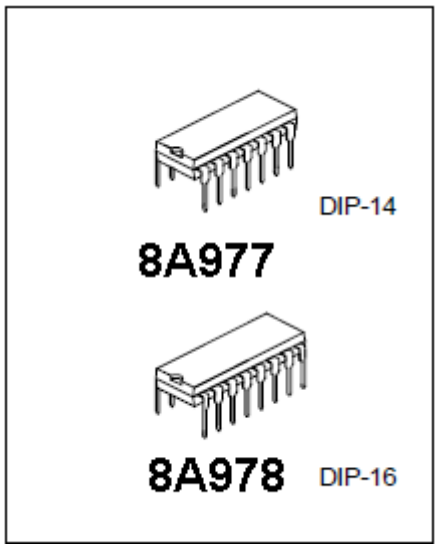
REMOTE CONTROLLER WITH FIVE FUNCTIONS

8A977\8A978



DESCRIPTION

The 8A977/8A978 is a pair of CMOS LSIs designed for remote controlled car applications. The 8A977/8A978 has five control keys for controlling the motions (i.e. forward, backward, rightward, leftward and the turbo function) of the remote controlled car.

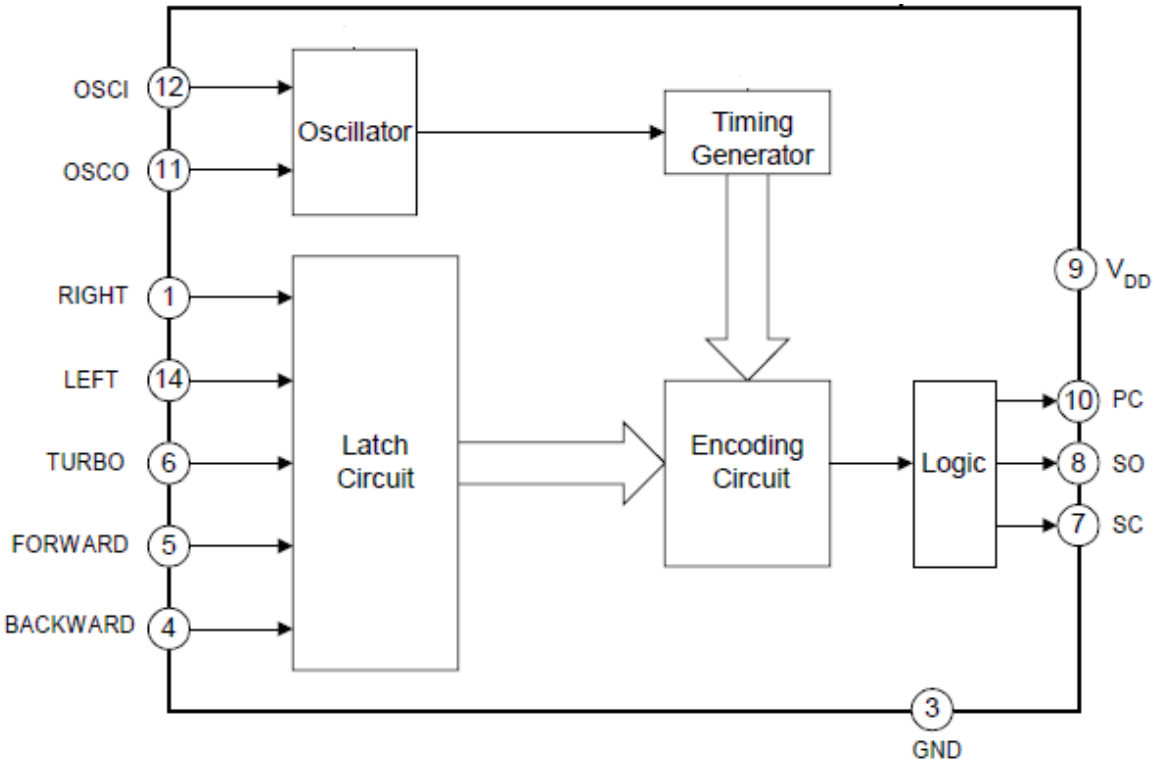
FEATURES

* Wide operating voltage range (VCC=1.5~5.0V)
* Low stand-by current
* Auto-power-off function for 8A977
* Few external components are needed
* Built-in 3.6V zener for 8A978

