

**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

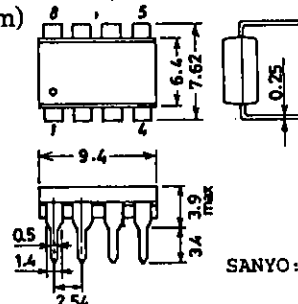
**Operating Conditions at Ta=25°C**

			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)



SANYO: DIP8

**SANYO Electric Co., Ltd. Semiconductor Business Headquarters**

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

70494HK / 1170YT / 8087TA, TS No.3351-1/2

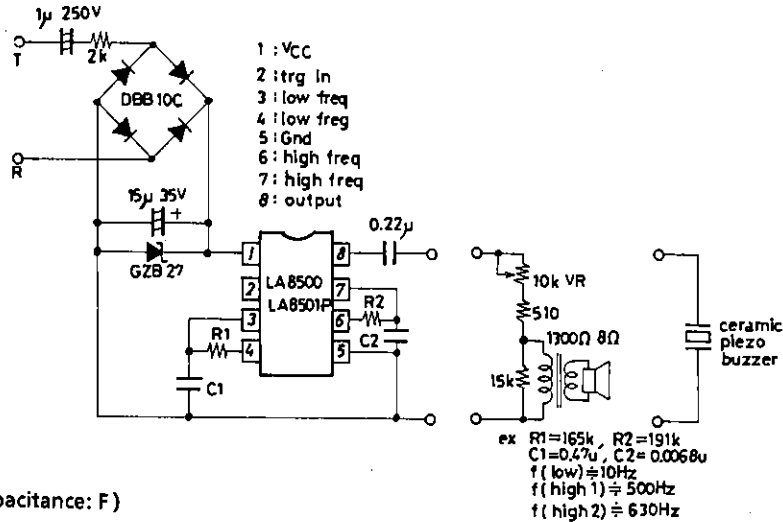
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Note 1: Operation start supply voltage ( $V_{si}$ ) is the value of supply voltage required for the tone ringer to start oscillating.

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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