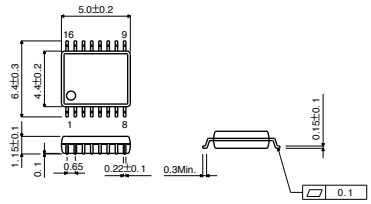
Tone generator LSI for cellular phones

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

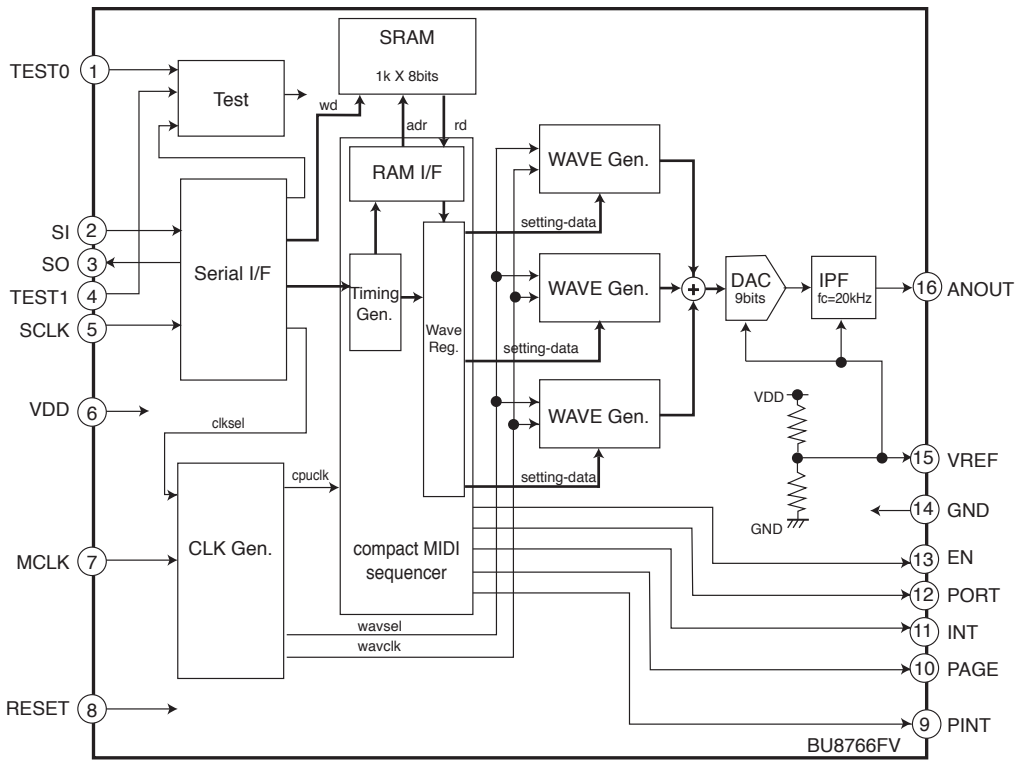
● Recommended Operating Conditions (Ta=25˚C)

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	VIH	0.7VDD	—	—	V			
Low level input voltage	VIL	—	—	0.3VDD	V			
High level input current	IIH	—	—	10	µA	VIH=VDD		
Low level input current	IIL	—10	—	—	µA	VIH=GND		
High level output voltage	VOH	VDD—0.3	—	—	V	IOH=–0.8mA		
Low level output voltage	VOL	—	—	GND+0.3	V	IOL=0.8mA		
<Analog DC characteristics>								
VREF pin voltage	VAGND	0.475VDD	0.5VDD	0.525VDD	V	IOUT=0A (No load)		
ANOUT pin voltage	VOUT	0.47VDD	0.5VDD	0.53VDD	V	IOUT=0A (No load)		
<Whole characteristics (VDD=2.5V)>								
Circuit current	IDD1	—	—	1	µA	RESET=L	Other inputs=L	No load
	IDD2	—	1500	2200	µA	RESET=H	MCLK=2.688MHz	
	IDD3	—	1700	2500	µA	Other	MCLK=3.25MHz	
	IDD4	—	2500	3400	µA	inputs=L	MCLK=4.92MHz	
VREF pin rise time	tRVR	—	25	40	mS	At CVREF=1µF, RESET=L→H		

● Block Diagram



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