ORDERING INFORMATION

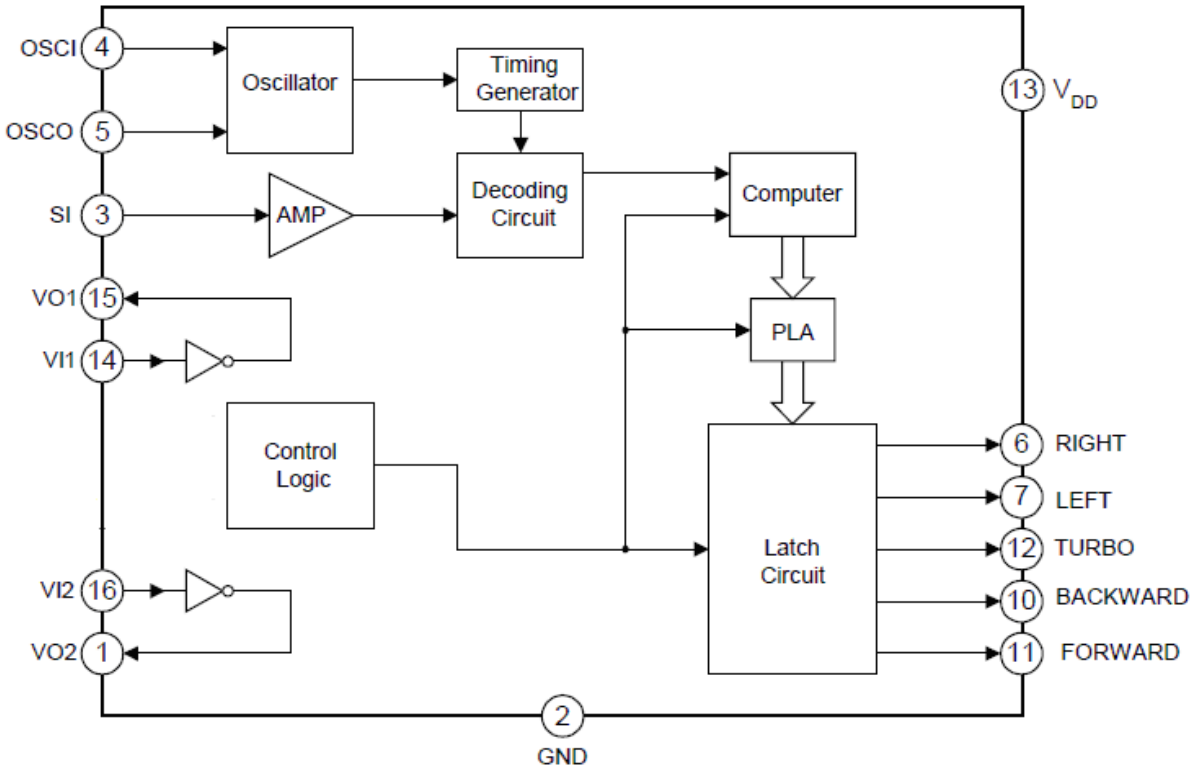
Part No.	Package
8A977	DIP-14-300-2.54
8A978	DIP-16-300-2.54

