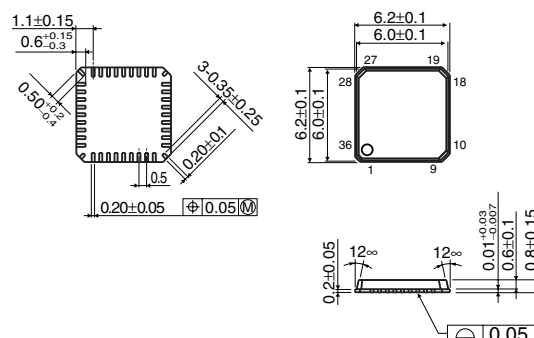


Melody Sound Source LSI for Cellular Phone **BU8788KN**

● Description

BU8788KN is a melody sound source LSI for cellular phones. This LSI generates 32 polyphonic tones simultaneously and is capable of generating user's own sounds by an ADPCM decoder. A total of 207 tones (128 tones + 47 drums + 32 effect sounds) can be generated. FIFO and Sequencer for playing are incorporated. The sequencer itself can control the timing and play the music by sending the melody data to FIFO.

● Dimension (Unit : mm)



QFN36V

● Features

- 1) PCM sound source
- 2) 32 harmonies generator available at the same time
128 sounds+drum set 47 sounds generation
- 3) ADPCM decode functions are mounted, and mixing with sounds is possible.
- 4) FIFO buffer and sequencer are used to reduce CPU load
- 5) PitchBend and vibrato available
- 6) Integrated stereo sound DAC
- 7) CPU control through serial and parallel I/F

● Applications

Sound source for cellular phones and portable appliances

● Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage range	V _{DD}	-0.3 ~ +4.5	V
Power dissipation	P _d	450 *	mW
Operating temperature range	T _{opr}	-40 ~ +85	°C
Storage temperature range	T _{stg}	-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
Supply voltage range	V _{DD}	2.7	3.0	3.6	V

● Electrical characteristics (Unless otherwise noted; Ta=25°C, Vcc=3.0V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Clock input frequency	FMCLK	12	—	20	MHz	Scale precision is within 0.2%
ANOUT pin load resistance	ZAN	50	—	—	kΩ	After DC Coupling
VREF pin rise time	TRVR	—	70	100	ms	After releasing RESET when CVREF=1μF
PLL pin rise time	TRPLL	—	—	10	ms	After releasing RESET or STANDBY mode (When C=4.7nF between PLL-FILTER pin and GND)
ANOUT amplitude	V _{MAX}	—	0.667V _{DD}	—	V _{P-P}	Theoretical value of dynamic range
Analog operating current consumption	I _{DDA}	—	1	2	mA	Playing mode
Digital operating current consumption	I _{DDD}	—	33	50	mA	Playing mode
Analog static current	I _{stA}	—	—	5	μA	Standby mode
Digital static current	I _{stD}	—	—	5	μA	Standby mode

● Block Diagram

