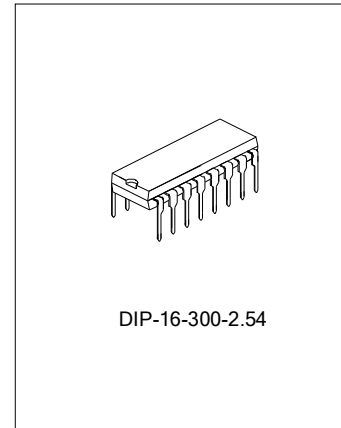


FAN REMOTE CONTROL ENCODER

DESCRIPTION

The SC2268 is a remote control encoder utilizing CMOS Technology specially designed for use with the SC2128. Using a special coding technique, SC2268 increases noise immunity to a very great extent. It is housed in 16-Pins DIP Package and has a maximum of eight input channels. Its high performance features makes SC2268 a must in every fan and other electrical home appliance remote control application.



FEATURES

- * CMOS Technology
- * Low power consumption
- * Very high noise immunity
- * Wide range of operating voltage: $V_{cc}=2.2 \sim 5.0$ Volts
- * Transmits signals to a maximum of 8 channels
- * Start word custom code options available

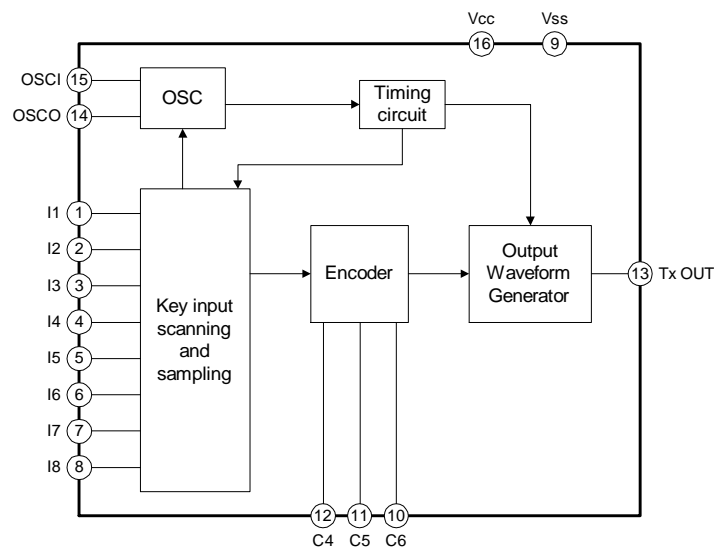
ORDERING INFORMATION

Device	Package
SC2268	Custom code C3=1
SC2268-00	Custom code C3=0

APPLICATIONS

- * Fan remote control
- * Air cleaner
- * Humidifier
- * Heater

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

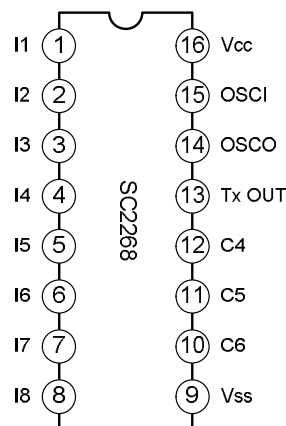
Characteristics	Symbol	Value	Unit
Supply Voltage	VCC	0 ~ 6.0	V
Input/Output Voltage	VIN/VOUT	VSS-0.2V ~ VCC+0.3V	V
Power Dissipation	PD	500	mW
Operating Temperature	Topr	-20 ~ +70	°C
Storage Temperature	Tstg	-55 ~ +125	°C

ELECTRICAL CHARACTERISTICS (Tamb=0 ~ 70°C, VCC-VSS = 3 ± 10%V, Unless otherwise specified)

Characteristics	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Operating Voltage	VCC	--	2.2	3	5	V
Operating Current(note)	IOP	OSC On, TxOUT is floating.	--	0.5	1	mA
Standy-by Current	ISB	I1 ~ I8 = "L" OSC Stops. TxOUT is floating.	0.5	1	3	μA
Sinking Current of TxOUT	ISINK	VOL=2.2V, VDD=3V	8	15	--	mA
		VOL=1.5V, VDD=3V	4	6	--	
Input Voltage of I1 ~I8	High Level	VIH	--	0.7VCC	--	V
	Low level	VIL	--	0	0.3VCC	
Input Pull-Low Resistor	RL	--	30	50	80	kΩ
Input Pull-High Resistor	RH	--	40	90	150	kΩ
Oscillation frequency	fosc	--	--	455	--	kHz

Note: For pins I1 ~ I8: Any one of the said pins is set to HIGH while the others are set to LOW.