BLOCK DIAGRAM



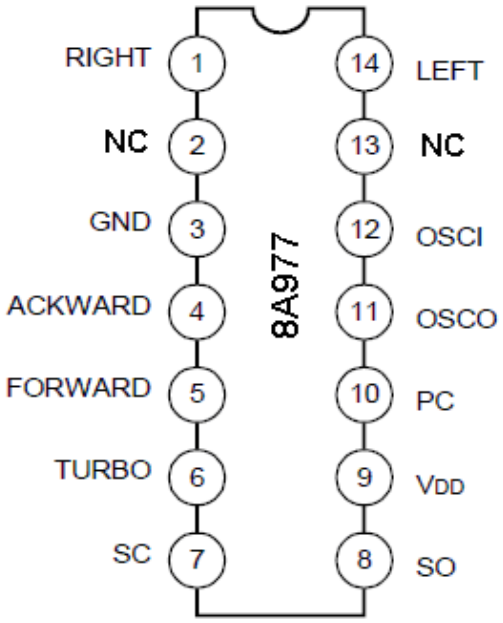
TRANSMITTER 8A977 Block Diagram

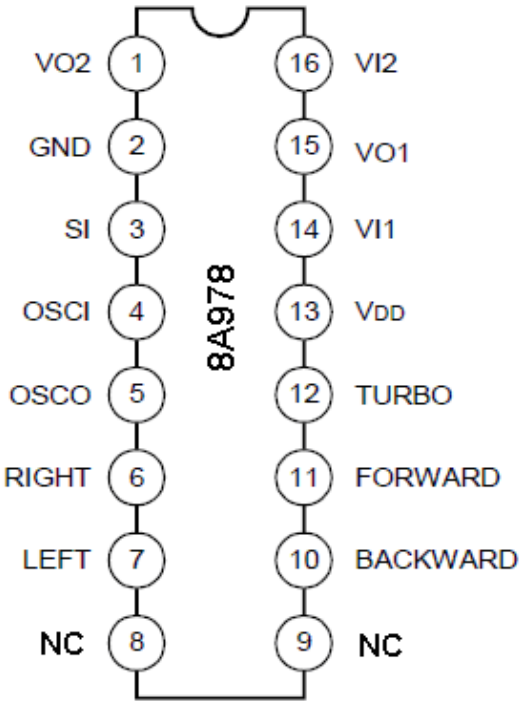
BLOCK DIAGRAM



RECEIVER 8A978 Block Diagram

PIN CONFIGURATION





ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Value	Unit
Supply Voltage	VDD	0.3~5.0	V
Input / Output Voltage	VIN, VOUT	GND-0.3~VDD+0.3	V
Operating Temperature	TOPR	-10~65	°C
Storage Temperature	Tstg	-25~125	°C

ELECTRICAL CHARACTERISTICS

1. 8A977 (VDD=4.0V, Fosc=128KHz, Tamb =25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit
Operating Voltage	VDD	1.5	4.0	5.0	V
Operating Current	IDD	--	--	2.0	mA
Stand-By Current	ISTB	--	--	10	μA
DC O/P Driving Current	Idrive	5	--	--	mA
AC O/P Driving Current	Idrive	5	--	--	mA
AC O/P Frequency	Faudio	0.5	--	1.0	kHz

2. 8A978 (VDD=3.6V,Fosc=128KHz, Tamb=25°C, unless otherwise specified.)

characteristic	Symbol	Min	Typ	Max	Unit
Operating Voltage	VDD	1.5	3.6	--	V
Operating Current	IDD	--	--	3.0	mA
O/P Driving Current	Idrive	1	--	--	mA
O/P Sinking Current	Isink	1	--	--	mA
Effect Decoding Frequency Variation	Ftolerance	-20	--	20	%

PIN DESCRIPTION

1. 8A977

Pin No.	Symbol	Description
1	RIGHT	The rightward function will be selected, if this pin is connected to GND
2	TEST	This pin is used for testing mode
3	GND	Negative power supply
4	BACKWARD	The backward function will be selected, if this pin is connected to GND
5	FORWARD	The forward function will be selected, if this pin is connected to GND

(Continued)

Pin No.	Symbol	Description
6	TURBO	The turbo function will be selected if this pin is connected to GND
7	SC	Output pin of the encoding signal with carrier frequency
8	SO	Output pin of the encoding signal without carrier frequency
9	VDD	Positive power supply
10	PC	Power control output pin
11	OSCO	Oscillator output pin
12	OSCI	Oscillator input pin
13	FOSC	This pin is used for testing mode
14	LEFT	The leftward function will be selected, if this pin is connected to GND

