

AN6171

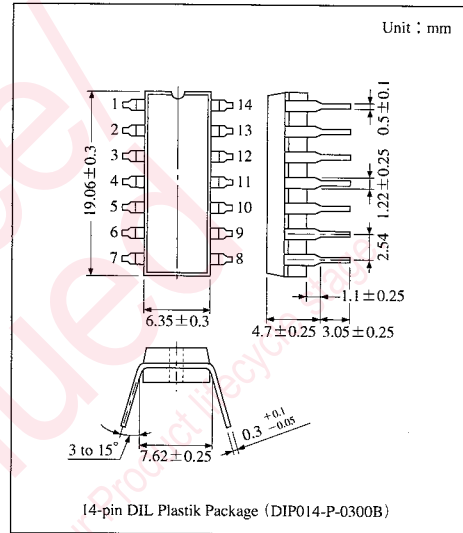
Tone Ringer

Overview

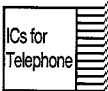
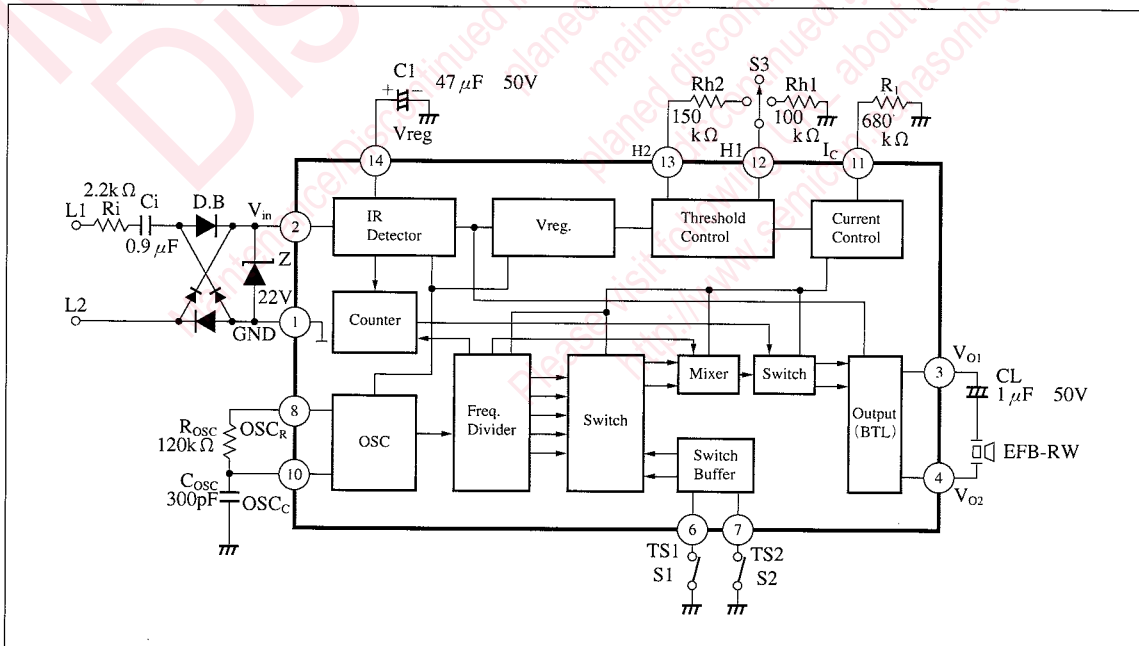
The AN6171 is a tone ringer IC which drives a ceramic sounder or speaker as power supply for IC upon receipt of a call signal from telephone set.

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



Pin Descriptions

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

Other Requirements for Tone Ringer Circuit Other (Japan)

Parameter	Technical reference and Limit Values	Unit
Call signal supply voltage	75 ⁺⁸ / ₋₁₀	Vrms
Call signal supply frequency	16.6 ± 1	Hz
Electrostatic capacity of telephone	0.9	μF
Impedance of telephone	11 or more	kΩ

Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Rating	Unit
Supply voltage	V _{CC}	24	V
Power dissipation	P _D	500	mW
Operating ambient temperature	T _{opr}	-30 to +75	°C
Storage temperature	T _{stg}	-55 to +150	°C

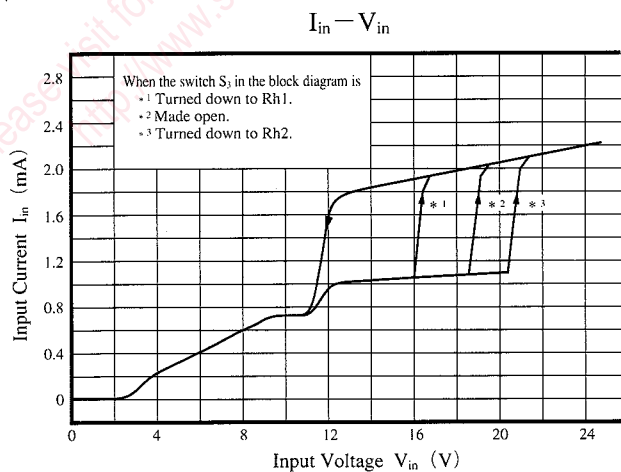
Electrical Characteristics (V_{CC} = 24V, Ta = 25°C)

Parameter	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 _{P-P}

Note) Operating supply voltage range : V_{CC(opr)} = 8.5 to 24V

(Table) Measurement Conditions of Output Frequency

Output frequency	Pin	Pin⑥	Pin⑦
(1)		OPEN	OPEN
(2)		OPEN	GND
(3)		GND	OPEN
(4)		GND	GND



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