

SIMPLE MELODY GENERATOR

BT8028-XX

FEATURES	FUNCTIONS	
<ul style="list-style-type: none"> <li>• 127-note ROM memory</li> <li>• 1.3V to 3.3V power supply and low power consumption</li> <li>• RC oscillator on chip</li> <li>• One shot or level hold mode</li> <li>• Sound range: 4 octaves, 2 series</li> <li>• Tempo: 16 kinds (presto-largo)</li> <li>• Direct piezo drive</li> </ul>	<ul style="list-style-type: none"> <li>• Solution of automatic stop or repeat of the melody</li> <li>• Dynamic speaker can be driven with external NPN transistor</li> <li>• Two or three times repeat of melody (mask option)</li> <li>• Each note can be individually programmed to be staccato or legato (mask option)</li> <li>• Changing the contents of melody is possible by reprogramming the maskable ROM</li> <li>• Power on reset; melody begins from the first note</li> <li>• Start from the head of melody</li> <li>• Bare chip or TO-92 are available</li> </ul>	<p>The diagram shows a TO-92 package for the BT8028C-XXL(S) chip. It has three pins extending downwards, labeled from left to right as Vss, Vcc, and OUT. The chip itself is a small rectangular component with a dome-shaped top.</p>

DESCRIPTION

The BT8028 is a CMOS LSI chip which electronically plays a prearranged melody. Selection of melody start signal is possible by mask option: orders specification suffix "L" indicate Level Hold Mode, and suffix "S" indicate One Shot Mode. The Universal version (as One Shot or Level Hold Mode) is possible also (suffix "U").

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

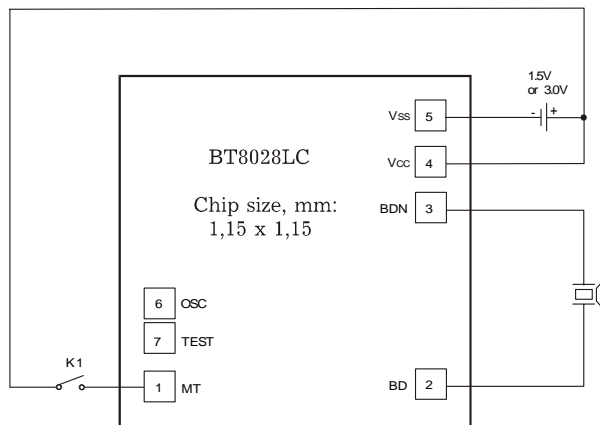
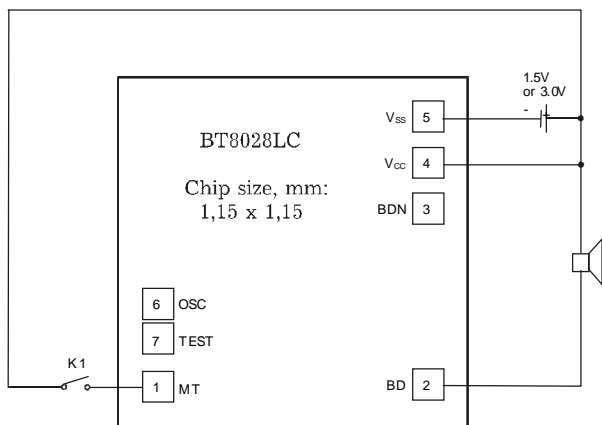
Characteristic	Symbol	Value	Unit
DC Supply Voltage	$V_{CC} - V_{SS}$	-0.3 ~ 3.5	V
Input Voltage	$V_{IN}$	$V_{SS} - 0.3 \sim V_{CC} - 0.3$	V
Operating Temperature	$T_{opr}$	-20 ~ +65	°C
Storage Temperature	$T_{stg}$	-55 ~ +125	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C, Vcc = 1.5V ; unless otherwise specified)