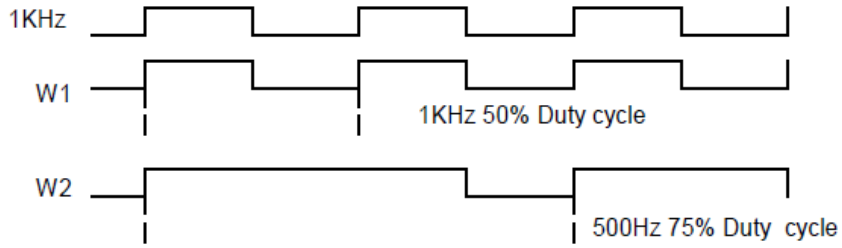
2. 8A978

Pin No.	Symbol	Description
1	VO2	Inverter 2 output pin for power amplify
2	GND	Negative power supply
3	SI	Input pin of the encoding signal
4	OSCI	Oscillator input pin
5	OSCO	Oscillator output pin
6	RIGHT	Rightward output pin
7	LEFT	Leftward output pin
8	ROB	Rightward function disable, if this pin is connected to GND
9	LDB	Leftward function disable, if this pin is connected to GND
10	BACKWARD	Backward output pin
11	FORWARD	Forward output pin
12	TURBO	TURBO output pin
13	VDD	Positive power supply
14	VI1	Inverter 1 input pin for power amplify
15	VO1	Inverter 1 output pin for power amplify
16	VI2	Inverter 2 input pin for power amplify

CODE FORMAT

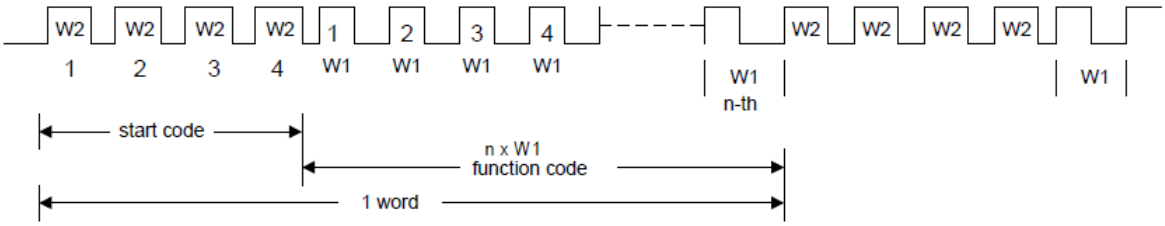
1、ENCODE RULE

(A).Bit Format (W1 is used for function codes,W2 for start codes)



