

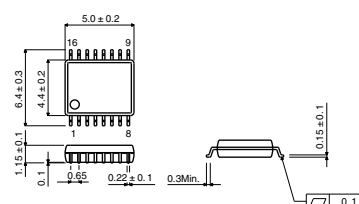
## Tone generator LSI for cellular phones

# BU8766FV

### ●Description

The BU8766FV is a tone generator IC for producing a triple chord that has both a RAM and sequencer to reduce the load of CPU soft. Cellular phones can give a musical performance by down-loading melody data from the C-MIDI format. This IC corresponds to three master clocks and has an adjustment function for a parameter needed to generate a chord. Waveform parameter can be selected from sine wave and special square wave.

### ●Dimension ( Units : mm )



SSOP-B16

### ●Features

- 1) Triple chord can be generated by control from CPU.
- 2) CPU soft load can be decreased by incorporating RAM and sequencer.
- 3) RAM 1kByte as a buffer for download data.
- 4) Can adjust parameter needed to generate a chord.
- 5) DTMF generating function
- 6) Can select a wave parameter for generating sound. (sine wave/special square wave)
- 7) Control from CPU by serial data

### ●Applications

Cellular phones with a function to register melody at receiving the call

#### Absolute Maximum Ratings ( Ta=25°C )

Parameter	Symbol	Limits	Unit
Power supply voltage	VDD	- 0.3 ~ + 4.5	V
Power dissipation	Pd	450 *	mW
Operating temperature range	Topr	- 40 ~ + 85	°C
Storage temperature range	Tstg	- 50 ~ + 125	°C

\* Derating : 4.5mW / °C for operation above Ta=25°C

#### Recommended Operating Conditions ( Ta=25°C )

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply voltage	VDD	2.2	2.5	3.6	V

Electrical characteristics ( Unless otherwise noted: Ta=25°C )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions		
< Digital DC characteristics >								
High level input voltage	V <sub>IH</sub>	0.7V <sub>DD</sub>	-	-	V			
Low level input voltage	V <sub>IL</sub>	-	-	0.3V <sub>DD</sub>	V			
High level input current	I <sub>IH</sub>	-	-	10	μ A	V <sub>IH</sub> =V <sub>DD</sub>		
Low level input current	I <sub>IL</sub>	- 10	-	-	μ A	V <sub>IH</sub> =GND		
High level output voltage	V <sub>OH</sub>	V <sub>DD</sub> - 0.3	-	-	V	I <sub>OH</sub> =- 0.8mA		
Low level output voltage	V <sub>OL</sub>	-	-	GND+ 0.3	V	I <sub>OL</sub> =0.8mA		
< Analog DC characteristics >								
VREF pin voltage	V <sub>AGND</sub>	0.475V <sub>DD</sub>	0.5V <sub>DD</sub>	0.525V <sub>DD</sub>	V	I <sub>OUT</sub> =0A( No load)		
ANOUT pin voltage	V <sub>OUT</sub>	0.47V <sub>DD</sub>	0.5V <sub>DD</sub>	0.53V <sub>DD</sub>	V	I <sub>OUT</sub> =0A( No load)		
< Whole characteristics( V <sub>DD</sub> =2.5V) >								
Circuit current	IDD1	-	-	1	μ A	RESET=L	Other inputs=L	No load
	IDD2	-	1500	2200	μ A	RESET=H	MCLK=2.688MHz	
	IDD3	-	1700	2500	μ A	Other	MCLK=3.25MHz	
	IDD4	-	2500	3400	μ A	inputs=L	MCLK=4.92MHz	
VREF pin rise time	t <sub>RVR</sub>	-	25	40	nS	At C <sub>VREF</sub> =1μ F, RESET=L H		

Block Diagram