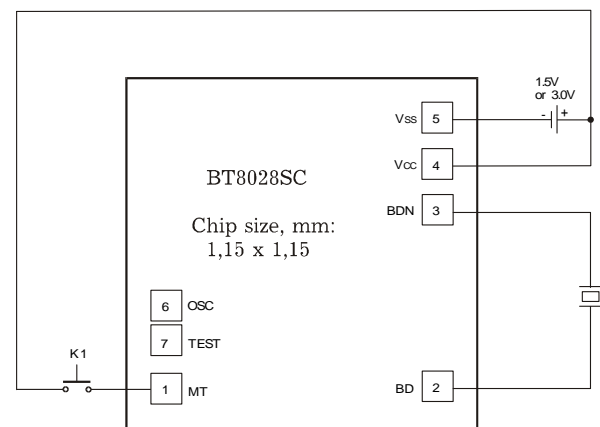
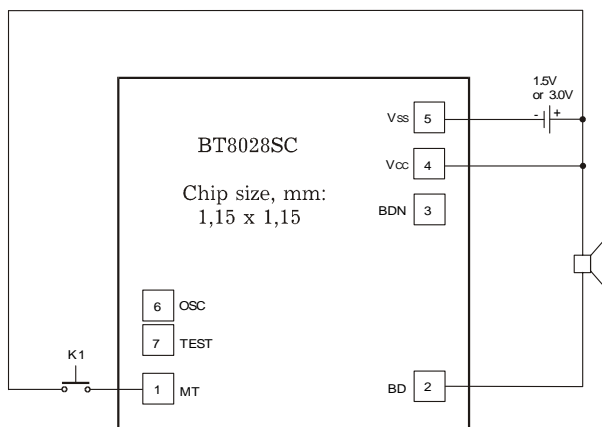
Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Operating Voltage	$V_{CC}$		1.3	1.5	3.3	V
Supply Current	Stand-by	$I_S$		0.1	1	$\mu A$
Output Drive Current	$I_{OH}$	$V_{CC} = 1.3V, V_O = 0.8V$	0.6	1.5		mA
Output Sink Current	$I_{OL}$	$V_{CC} = 1.3V, V_O = 0.5V$	0.6	1.5		mA
Frequency Stability	$\Delta F/F$	$F_{osc}(1.6V) - F_{osc}(1.3V)$			12	%
		$F_{osc}(1.3V)$				