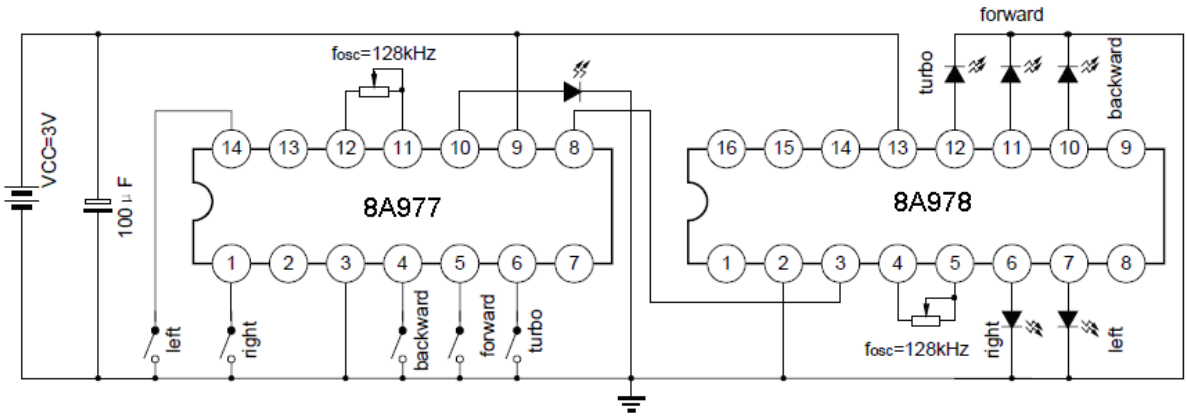
(B).DateFormat

W2	W2	W2	W2	(n) X W1	W2	W2	W2	W2	(n) X W1	W2	W2	W2	W2



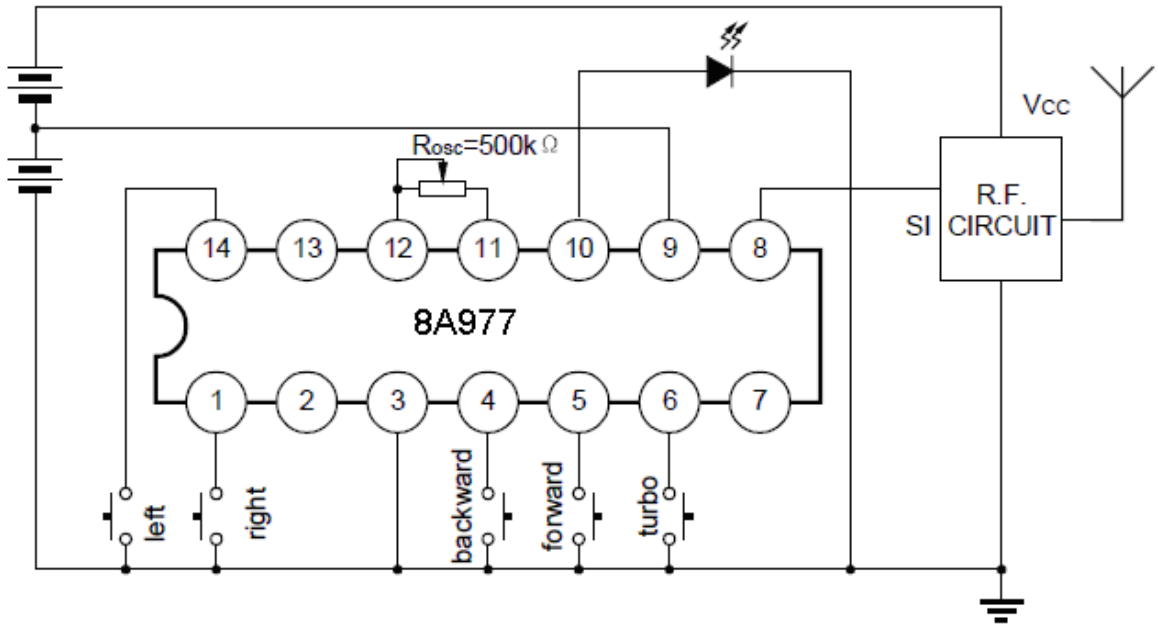
TESTING CIRCUIT

(The oscillator frequency of 8A977, 8A978 is 128KHz, the oscillator resistor is 200K∧ respectively)

