OPR	OPERATING TEMPERATURE RANGE	- 45 to 70	°C
T STG	STORAGE TEMPERATURE RANGE	- 65 to 150	°C

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TONE RINGER
(8 PINs)

ELECTRICAL CHARACTERISTICS

(T_A = 25°C)

SYMBOL	PARAMETER	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_{CC}	OPERATING SUPPLY VOLTAGE				29	V
V_{SI}	INITIATION SUPPLY VOLTAGE 1		17	19	21	V
I_{SI}	INITIATION SUPPLY CURRENT 1	BT 2411 - 6.8K (PIN 2 to GND)	1.0	2.5	4.2	mA
V_{SUS}	SUSTAINING VOLTAGE 2		9.7	11	12	V
I_{SUS}	SUSTAINING CURRENT 2	NO LOAD V_{CC} = V_{SUS}	0.6	1.4	2.5	mA
V_{TR}	TRIGGER VOLTAGE 3	BT 2410 ONLY V_{CC} = 15V	9	10.5	12	V
I_{TR}	TRIGGER CURRENT 3	BT 2410 ONLY	10	20	1000[5]	µA
V_{DIS}	DISABLE VOLTAGE 4	BT 2410 ONLY			0.8	V
I_{DIS}	DISABLE CURRENT 4	BT 2410 ONLY	- 40	- 50		µA
V_{OH}	OUTPUT VOLTAGE HIGH	V_{CC} = 21 V , I_O = 15mA PIN 6 = 6V , PIN 7 = GND	17	19	21	V
V_{OL}	OUTPUT VOLTAGE LOW	V_{CC} = 21 V , I_O = 15mA PIN 6 = GND , PIN 7 = 6 V		0.9	1.6	V
	I_{IN} (PIN 3) I_{IN} (PIN 7)	PIN 3 = 6 V , PIN 4 = GND PIN 7 = 6 V , PIN 6 = GND			500 500	nA nA
f_{H1} f_{H2} f_L	HIGH FREQUENCY 1 HIGH FREQUENCY 2 LOW FREQUENCY	R_3 = 191K , C_3 = 6800pF R_3 = 191K , C_3 = 6800pF R_3 = 165K , C_2 = 0.47 µF	461 576 9.0	512 640 10	563 704 11.0	Hz Hz Hz

NOTE

1) Initial supply voltage (V_{SI}) is the supply voltage required to start the tone ringer oscillating.
2) Sustaining voltage (V_{SUS}) is the supply voltage required to maintain oscillation.
3) V_{TR} and I_{TR} are the condition applied to trigger in to start oscillattion for $V_{SUS} \leq V_{CC} \leq V_{SI}$
4) V_{DIS} and I_{DIS} are the condition applied to trigger in to inhibit oscillation for $V_{SI} \leq V_{CC}$.
5) trigger current must be limited to this value externally.