TOSHIBA INTEGRATED CIRCUIT
TECHNICAL DATA

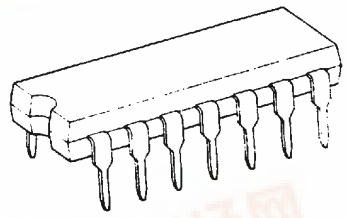
TA7657P

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT
SILICON MONOLITHIC

RADIO CONTROL RECEIVER IC

The TA7657P is designed for a radio control receiver IC including regulator, amplifier, integrator, comparator and driver.
By combining TA7333P (Transmitter IC) and TA7657P (Receiver IC) a suitable radio control system of toy is able to be constituted.

. Very Few External Parts
. Wide Sypply Voltage Range: V_{opr}=6～10V
Recommended V_{CC}=9V



DIP14-P-300

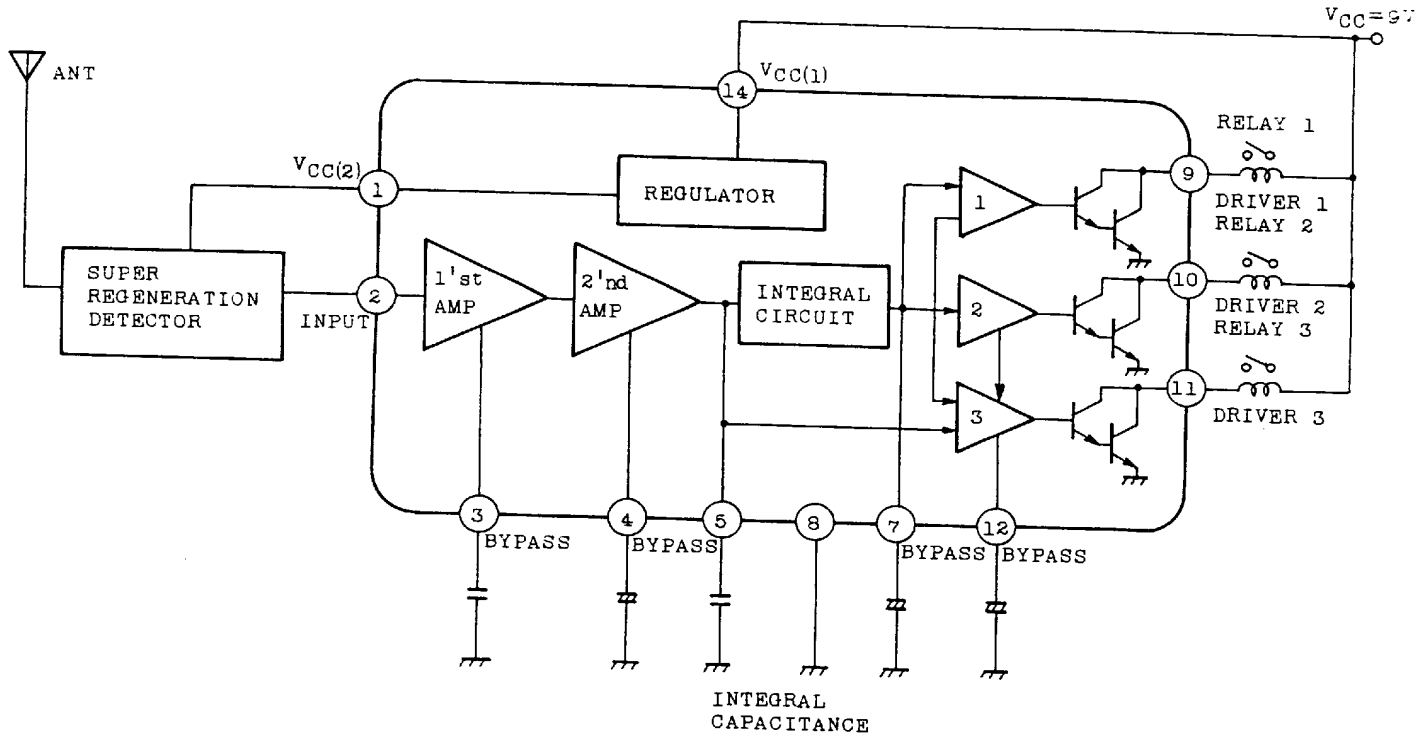
Weight: 1.0g(Typ.)