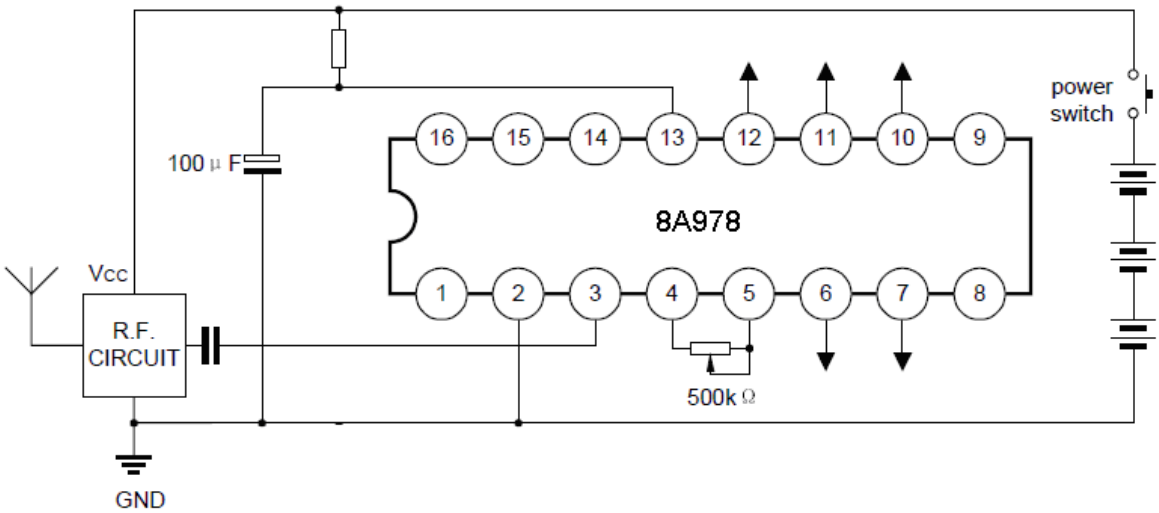


TYPICAL APPLICATION CIRCUIT

TRANSMITTER

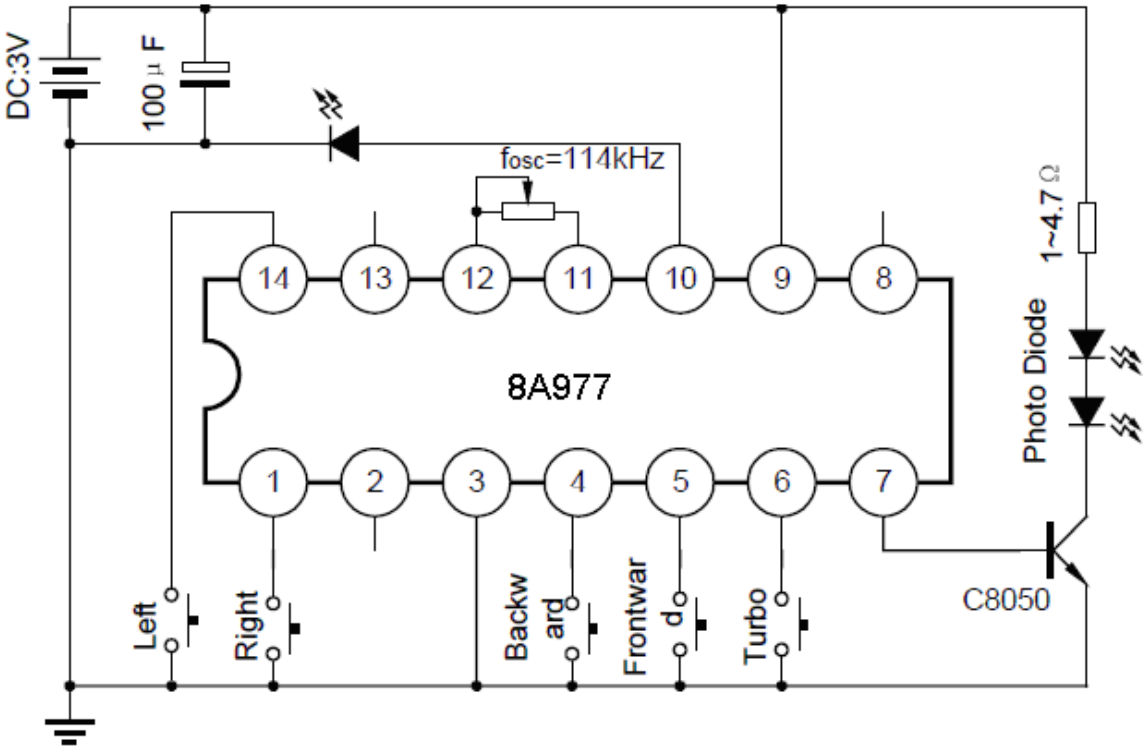


RECEIVER

