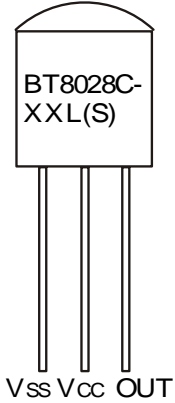


**SIMPLE MELODY GENERATOR**

**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 style="text-align: center;">BT8028C-XXL(S)</p> <p style="text-align: center;">VSS VCC OUT</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)**

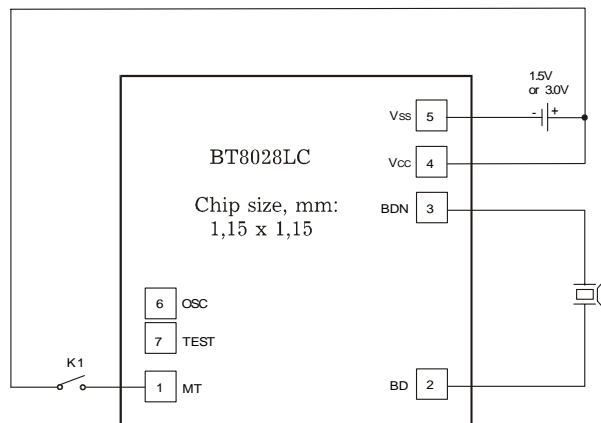
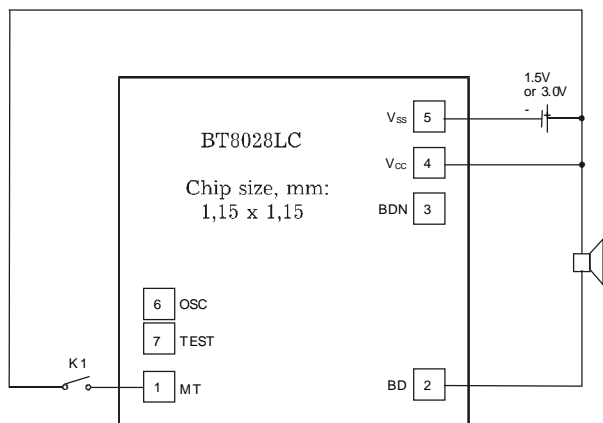
Characteristic	Symbol	Value	Unit
DC Supply Voltage	$V_{CC} - V_{SS}$	-0.3 ~ 3.5	V
Input Voltage	$V_{IN}$	$V_{SS} - 0.3 \sim V_{CC} - 0.3$	V
Operating Temperature	$T_{opr}$	-20 ~ +65	°C
Storage Temperature	$T_{stg}$	-55 ~ +125	°C

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

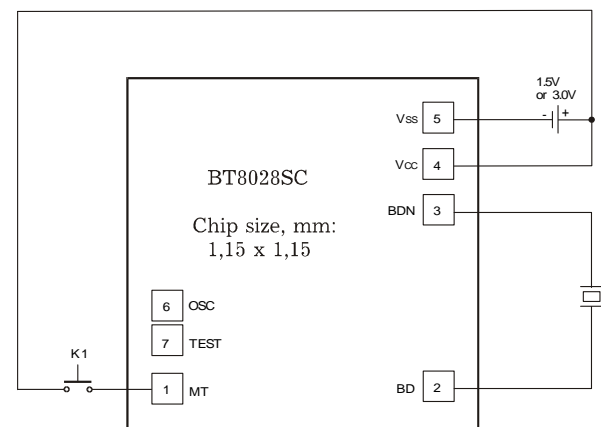
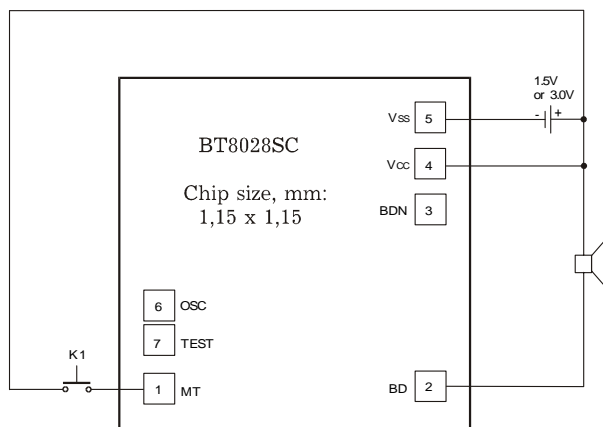
Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Operating Voltage	$V_{CC}$		1.3	1.5	3.3	V
Supply Current	Stand-by	$I_S$		0.1	1	$\mu A$
Output Drive Current	$I_{OH}$	$V_{CC} = 1.3V, V_O = 0.8V$	0.6	1.5		mA
Output Sink Current	$I_{OL}$	$V_{CC} = 1.3V, V_O = 0.5V$	0.6	1.5		mA
Frequency Stability	$\Delta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

