

SD7015

Triple Tone Melody Generator with Simple Flash Control

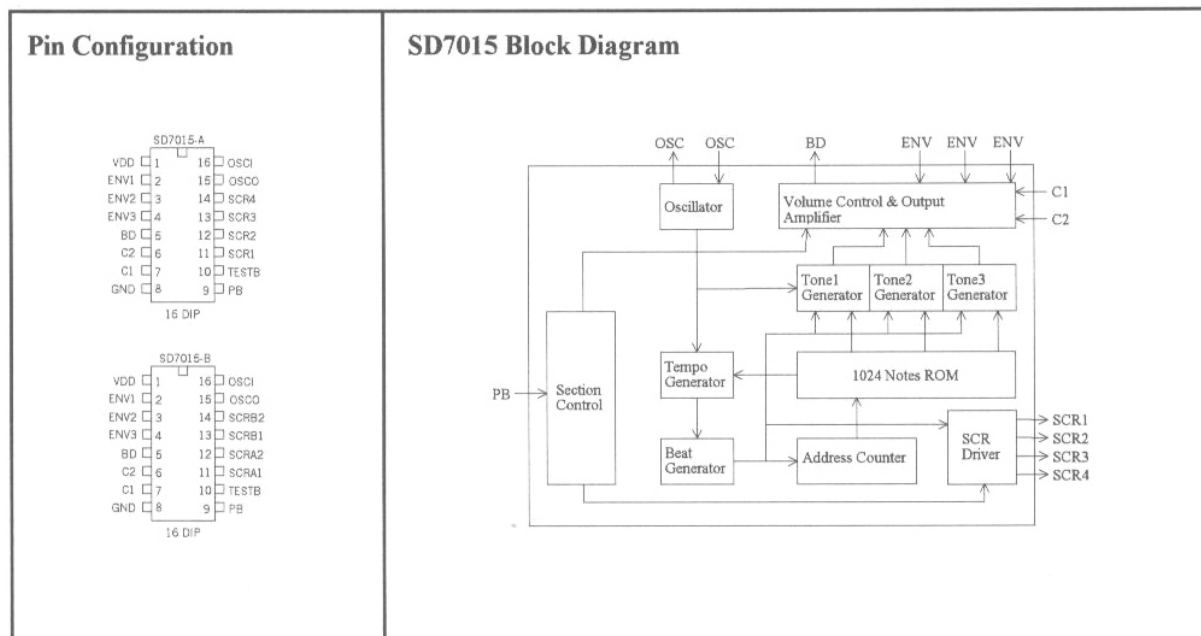
Features

- Operating voltage : 3V to 6V.
- 1024 notes memory.
- 3 kinds of sound generator (piano, vibraphone, drum).
- 3 kinds of flash pattern synchronous with the beats of the main rhythm.
- Volume, lamp test and flash mode controllable.
 Power on : highest volume with normal flash mode.
 Section 1 : medium volume with normal flash mode.
 Section 2 : lowest volume with normal flash mode.
 Section 1 : no volume with normal flash mode.
 Section 1 : no volume with all lamp brightness test.
 All sections is cyclically activated by push button.
- 4 lamps string or 2 lamps string by bonding option.
- RC envelop for high quality sound.
- Drive 4 SCR/LED directly.

General Description

SD7015 is a high quality triple tone generator with simple flash control using minimum external application circuits. Five kinds of volume and flash mode control is available. Only minimum external components are needed. This allows for the production of low cost, high quality flash control box. Two types of SD7015 provide the 4 lamps string or 2 lamps string selection in application.

Type	Lamp Flash Pattern	GND Option	Note
SD7015-A (4 lamps)	(1, 2) → (2, 3) → (3, 4) → (4, 1) cycling	F	3 kind of patterns are available, different songs can use different patterns.
	(1) → (2) → (3) → (4) cycling		
	(1, 3) → (2, 4) cycling		
SD7015-B (2 lamps)	(A1) → (A2) cycling	GND	2 sets of 2 lamps string driver are output
	(B1) → (B2) cycling		



Pin Description

Pin No.	Symbol	Description
1	VDD	Positive power supply.
2	ENV1	RC envelop input.
3	ENV2	RC envelop input.
4	ENV3	RC envelop input.
5	BD	Sound output.
6	C2	Modulated tone signal input.
7	C1	Modulated tone signal output.
8	GND	Negative power supply.
9	PB	Section change trigger pin.
10	TESTB	Test pin.
11	SCR1	SCR1 driver pin.
12	SCR2	SCR2 driver pin.
13	SCR3	SCR3 driver pin.
14	SCR4	SCR4 driver pin.
15	OSCO	Oscillator output.
16	OSCI	Oscillator input.