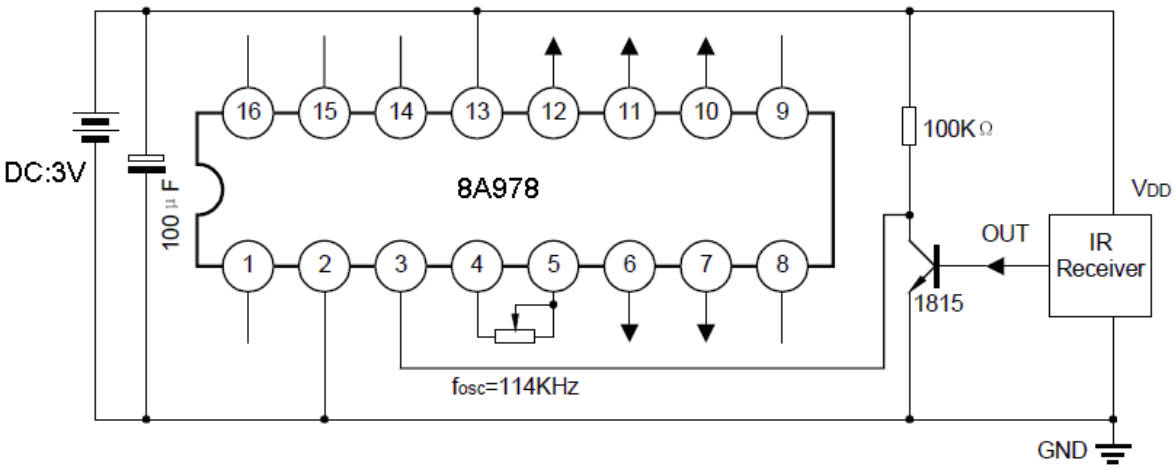


INFRARED APPLICATION CIRCUIT 8A977\8A978

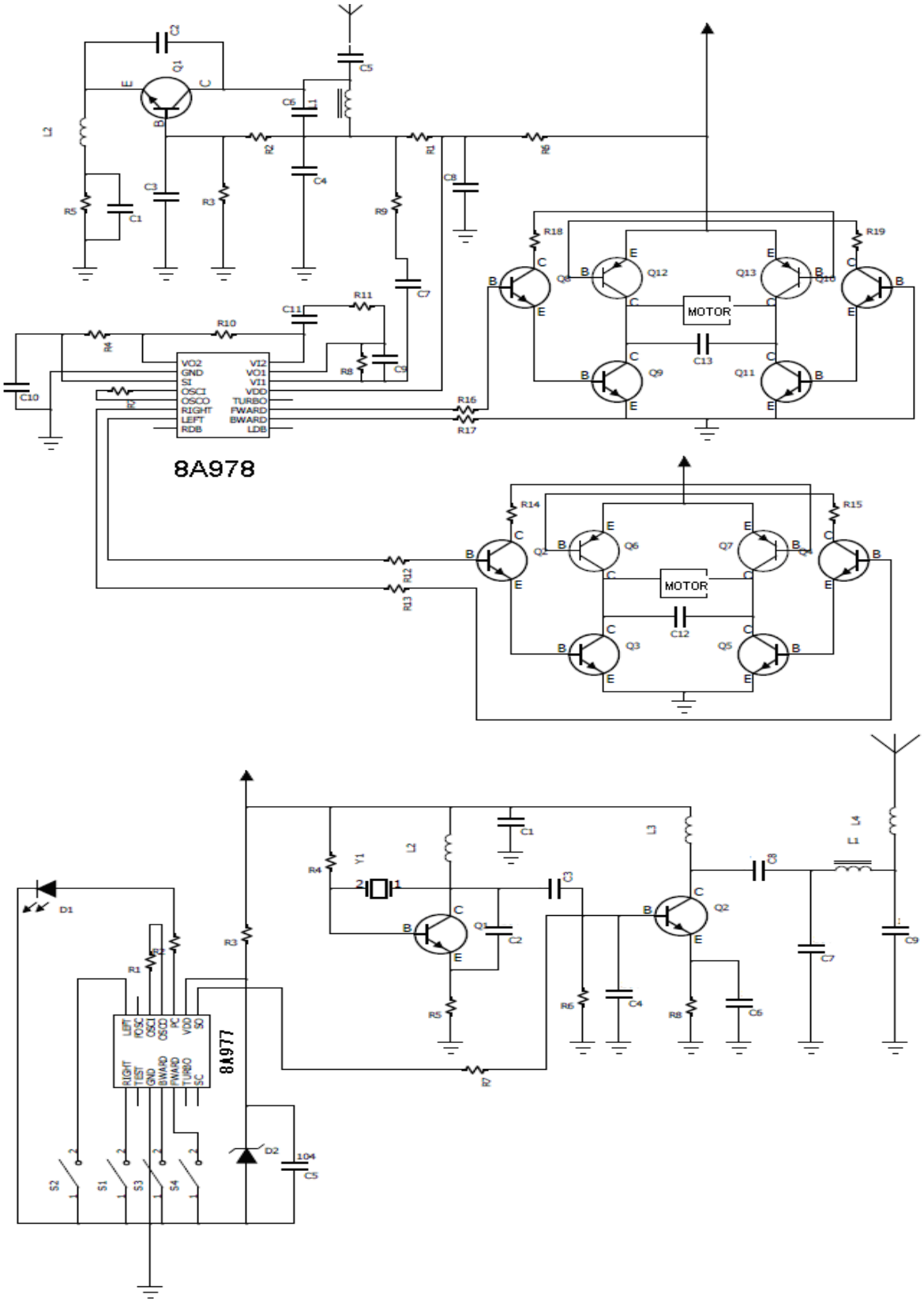
TRANSMITTER



RECEIVER



