

# TA8136S

## RADIO CONTROL TRANSMITTER IC

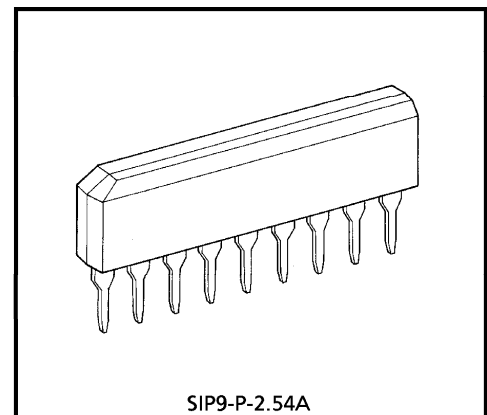
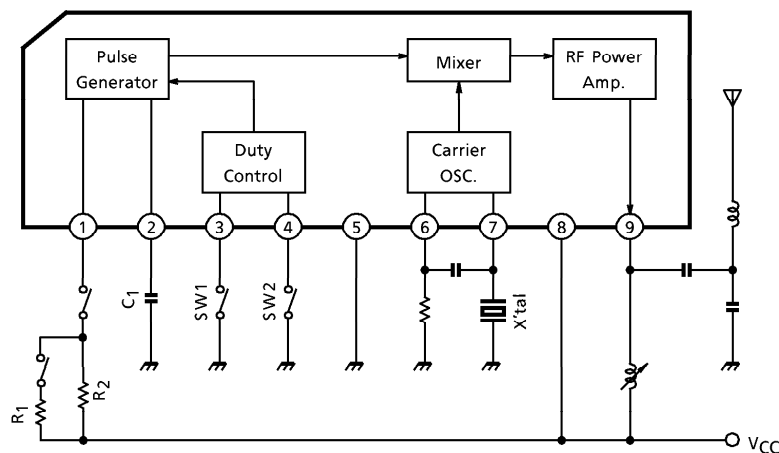
The TA8136S is designed for a 1 chip transmitter IC including pulse generator, duty control mixer, carrier oscillator, and RF power amplifier.

This IC has 7 control modes by combination of external switches (SW1 and SW2). A modulation frequency (pulse wave) is set arbitrarily by capacitance  $C_1$ , resistance  $R_1$  and  $R_2$ .

### FEATURES

- Very few external parts
- Square wave frequency can be freely set.
- Square wave duty cycle can be controlled keeping fixed frequency.
- Wide supply voltage range :  $V_{CC(opr)} = 6 \sim 11V$  (Recommended  $V_{CC} = 9V$ )

### BLOCK DIAGRAM



Weight : 0.92g (Typ.)

961001EBA2

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**MAXIMUM RATINGS (Ta = 25°C)**

| CHARACTERISTIC        | SYMBOL                | RATING   | UNIT |
|-----------------------|-----------------------|----------|------|
| Supply Voltage        | V <sub>CC</sub>       | 12       | V    |
| Power Dissipation     | P <sub>D</sub> (Note) | 600      | mW   |
| Operating Temperature | T <sub>opr</sub>      | - 25~75  | °C   |
| Storage Temperature   | T <sub>stg</sub>      | - 55~150 | °C   |

(Note) Derated above 25°C in the proportion of 4.8mW/°C.

**ELECTRICAL CHARACTERISTICS (Unless otherwise specified, Ta = 25°C, V<sub>CC</sub> = 9V, f<sub>OSC</sub> = 27MHz)**

| CHARACTERISTIC           | SYMBOL              | TEST CIRCUIT | TEST CONDITION            | MIN. | TYP. | MAX. | UNIT |
|--------------------------|---------------------|--------------|---------------------------|------|------|------|------|
| Supply Current           | I <sub>CC</sub> (1) | 1            | A Mode                    | —    | 20   | 27   | mA   |
|                          | I <sub>CC</sub> (2) |              | B Mode                    | —    | 22   | —    |      |
|                          | I <sub>CC</sub> (3) |              | C Mode                    | —    | 18   | —    |      |
| Transmitter Output Power | P <sub>O</sub> (1)  | 1            | f <sub>OSC</sub> = 27MHz  | 16   | 30   | —    | mW   |
|                          | P <sub>O</sub> (2)  | 2            | f <sub>OSC</sub> = 40MkHz |      |      |      |      |
| Modulation Frequency     | f <sub>m</sub>      | 3            | A, B, C Mode              | —    | 2.3  | —    | kHz  |