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	12	V
Driver Terminal Voltage	V_d	V_{DD}+0.3	V
Driver Terminal Current	I_d	120	mA
Regulator Output Current	I_1	5	mA
Power Dissipation (Note)	P_D	625	mW
Operating Temperature	Topr	-25～75	°C
Storage Temperature	Tstg	-55～150	°C

Note : Derated above Ta=25°C in the proportion of 5mW/°C

BLOCK DIAGRAM

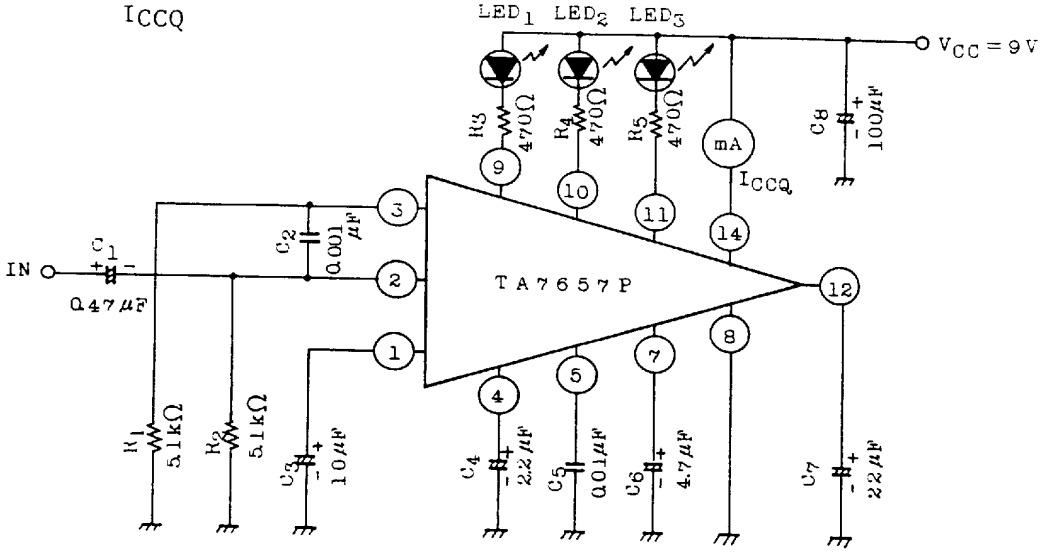


ELECTRICAL CHARACTERISTICS (Unless otherwise specified V_{CC}=9V, Ta=25°C)

CHARACTERISTIC		SYBMOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current		I_{CCQ}	1	V_{IN}=0	-	10.5	13.5	mA
Saturation Voltage	9 Pin	$V_{9(sat)}$	-	I_8=100mA	-	0.9	1.2	V
	10 Pin	$V_{10(sat)}$	-	I_9=100mA	-	0.9	1.2	
	11 Pin	$V_{11(sat)}$	-	I_{10}=100mA	-	0.9	1.2	
1 Pin Voltage		V_1	-	-	4.7	5.0	5.3	V
Voltage Gain		G_V	2	V_{IN}=-70dBm, f=1kHz	62	65	68	dB