APPLICATION CIRCUITS

LEVEL HOLD



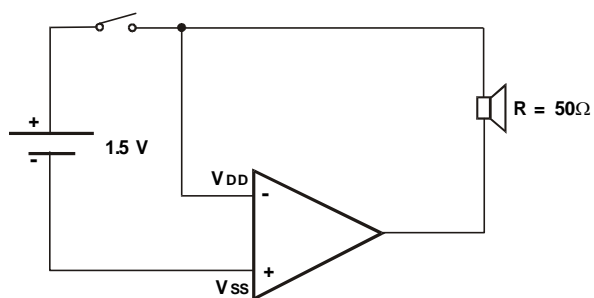
ONE SHOT



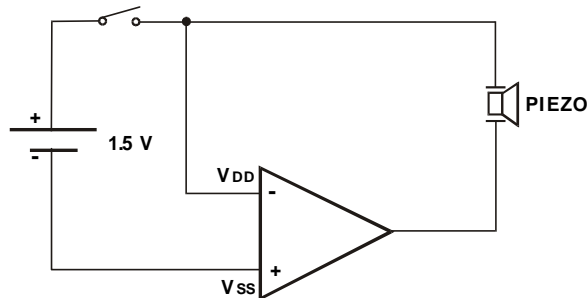
TO-92 ONE SHOT OR LEVEL HOLD MODE

CHIP FORM

**FOR SPEAKER**



**FOR PIEZO**

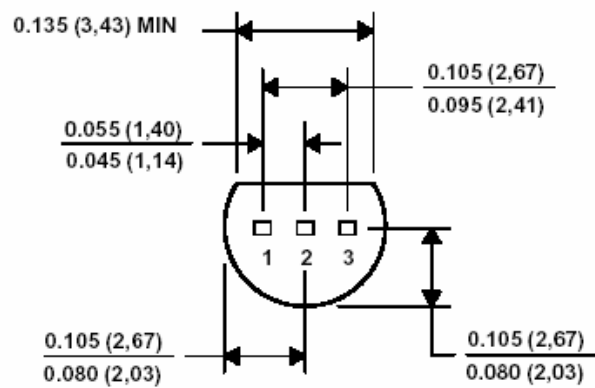
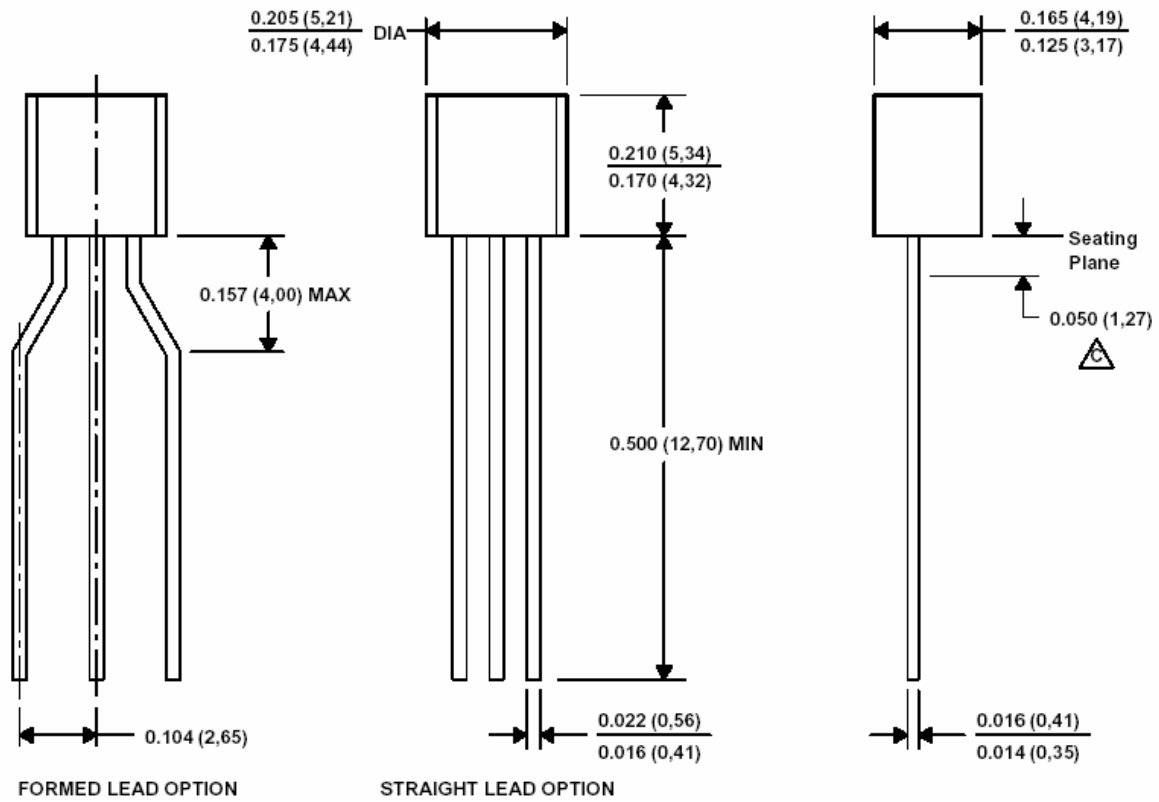


**AVAILABLE SONG LIST**

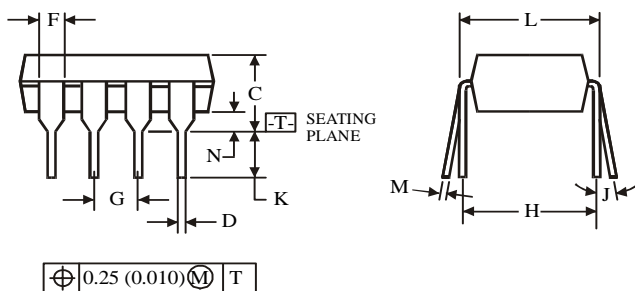
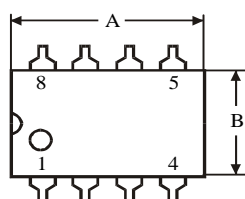
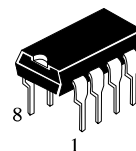
	<b>NEW EXT №</b>	<b>SONG LIST</b>	<b>SEC</b>
1	BT8028C-001	For Elise	13
2	BT8028C-002	Staff WRK	20
3	BT8028C-003	Happy Birthday	13
4	BT8028C-004	Jingle Bell	12
5	BT8028C-005	It's Small World	21
6	BT8028C-006	3 Children Song	13
7	BT8028C-007	Cuocoo Waltz	10
8	BT8028C-008	London Bridge is Falling Down	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.