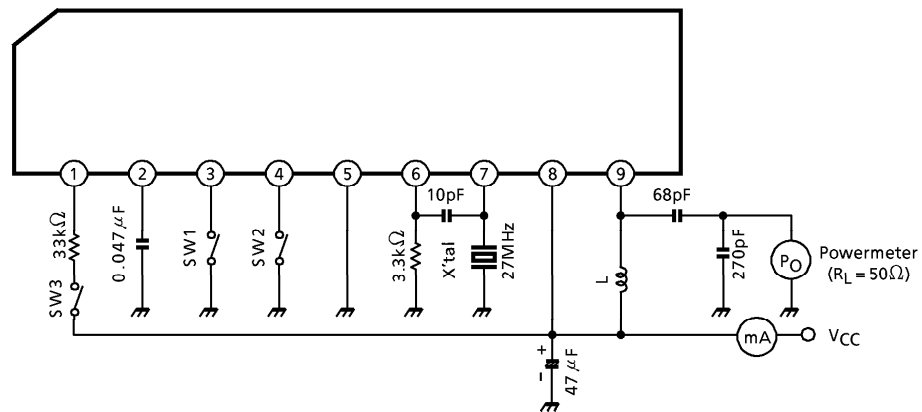
A Mode→SW1, SW2 : OFF

B Mode→SW1 : ON, SW2 : OFF

C Mode→SW1 : OFF, SW2 : ON

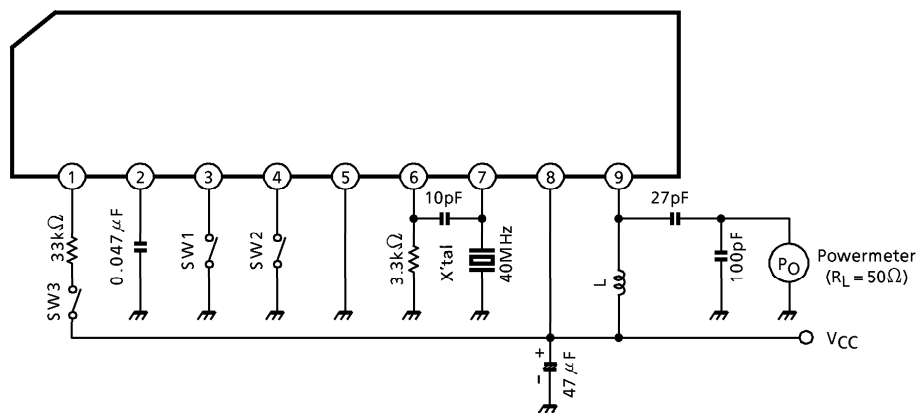
(Note) Non Moduration Mode

**TEST CIRCUIT 1**



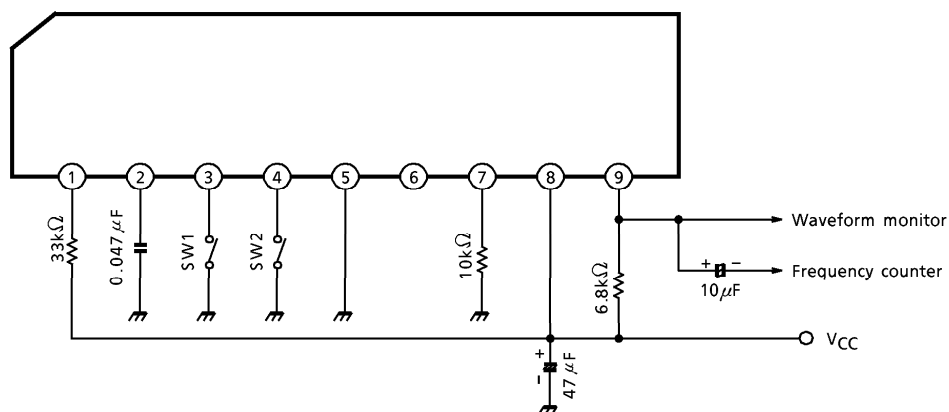
L : KY-6008 (Mitsumi)  
10 1/2T, φ0.5mm UEW  
Bobbin with Ferrite Core