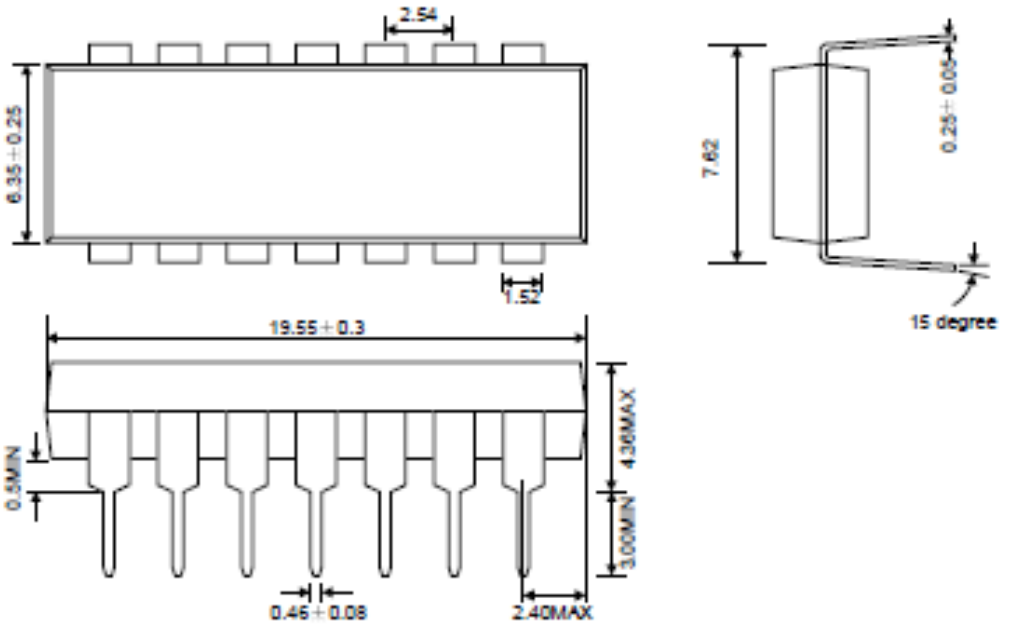
RECOMMENDED APPLICATION CIRCUIT



PACKAGE OUTLINE

8A977\8A978

DIP-14-300-2.54 UNIT: mm



DIP-16-300-2.54 UNIT: mm

