

SUNSTAR

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A. General Description —

The SS0621 is a CMOS LSI designed for light controller. It contains 4 keys and with 4 various function: K1 can change the brightness continuously, it divides the brightness into 256 steps for 60Hz and 304 steps for 50Hz. When K1 is pressed, the step will change continuously, and it will stay at the last step when K1 was released. If the step reach to top (or bottom), the lamp begins to flash and the IC generates "beep" sound, the step will change reversly if K1 is pressed again. K2 is off/step key, it divides the brightness to off, lo, mid and hi 4 steps. When K2 is pressed (after other keys), the load will be turned off, and brightness will change to next step if the user presses it again. K3 is delay turn off key. If it is pressed, the light of lamp will be set on top and after 29.87s it change to bottom for 60Hz, and 28.37s for 50Hz. K4 is auto on/off key, if it is pressed, the on-time will keep 1168s, and then turn off. After 1504s, the lamp turn on and on/off repeat exchange in the time. The option time can be programed from 16s ~ 2032s.

B. Features —

- The operation voltage: 5V
- The zero cross: 110V, 60Hz
- 4 kinds function select:
 - K1: continuous adjusting brightness. (256/304 steps for 60/50Hz)
 - K2: 4 steps key. (off, lo, mid and hi)
 - K3: delay turn-off key.
 - K4: auto on-off key.

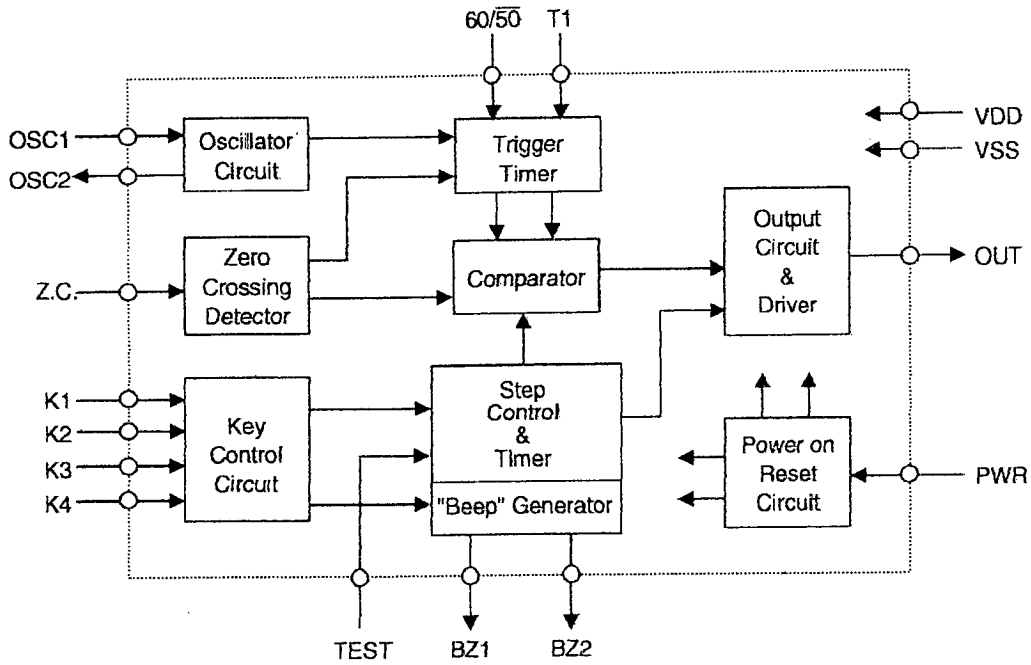
C. Application —

- Dimmer

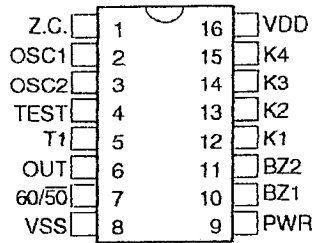
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D. Block Diagram —



E. Pin Assignment —



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F. Pin Description —

(16 pin version)

Pin No	Pin Name	I/O	Description
1	Z.C.	I	Zero cross input pin.
2	OSC1	I	Oscillator input pin.
3	OSC2	O	Oscillator output pin.
4	TEST	I	Operation/test mode.
5	T1	I	For test only.
6	OUT	O	The control signal outpt.
7	60/50	I	60/50Hz select.
8	VSS	—	Ground pin.
9	PWR	I	Power on reset.
10	BZ1	O	Buzzer driver pin.
11	BZ2	O	Buzzer driver pin.
12	K1	I	Key1. (continuous change key)
13	K2	I	Key2. (OFF/step key: off, lo, mid, hi; 4 steps)
14	K3	I	Key3. (delay turn-off key)
15	K4	I	Key4. (ON/OFF flash key)
16	VDD	—	Positive power supply.