PIN CONFIGURATION



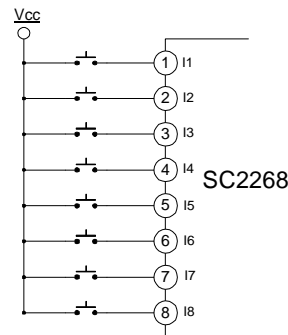
PIN DESCRIPTION

Pin No.	Symbol	Function	
1~8	I1 ~ I8	Key input pins. These pins are used to connect a maximum of 8 keys. (each pin has a built-in pull-low resistor).	
9	Vss	Negative power supply.	
11~12	C4~C5	Select input pin for start word. These pins have internal pull-low resistor.	
10	C6	Select input pin for start word. This pins have internal pull-high resistor.	
13	TxOUT	Transmission output pin. This pin is an open drain (NMOS) output and is used to transmit signals. The carrier frequency is 38kHz.	
15	OSCI	Oscillator Input Pin	These pins are used to externally connect a 455kHz ceramic resonator.
14	OSCO	Oscillator Outpu Pin	
16	Vcc	Positive power supply.	

FUNCTIONAL DESCRIPTION
1. KEY INPUT

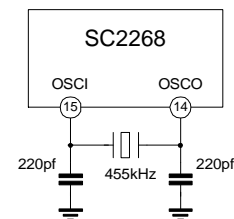
Up to eight keys can be directly connected to pins I1 ~ I8. Please refer to the diagram right.

Furthermore, SC2268 has a built-in pull-low resistor of about 60K ~ 110KΩ which reduces the need for external components.

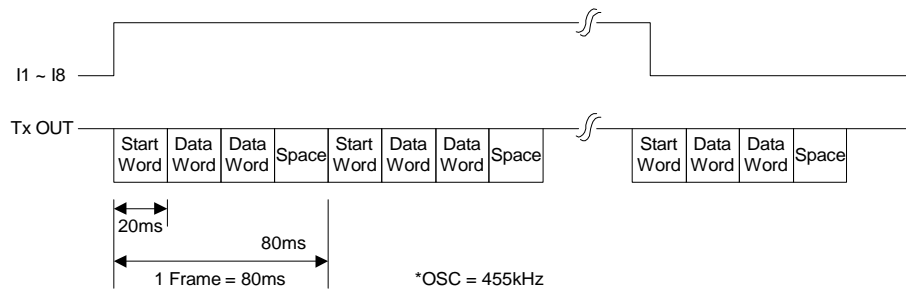

2. OSCILLATOR

An oscillation circuit can be constructed using the CMOS inverter and Built-in Feedback resistor, 455kHz crystal and two 220pf capacitors. The carrier frequency is 38kHz.

Unless any of the 8 keys (I1~I8) is being operated, the oscillation is automatically stopped. Thus, power consumption is considerably reduced.

