AMERICAN MICROSYSTEMS, INC

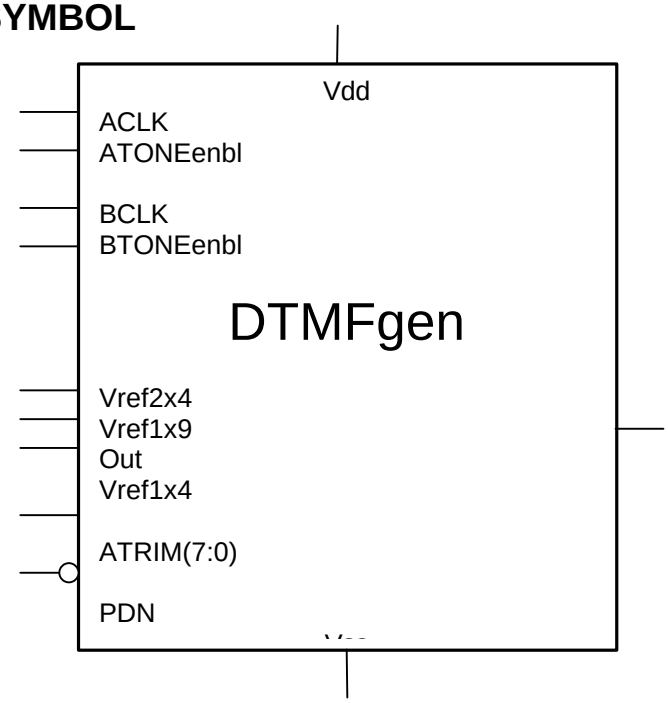
DTMFgen

June, 1998 Preliminary

AMI 0.8 micron CMOS
CWL Double Poly

DTMFgen

SYMBOL



FEATURES

- Power down Mode
- Each of the two sine waves are controlled independently
- Output amplitude is programmable to a resolution of 8 bits.

DESCRIPTION

Dual tone Multi frequency (DTMF) signaling generator. Each of the two sine waves, which are controlled independently, are summed together and presented to the output. Sine B is always 80% of the amplitude of sine A, even though the amplitude of the output is programmable with 8 bits.

PIN DESCRIPTION

MAME	TYPE	DESCRIPTION
ACLK	Digital Input	Sine A clock, 64 times the sine freq, ~50% duty
BCLK	Digital Input	Sine B clock, 64 times the sine freq, ~50% duty
ATONEenbl	Digital Input	Enables Sine A, Active high
BTONEenbl	Digital Input	Enables Sine B, Active high
ATRIM(7:0)	Digital Bus Input	8 bit programmable amplitude inputs
PDN	Digital Input	Powers down the cell, Active low
Vref2x4	Analog Input	Voltage reference of 2.4 V
Vref1x9	Analog Input	Voltage reference of 1.9 V
Vref1x4	Analog Input	Voltage reference of 1.4 V
OUT	Analog Output	Dual Tone output
Vdd	Power	Positive supply pin
Vss	Ground	Negative supply pin

AC ELECTRICAL CHARACTERISTICS

PARAMETER	CONDITION	MIN	TYP	MAX	UNIT
Supply Voltage Range		4.5		5.5	V
Supply Current			1.75	3.5	mA
Temperature		-10		70	°C
Frequency Range		0.5		3.0	KHz
Single Sine Wave Output Amplitude	8 bit Programmable Amplitude	0.180V peak 0.127V RMS		0.504V peak 0.356V RMS	
Amplitude Error Across Frequency Range		-0.25 dB (-3%)		+0.25 dB (+3%)	
Total Harmonic Distortion	Single Sine Wave			-29	dB
Resistive Output Load		10			kohm
Capacitive Output Load				50	Pf