TEST CIRCUIT 2

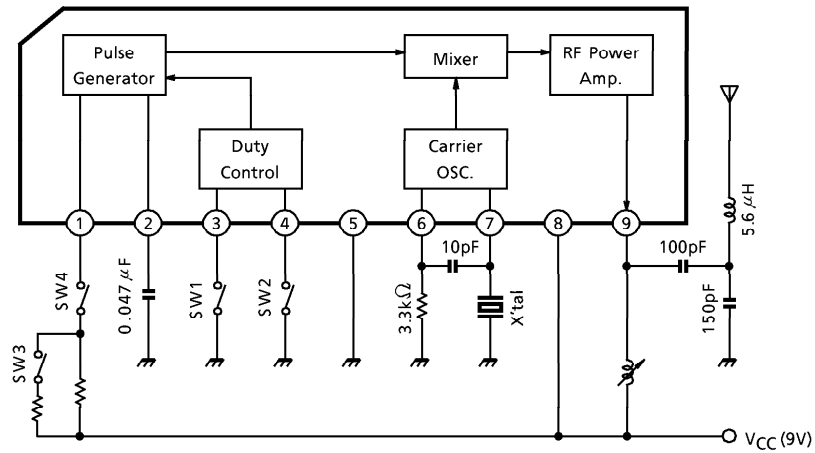


L : KY-6008 (Mitsumi)  
 10 1/2T, φ0.5mm UEW  
 Bobbin with Ferrite Core

TEST CIRCUIT 3



**27MHZ APPLICATION CIRCUIT**



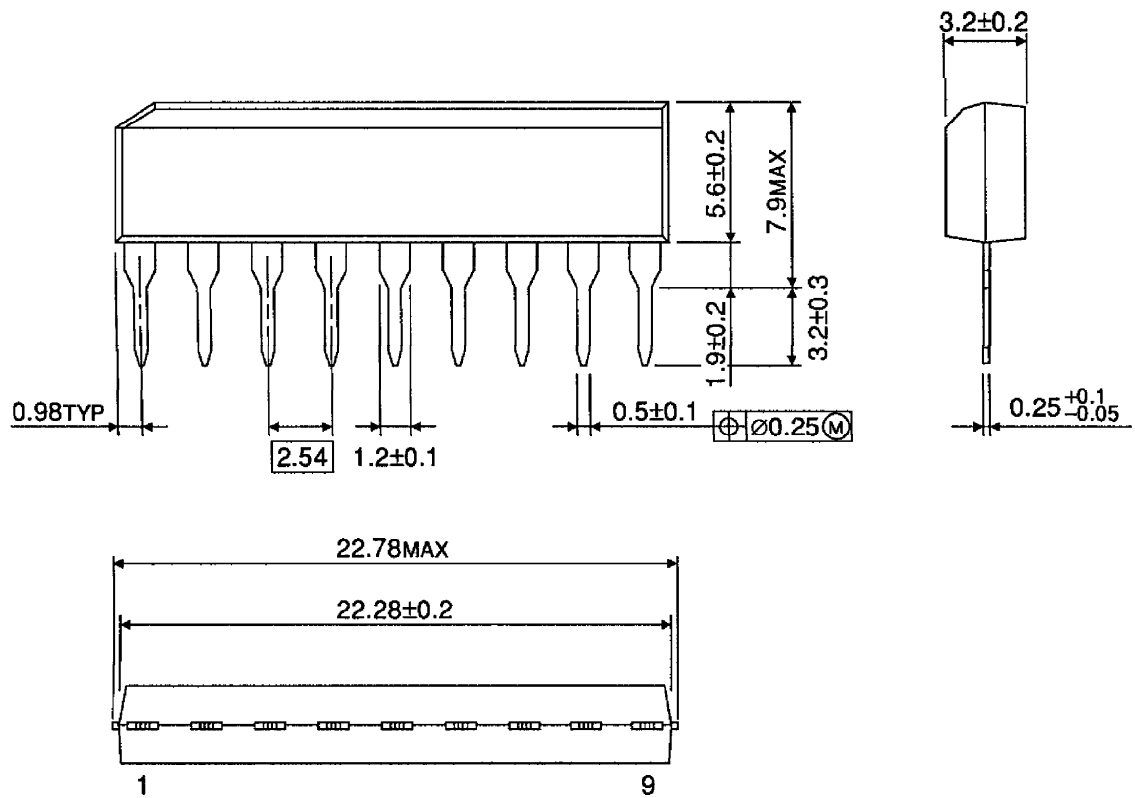
**TRANSMITTER OUTPUT WAVE FORM**

| SW4 | SW1 | SW2 | SW3 OFF | SW3 ON | DUTY CYCLE (%)      |
|-----|-----|-----|---------|--------|---------------------|
| OFF | —   | —   |         |        | Non-Modulation Mode |
| ON  | OFF | OFF |         |        | 50                  |
|     | ON  | OFF |         |        | 75                  |
|     | OFF | ON  |         |        | 25                  |

(Freq.1 < Freq.2)

**OUTLINE DRAWING**  
SIP9-P-2.54A

Unit : mm



Weight : 0.92g (Typ.)