

AN6171

Telephone Tone Set Ringer

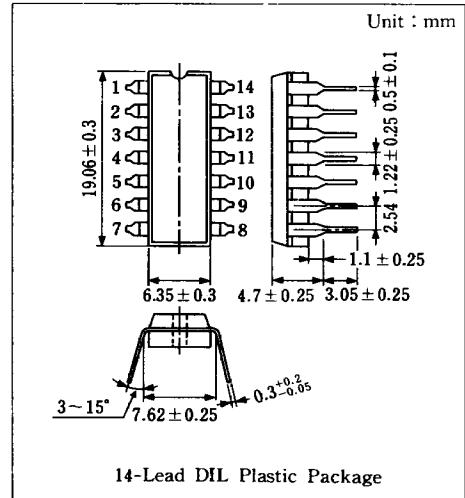
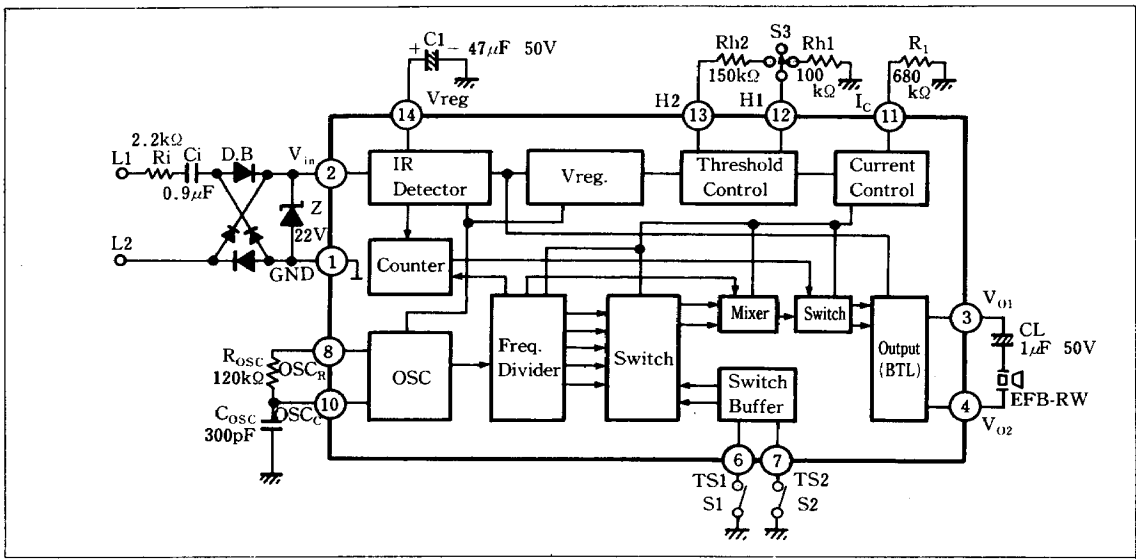
■ Outline

The AN6171 is a tone ringer IC which drives a ceramic sounder or speaker as power supply for IC upon receipt of a call signal from telephone set.

■ Features

- Wide selection of output tone
Four types of tremolo sounds can be selected by SW₁ and SW₂. Each tremolo sound is generated by I2L divider circuit and mixer circuit.
- Rumbling starting voltage variable
Ringer rumbling starting voltage is made variable with external resistors Rh1 and Rh2.
- Built-in hysteresis circuit
This circuit can prevent malfunction due to power noise, resonance due to dial pulse and malfunction due to howler.
- Built-in time starting circuit
This circuit follows the signal such as Centlex whose nonrumbling time is short.
- High output power by BTL circuit
* 1 Howler : Alarm signal when the receiver is off-hook.
* 2 Centlex : 0.2-sec interval of call signal.

■ Block Diagram and Peripheral Circuit



■ Pin

Pin No.	Pin Name	Pin No.	Pin Name
1	GND	8	Resistor for OSC
2	Input Voltage	9	NC
3	Output (1)	10	Capacitor for OSC
4	Output (2)	11	I ² L Current Control
5	NC	12	Threshold Control (1)
6	Tremolo Select (1)	13	Threshold Control (2)
7	Tremolo Select (2)	14	Filter Capacitor

■ External Conditions of Tone Ringer Circuit (Japan)

Item	Technical Reference Standard Value	Unit
Call Signal Supply Voltage	75^{+8}_{-10}	Vrms
Call Signal Power Frequency	16.6 ± 1	Hz
Electrostatic Capacitance of Telephone Set	0.9	μ F
Impedance of Telephone Set	11 or more	k Ω

■ Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Supply Voltage	V _{CC}	24	V
Power Dissipation	P _D	500	mW
Operating Ambient Temperature	T _{opr}	-30 ~ +75	°C
Storage Temperature	T _{stg}	-55 ~ +150	°C

■ Electrical Characteristics (V_{CC}=24V, Ta=25°C)

Item	Symbol	Condition	typ.	Unit
Rumbling Starting Supply Voltage	V _{st}	R _L = ∞	18.5	V
Rumbling Continuous Supply Voltage	V _{con}	R _L = ∞	12	V
Rumbling Starting Current Consumption	I _{st}	R _L = ∞	2.0	mA
Rumbling Continuous Current Consumption	I _{con}	R _L = ∞	1.8	mA
Output Frequency (1)	f _w /f ₁ /f ₃	V _{CC} =22V, Refer to the table.	15.3/1400/980	Hz
Output Frequency (2)	f _w /f ₂ /f ₃	V _{CC} =22V, Refer to the table.	15.3/1225/980	Hz
Output Frequency (3)	f _w /f ₃ /f ₄	V _{CC} =22V, Refer to the table.	15.3/980/820	Hz
Output Frequency (4)	f _w /f ₄ /f ₅	V _{CC} =22V, Refer to the table.	15.3/820/700	Hz
Output Voltage	V _{OPP}	V _{CC} =22V,	36	V _{PP}

Note : Operating Supply Voltage Range : V_{CC(opr)}=8.5~24V

(Table) Measurement Conditions of Output Frequency

Output Frequency	Pin	Pin ⑥	Pin ⑦
(1)		OPEN	OPEN
(2)		OPEN	GND
(3)		GND	OPEN
(4)		GND	GND