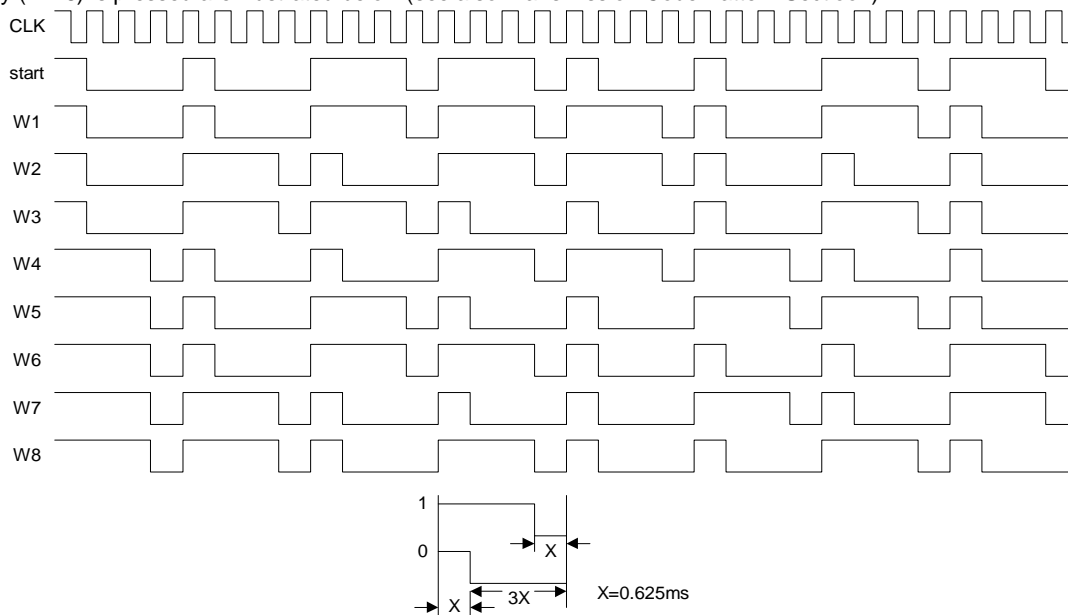

3. TRANSMISSION WAVEFORM

When any of the 8 keys (I1 ~ I8) is set to "High", the TxOUT outputs one start word followed by 2 identical data words and a space. The code will be continuously outputted until the key is released. If for any reason, the key was released during the code transmission process, the code that is being transmitted during the key release action will still be completely outputted. Please refer to the following diagram.



4. TRANSMISSION CODE WAVEFORM

The transmission waveforms of the Start Word and the different Data Words generated when a specific input key (I1~I8) is pressed are illustrated below (see also Transmission Code Pattern Section):



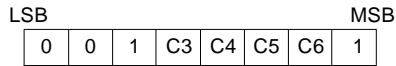
5. TRANSMISSION CODE PATTERN

The transmission code pattern of SC2268 is given in the table below.

	Transmission	LSB								MSB	Receiver
		C0	C1	C2	C3	C4	C5	C6	C7		
Start word		0	0	1	1	0	0	1	1		
		B0	B1	B2	B3	B4	B5	B6	B7		
Data Word (Key pressed)	W1 (I1)	0	0	1	1	1	0	1	0	0/p1	
	W2 (I2)	0	1	0	1	1	0	0	0	0/p2	
	W3 (I3)	0	1	1	0	0	0	1	0	0/p3	
	W4 (I4)	1	0	0	1	1	1	0	0	0/p4	
	W5 (I5)	1	0	1	0	0	1	1	0	0/p5	
	W6 (I6)	1	0	1	1	0	0	0	1	0/p6	
	W7 (I7)	1	1	0	0	0	1	0	1	0/p7	
	W8 (I8)	1	1	0	1	0	0	1	0	0/p8	

6. START WORD CUSTOM CODE

The start word custom code has the following format:



Where: C3 = 1 (default value)

= bonding option available

C4 = "0" when floating or connected to Vss

= "1" when connected to Vcc

C5 = "0" when floating or connected to Vss

= "1" when connected to Vcc

C6 = "0" when connected to Vss

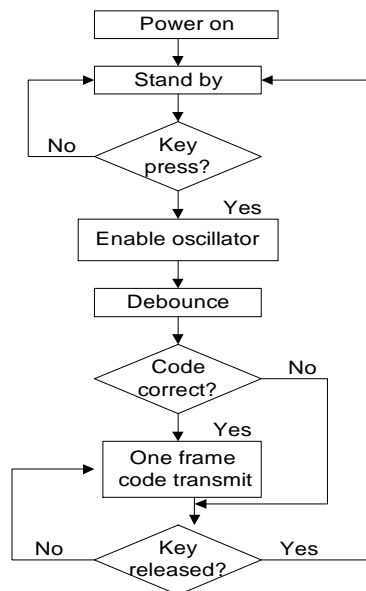
= "1" when floating or connected to Vcc

Note: C4 and C5 have internal pull-low resistors while C6 has an internal pull-high resistor.