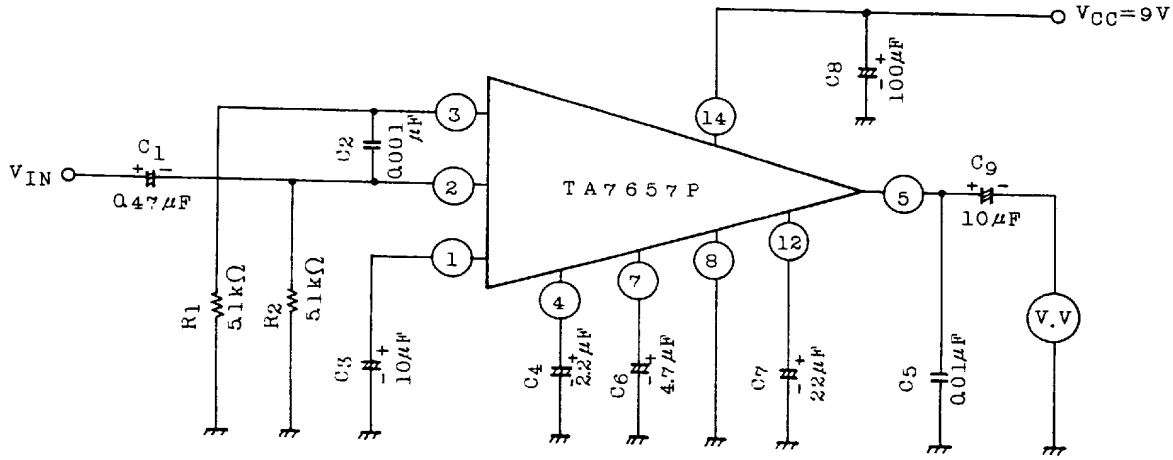
TEST CIRCUIT

1. FUNCTION TEST
   I_{CCQ}



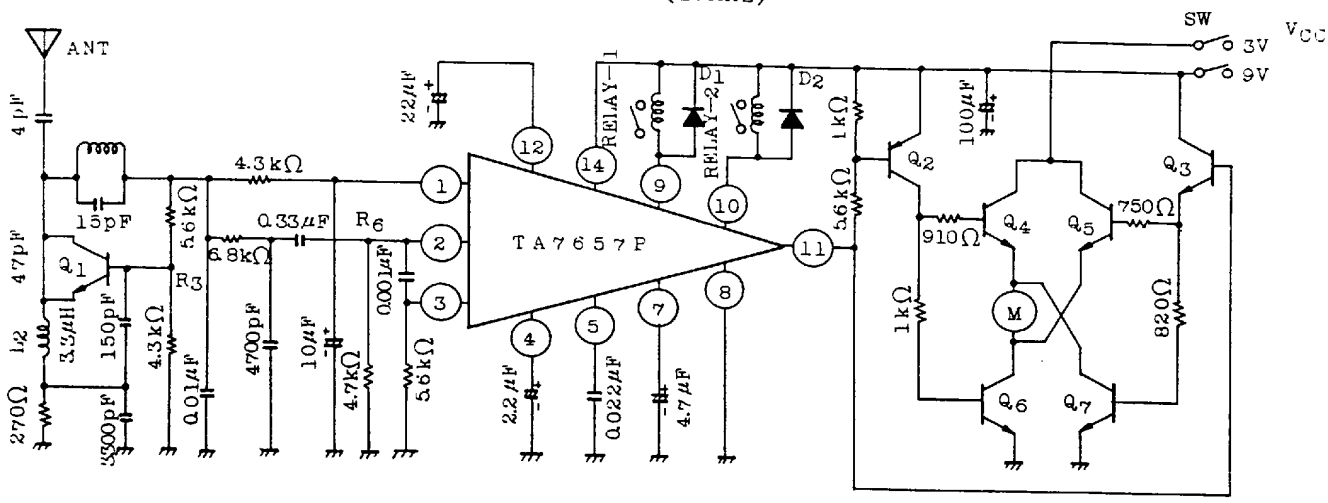
TEST No.	INPUT WAVE SHAPE	VIN (mVp-p)	LED			CORESPONDING TA7333P SITUATION
			1	2	3	
1		2	-	-	-	
2		10	ON	-	-	SW_R ON
3		10	-	ON	-	SW_L ON
4		10	-	-	ON	SW_L ON, SW_R ON

2. G_V



APPLICATION CIRCUIT

1. 4 ACTION RADIO CONTROL RECEIVER CIRCUIT (27MHz)



