GL6850

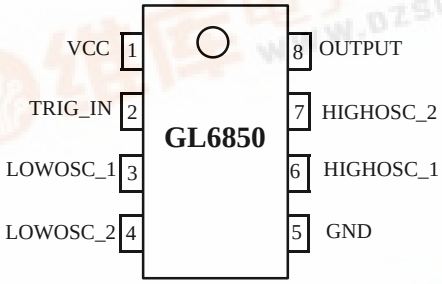
TWO TONE RINGER

Description

The GL6850 tone ringer is a monolithic device, which incorporates two oscillators, and output amplifier and a power supply control circuit. The oscillator frequencies can be adjusted over a wide range by selection of external components. One oscillator, normally operated at a low frequency, causes the second oscillator to alternate between its nominal frequency and a related higher frequency. The resulting output is a distinct warbling tone. The output amplifier will drive either a transformer coupled loudspeaker or a piezo-ceramic transducer.

The device can be powered from a telephone line or a fixed d.c. supply. The power control circuit has built-in hysteresis to prevent false triggering and rotary dial chirps. The GL6850 can be triggered externally under logic control.

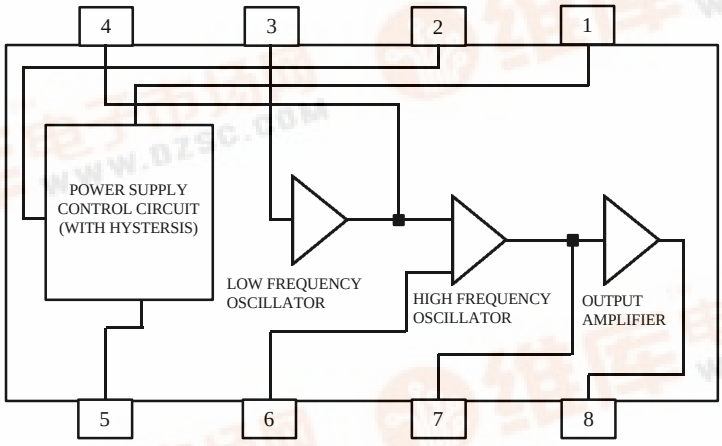
Pin Configuration



Features

- Low current consumption.
- Designed for telephone bell replacement.
- Small size MINIDIP package.
- Adjustable 2- frequency tone.
- Built-in hysteresis prevents false triggering and rotary dial CHIRPS.
- Alarms or other alerting devices.
- External triggering or ringer disable.
- Include ESD protection.

Block Diagram



Absolute Maximum Ratings (Ta = 25¡ É

CHARACTERISTICS	SYMBOL	VALUE	UNIT
Supply Voltage	V_{CC}	30	V
Power Dissipation	Po	400	mW
Operating Temperature	Topr	-25 to 65	¡ É
Storage Temperature	Tstg	-65 to 150	¡ É

Electrical Characteristics (Ta = 25¡ É

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Operating Supply Voltage	V_{CC}		-	-	29.0	V
Initiation Supply Voltage[1]	V_{SI}		17	19	21	V
Initiation Supply Current[1]	I_{SI}		0.9	2.0	3.7	mA
Sustaining Voltage[2]	V_{SUS}		9.7	11.0	12.0	V
Sustaining Current[2]	I_{SUS}		0.4	1.0	2.0	mA
Trigger Voltage[3]	V_{TR}	V_{CC} = 15 V	9.5	-	-	V
Trigger Current[3]	I_{TR}	V_{CC} = 15 V	40	-	1000[5]	µA
Disable Voltage[4]	V_{DIS}	V_{CC} = 21 V	-	-	0.8	V
Disable Current[4]	I_{DIS}	V_{CC} = 21 V	-50	-	-	µA
Output Voltage High	V_{OH}	V_{CC} =21V, I_8=-10mA Pin6 =6V,Pin7=GND	17	19	21	V
Output Voltage Low	V_{OL}	V_{CC} =21V, I_8= -10mA Pin6= GND,Pin7=6V	-	-	2	V
High Frequency 1	f_{H1}	R3=191K, C3=6800Pf	461	461	563	Hz
High Frequency 2	f_{H2}	R3=191K, C3=6800pF	576	640	704	Hz
Low Frequency	f_L	R2=165K, C2=0.47µF	9.0	10	11.0	Hz

* NOTE

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

PIN DESCRIPTION

PIN NUMBER	PIN FUNCTION	DESCRIPTION
PIN 1	VCC	Operating supply D.C. voltage rectified from ringing signal.
PIN2	TRIG_IN	Oscillator External Trigger/Inhibit pin (must beconnected through a current limiting resistor, which is used to program the slope of supply current vs voltage.)
PIN3	LOWOSC_1	Low Frequency Time Constant Adjustment pins f_L is controlled externally by R_2 and C_2 $f_L = 1/1.289R_2C_2$
PIN 4	LOWOSC_2	
PIN 5	GND	Ground
PIN 6	HIGHOSC_1	High Frequency Time Constant Adjustment Pins f_{H1} and f_{H2} are controlled externally by R_3 and C_3. $f_{H1}=1/1.504R_3C_3$, $f_{H2} = 1/1.203R_3C_3$
PIN 7	HIGHOSC_2	
PIN 8	OUTPUT	Tone output

APPLICATON CIRCUIT