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G. Keys Functions —

KEY1: CONTINUOUSLY ADJUST KEY.

Function Frequency	Trigger point		Steps number	Counter clock	Finish time
	Top	Bottom			
60Hz	1242.25 μ s	7278.50 μ s	256	72Hz	3.56s
50Hz	1261.25 μ s	7865.50 μ s	304	80Hz	3.8s

KEY2: 4 STEPS KEY. (OFF, LO, MID, HI; 4 steps)

Frequency Step	60Hz	50Hz
(L)	6526.25 μ s	7199.33 μ s
(M)	4658.25 μ s	5059.75 μ s
(H)	1231.75 μ s	1266.25 μ s

KEY3: DELAY TURN-OFF KEY.

Function Frequency	Counter clock	Finish time
60Hz	8.6Hz	29.87s
50Hz	10.7Hz	28.37s

KEY4: AUTO ON/OFF KEY.

ON-TIME: 1168s

OFF-TIME: 1504s

The option time range 16s ~ 2032s can be programmed.

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H. Absolute Maximum Ratings —

(Ta=25°C)

Parameter	Symbol	Minimum	Maximum	Unit
Supply voltage	V _{DD}	-0.3	5	V
Input voltage	V _I	V _{SS} -0.3	V _{DD} +0.3	V
Storage temperature	T _{STG}	-50	125	°C
Operating temperature	T _{OP}	0	70	°C

I. Electrical Characteristics —

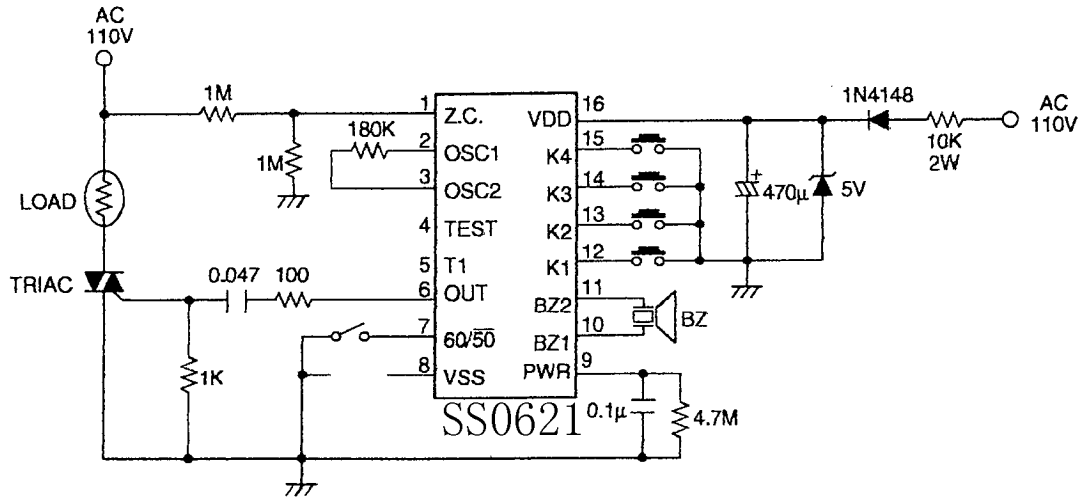
(Ta=25°C)

Symbol	Characteristic	Test Condition		Min.	Typ.	Max.	Unit
		V _{DD}	Condition				
V _{DD}	Operating Voltage	—	—	2.4	3	5.0	V
I _{OP}	Operating Current	5V	No Load.	—	300	800	μA
I _{OH}	OUT Source Current	5V	V _{OH} =3.5V	-1.5	-4.0	—	mA
I _{OL}	OUT Sink Current	5V	V _{OL} =1.5V	20	50	—	mA
I _{sw}	K1-K4 Switch Current	5V	V _{IL} =0V	—	25	100	μA
V _{IH}	"H" Input Voltage	—	—	0.7V _{DD}	—	—	V
V _{IL}	"L" Input Voltage	—	—	—	—	0.3V _{DD}	V
F _{osc}	Oscillator Frequency	—	—	—	180	—	KHz

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J. Application Circuit —



- NOTE: 1. Z.C. is zero cross.
 2. PWR is power on reset.
 3. 60/50 SW : SW=OPEN; for 60Hz.
 SW=VSS; for 50Hz.

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