D_1, D_2 : 1S1555 Q_1 : 2SC380-Y

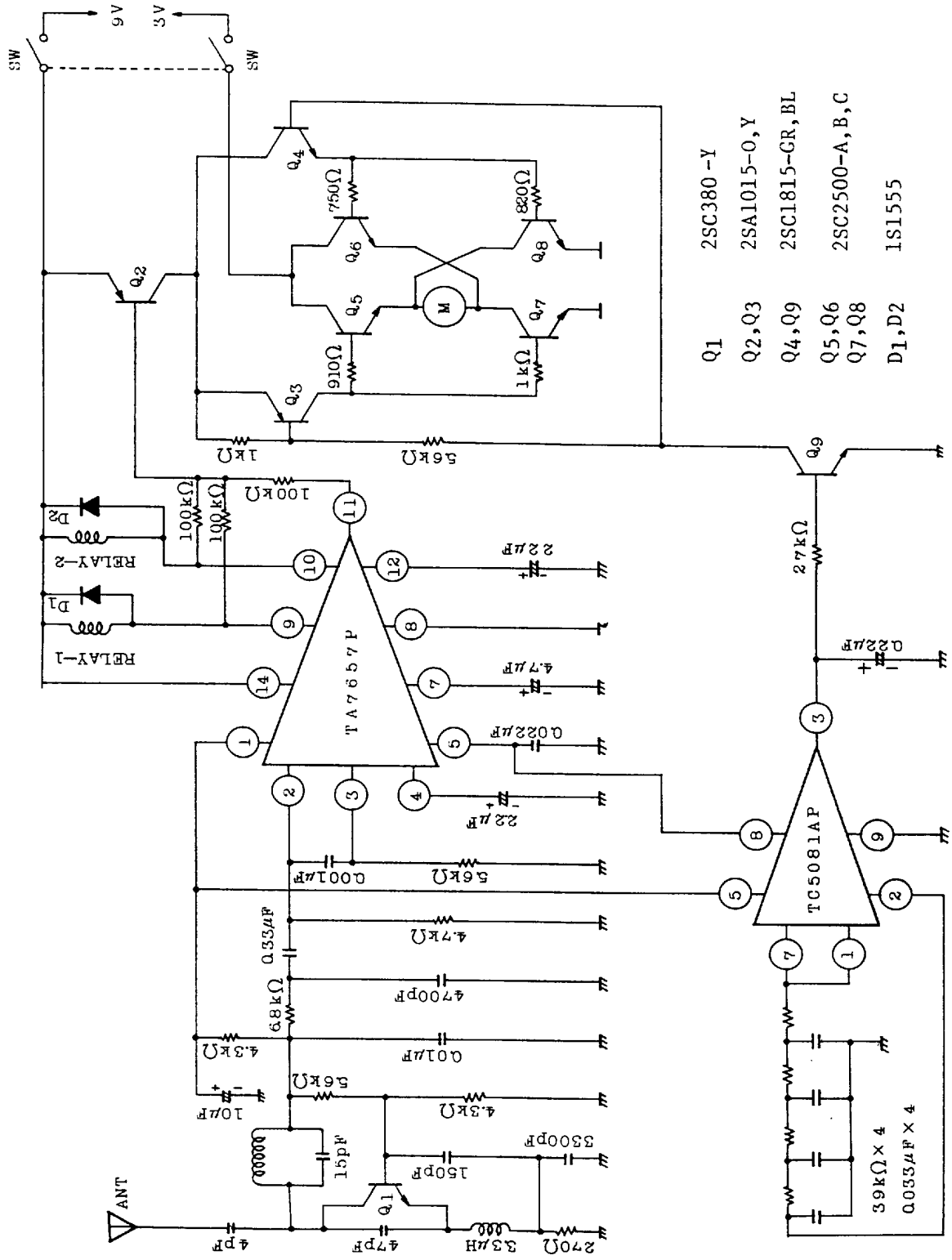
Q_2 : 2SA1015-O,Y Q_3 : 2SC1815-GR, BL

Q_4, Q_5, Q_6, Q_7 : 2SC2500-A,B,C

4 Kind of control is done in this application circuit.

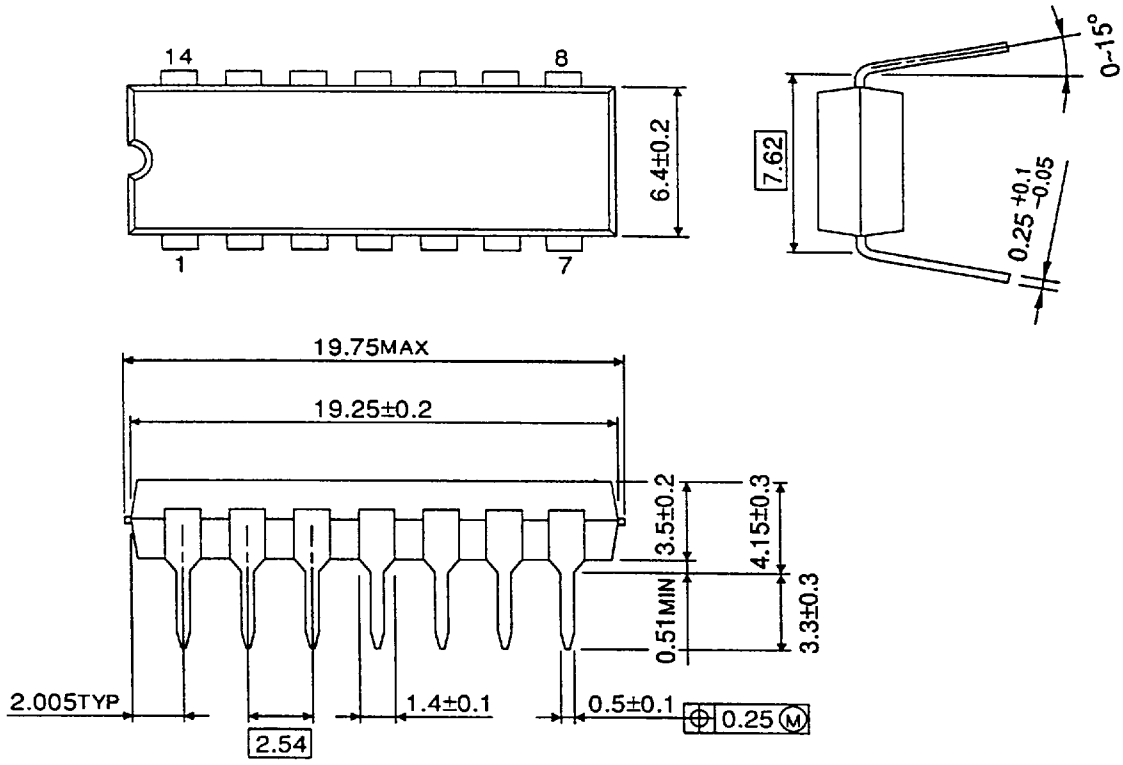
INPUT WAVE SHAPE AT 2 PIN	OPERATING EXPLANATION	TA7333P SITUATION
1. No Signal	When a power supply switch is turned on, a motor starts to turn. (The motor drive current route: V_{CC}(3V) → Q_5 → Motor → Q_7 → GND)	Carrier only (no modulation) SW_R : OFF SW_L : OFF
2. 	. The motor turning direction is same as case of no signal. . A relay - 1 is on	SW_R : ON SW_L : OFF
3. 	. The motor turning direction is same as case of no signal. . A relay - 2 is on	SW_R : OFF SW_L : ON
4. 	11 pin voltage is low, Q_2 is on and Q_3 is off, therefore the motor turning direction is reverse. (motor drive current route : V_{CC}(3V) → Q_4 → Motor → Q_6 → GND)	SW_R : ON SW_L : ON

2. 7 ACTION RADIO CONTROL RECEIVER CIRCUIT (27MHz)



OUTLINE DRAWING
DIP14-P-300

Unit in mm



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