Absolute Maximum Ratings

RATING	VALUE
DC Supply Voltage	< 6.5V
Input/Output Voltage	GND-0.5V to VDD+0.5V
Operating Temperature	-10° C to 60° C
Storage Temperature	-25° C to 125° C

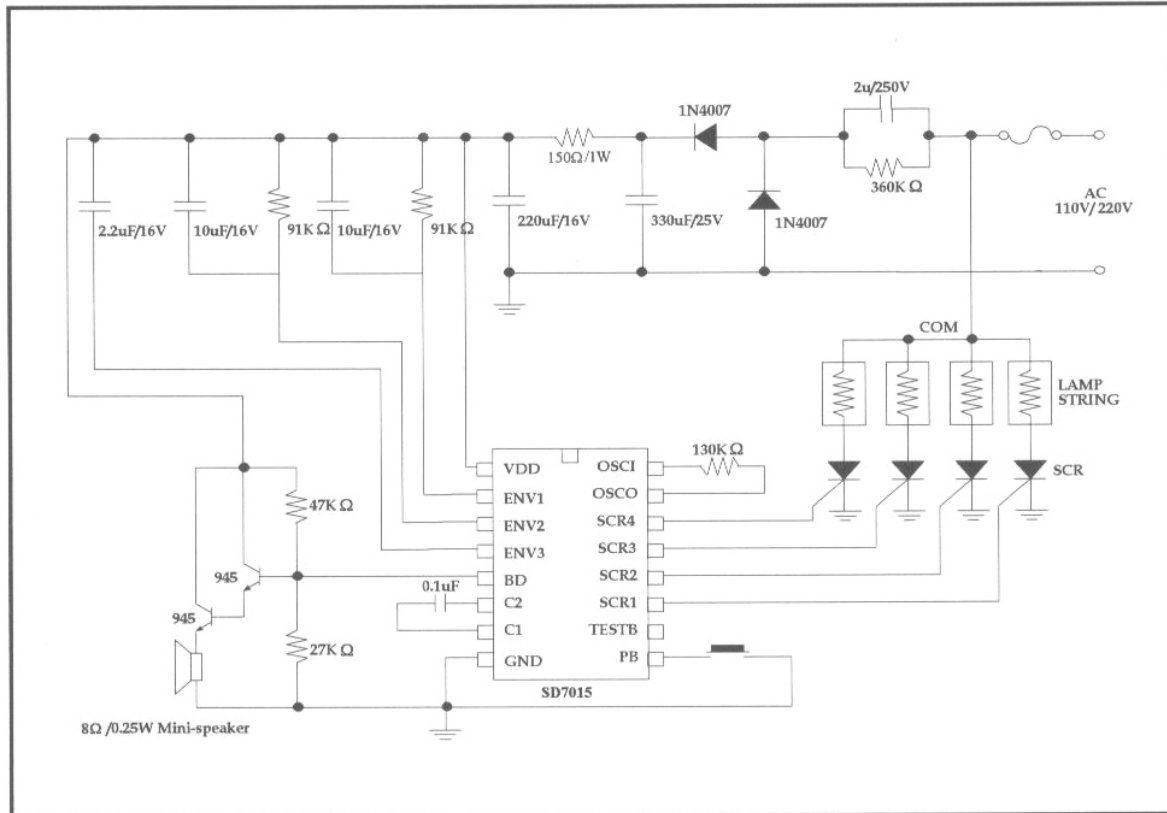
Notice: Stress greater than those listed under **Absolute Maximum Ratings** may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended period may affect reliability.

Electrical Characteristics

(VDD = 5.0V, GND = 0V, Ta = 25°C, unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Condition
Operating Voltage	Vdd	3.0V	5.0V	6.0V	
Operating Current	Iop	---	300μA	800μA	No load
SCR1 ~ SCR4 Current (Drive)	Iscrd	---	300μA	---	
SCR1 ~ SCR4 Current (Sink)	Iscrs	---	200μA	---	
BD Current (Drive)	Idrv	---	100μA	---	
BD Current (Sink)	Isink	---	200μA	---	

Application Circuit



Bonding Diagram

Pad No.	Pad Name	X	Y
1	VDD	1187.6	104.0
2	ENV1	1391.1	676.6
3	ENV2	1391.1	1131.0
4	ENV3	1391.1	1300.4
5	BD	1374.2	1725.1
6	C2	1064.6	1727.8
7	C1	808.2	1737.8
8	GNDA	643.0	1737.8 (SD7015-A)
	GNDB	493.0	1737.8 (SD7015-B)
9	PB	340.6	1737.8
10	TESTB	122.0	1737.8
11	SCR1	136.8	916.9
12	SCR2	136.8	664.7
13	SCR3	136.8	417.5
14	SCR4	136.8	165.3
15	OSCO	452.2	104.0
16	OSCI	767.6	104.0

Unit: µ m
Notes: Substrate is connected to GND



Song Lists

7015-01

1. The First Noel
2. Jingle Bells
3. Deck The Halls
4. Silent Night
5. Away In A Manger
6. Joy To The World
7. We Wish You A Merry Christmas
8. O Christmas Tree