APPLICATION CIRCUITS

LEVEL HOLD



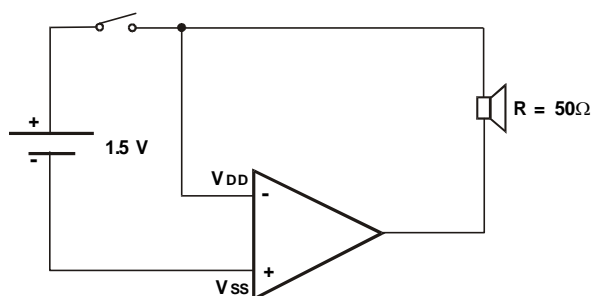
ONE SHOT



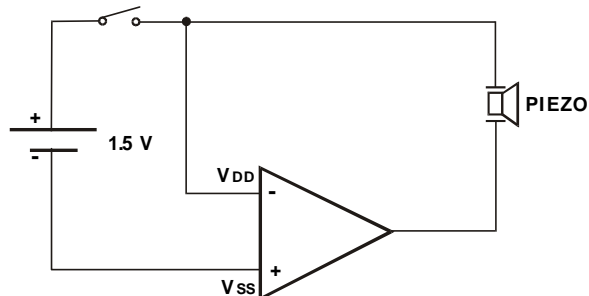
TO-92 ONE SHOT OR LEVEL HOLD MODE

CHIP FORM

## FOR SPEAKER



## FOR PIEZO

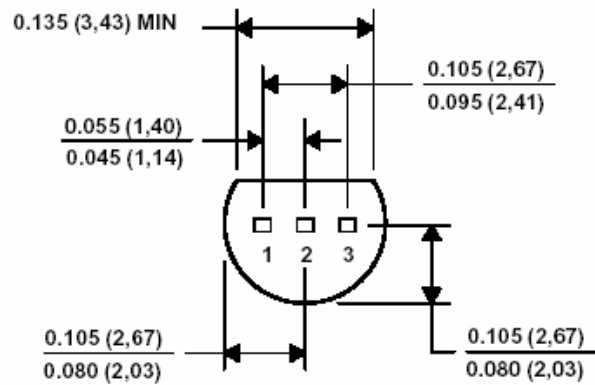
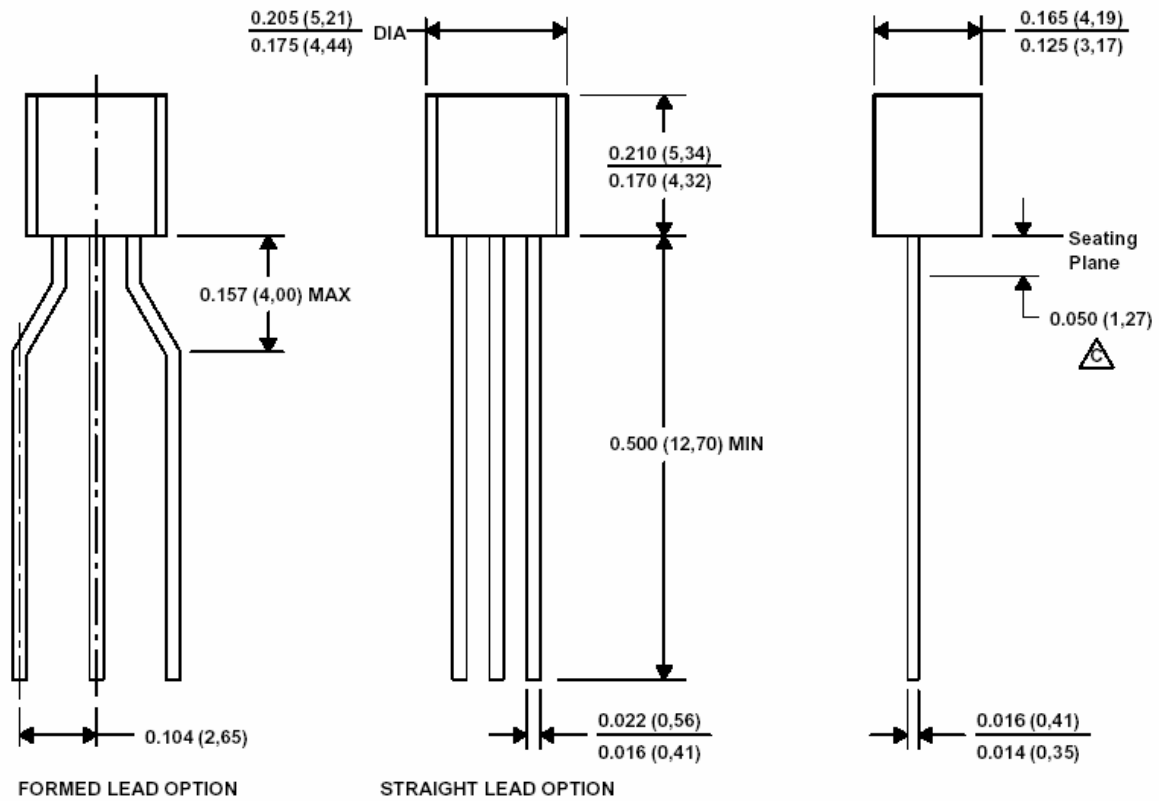