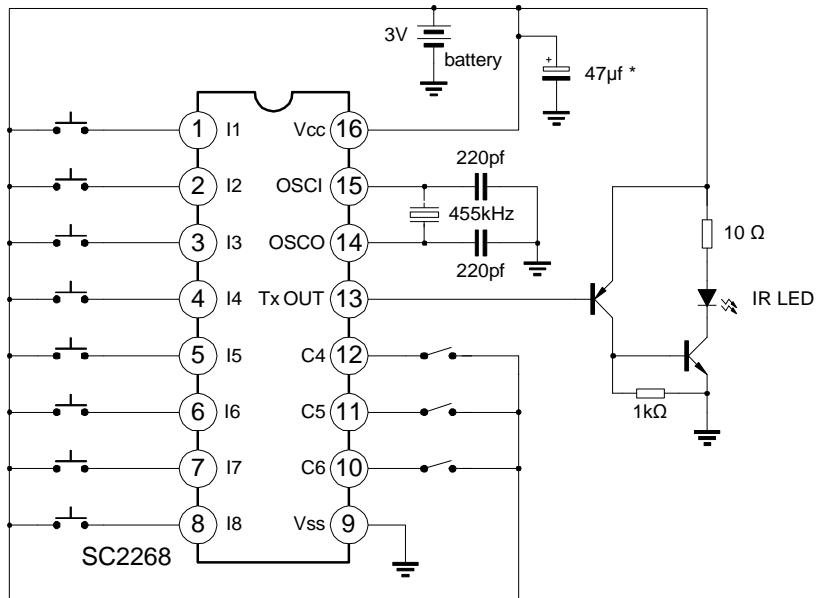
The start word custom code table is given below :

C3=0			C3=1(default)	
C4	C5	C6	Custom Code (C0 to C7)	Custom Code (C0 to C7)
0	0	0	00100001	00110001
0	0	1	00100011	00110011
0	1	0	00100101	00110101
0	1	1	00100111	00110111
1	0	0	00101001	00111001
1	0	1	00101011	00111011
1	1	0	00101101	00111101
1	1	1	00101111	00111111

OPERATION FLOW CHART



APPLICATION CIRCUIT



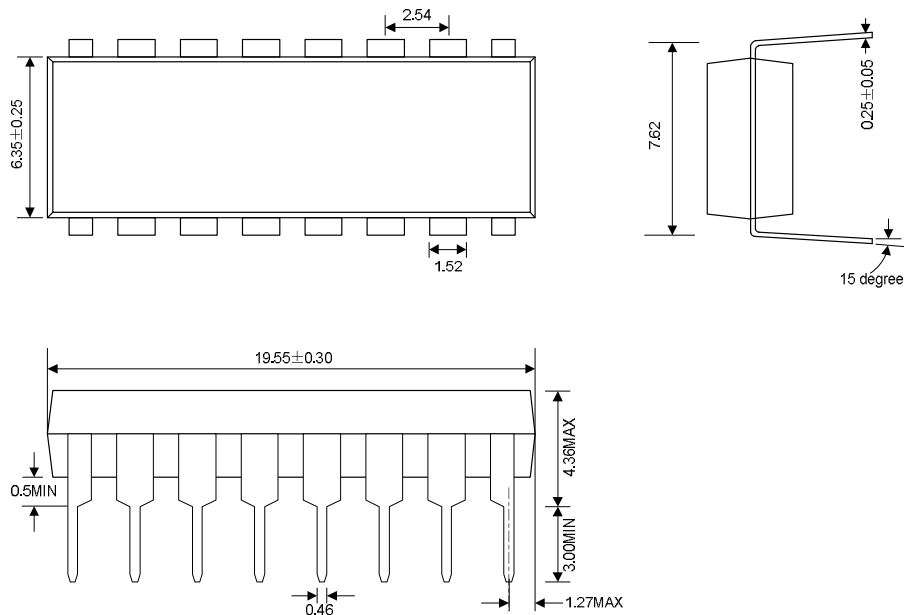
Note: Please take note that C3(default value)=1. For more details, please refer to Start Word Custom Cord Section.

* Place 47uf capacitor as near as possible to the SC2268 Vss pin.

PACKAGE OUTLINE

DIP-16-300-2.54

UNIT: mm



HANDLING MOS DEVICES:

Electrostatic charges can exist in many things. All of our MOS devices are internally protected against electrostatic discharge but they can be damaged if the following precautions are not taken:

- Persons at a work bench should be earthed via a wrist strap.
- Equipment cases should be earthed.
- All tools used during assembly, including soldering tools and solder baths, must be earthed.
- MOS devices should be packed for dispatch in antistatic/conductive containers.