

**SANYO**

No.3351A

**LA8500, 8501-P****Tone Ringer****Applications**

- . Telephones and other various types of consumer equipment.

**Features and Functions**

- . Adjustable OSC frequency
- . On-chip power supply control circuit with hysteresis prevents false triggering and rotary dial "chirps".
- . Minimum number of external parts required
- . Adjustable operation start voltage (LA8500)
- . Adjustable operation start current (LA8501-P)

**Maximum Ratings at Ta=25°C**

			unit
Maximum Supply Voltage	$V_{CC}$ max	30	V
Allowable Power Dissipation	$P_d$ max	500	mW
Operating Temperature	$T_{opr}$	-20 to +75	°C
Storage Temperature	$T_{stg}$	-55 to +150	°C

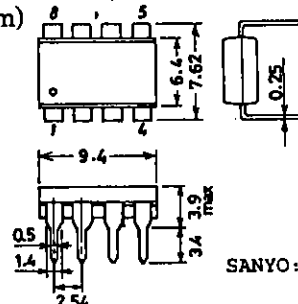
**Operating Conditions at Ta=25°C**

			min	typ	max	unit
Operating Voltage	$V_{opr}$				29	V
Operation Start Supply Voltage	$V_{si}$ (Note 1)		17	19	21	V
Operation Sustain Supply Voltage	$V_{sus}$ (Note 2)		10.5	12		V
Operation Start Current Dissipation	$I_{si}$ No load		1.4	3.3	4.2	mA
Operation Sustain Current Dissipation	$I_{sus}$ No load			1.0		mA
OSC Frequency (Note 3)	$f_L$	$C1=0.47\mu F, R1=165k\Omega$	9	10	11	Hz
	$f_{H1}$	$C2=6800pF, R2=191k\Omega$	461	512	563	Hz
	$f_{H2}$	$C2=6800pF, R2=191k\Omega$	576	640	703	Hz
Output Voltage	H Level $V_{OH}$	$V_{CC}=24V, I_{OH}=-10mA, PIN 7=GND$	20.0	21.5	22.5	V
	L Level $V_{OL}$	$V_{CC}=24V, I_{OL}=10mA, PIN 7=7V$	0.7	1.0	2.0	V
Trigger Pin Operating Voltage (LA8500)	$V_{trig}$	$V_{CC}=15V, I_{trig}=100\mu A$	7.8	10	11.5	V

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**Package Dimensions 3001B**

(unit: mm)

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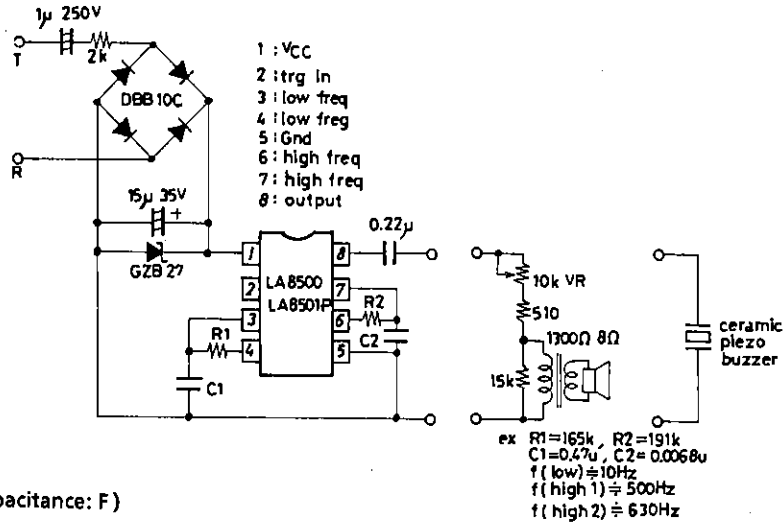
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Note 1: Operation start supply voltage ( $V_{si}$ ) is the value of supply voltage required for the tone ringer to start oscillating.

Note 2: Operation sustain supply voltage ( $V_{sus}$ ) is the value of supply voltage required for the tone ringer to maintain oscillation.

Note 3: OSC frequencies are: (1)  $f_L = 1/1.234 \cdot R1 \cdot C1$   
 (2)  $f_{H1} = 1/1.515 \cdot R2 \cdot C2$   
 (3)  $f_{H2} = 1.24 \cdot f_{H1}$

**Sample Application Circuit**



Unit (resistance: Ω, capacitance: F)

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