## AVAILABLE SONG LIST

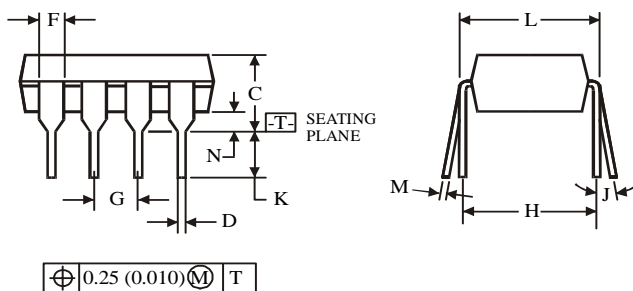
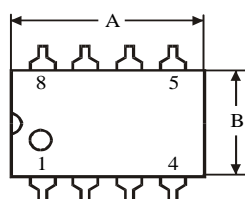
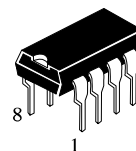
	NEW EXT №	SONG LIST	SEC
1	BT8028C-001	For Elise	13
2	BT8028C-002	Staff WRK	20
3	BT8028C-003	Happy Birthday	13
4	BT8028C-004	Jingle Bell	12
5	BT8028C-005	It's Small World	21
6	BT8028C-006	3 Children Song	13
7	BT8028C-007	Cuocoo Waltz	10
8	BT8028C-008	London Bridge is Falling Down	16
9	BT8028C-009	Trains Running Fast	11
10	BT8028C-010	Love Me Tender Love Me True	38
11	BT8028C-011	Love Story	23
12	BT8028C-012	Old McDonald Had a Farm	25
13	BT8028C-013	Jingle Bell (Santa Claus Is Coming to Town)	28
14	BT8028C-014	You are My Sunshine	12
15	BT8028C-015	Santa Claus is Coming To Town	20
16	BT8028C-016	Silent Night	26
17	BT8028C-017	Twinkle Twinkle Little Star	14
18	BT8028C-018	Korean melody	29
19	BT8028C-019	Phone ringer	3
20	BT8028C-020	Three Little Pigs	18
21	BT8028C-021	MNA	38
22	BT8028C-022	NOV24 (Cuckoo Waltz)	20
23	BT8028C-023	Home Sweet Home	39

	NEW EXT №	SONG LIST	SEC
24	BT8028C-024	Cuckoo Waltz 2	18
26	BT8028C-026	AZ1	44
27	BT8028C-027	Seven forty	28
28	BT8028C-028	AZ3	24
29	BT8028C-029	AZ4	26
30	BT8028C-030	IR1	34
31	BT8028C-031	Gimn Petersburg	53
32	BT8028C-032	Hymn of Russia	55
33	BT8028C-033	My Moscow	27
34	BT8028C-034	Home Sweet Home (Ver2, Shot)	32
35	BT8028C-035	Sound generator + Led driver	2 Hz
36	BT8028C-036	Varvara	19
43	BT8028C-043	Alexandra	45
44	BT8028C-044	IR2	27
45	BT8028C-045	For Elise 2	15
46	BT8028C-046	God Bless America	48
49	BT8028C-049	Gimn USA	64
50	BT8028C-050	Reg Time	20
51	BT8028C-051	It's Small World 2	21
52	BT8028C-052	AZ4-2	21
53	BT8028C-053	Car Alarm	10
57	BT8028C-057	Sound generator + Led driver	4 Hz
59	BT8028C-059	Day dream (Shuman)	67
60	BT8028C-060	Victory day	44
62	BT8028C-062	Oh! fighting Korea	34
63	BT8028C-063	Champion	24
64	BT8028C-064	March	32
67	BT8028C-067	Air Tale	20
70	BT8028C-070	Hymn of Ukraine	55
71	BT8028C-071	Metal	67
72	BT8028C-072	Pong	

• TO-92



N SUFFIX PLASTIC DIP  
(MS - 001BA)



Symbol	Dimension, mm	
	MIN	MAX
A	8.51	10.16
B	6.1	7.11
C		5.33
D	0.36	0.56
F	1.14	1.78
G	2.54	
H	7.62	
J	0°	10°
K	2.92	3.81
L	7.62	8.26
M	0.2	0.36
N	0.38	

NOTES:

- Dimensions "A", "B" do not include mold flash or protrusions.  
Maximum mold flash or protrusions 0.25 mm (0.010) per side.