



Integrated
Circuit
Systems, Inc.

AV9155C-44

Low Cost 20-Pin Frequency Generator

General Description

The AV9155C-44 is a low cost frequency generator designed specifically for desktop and notebook PC applications with either 3.3V or 5.0V power supply voltage. Its CPU clocks provide all necessary CPU frequencies for 286, 386 and 486 systems, including support for the latest speeds of processors. The device uses a 14.318 MHz crystal to generate the CPU and all peripheral clocks for integrated desktop motherboards.

The dual 14.318 MHz clock outputs allows one output for the system and one to be the input to an ICS graphics frequency generator such as the AV9194.

The CPU clock offers the unique feature of smooth, glitch-free transitions from one frequency to the next, making this ideal device to use whenever slowing the CPU speed. The AV9155C-44 makes a gradual transition between frequencies, so that it obeys the Intel cycle-to-cycle timing specification for 486 systems. The simultaneous 2X and 1X CPU clocks offer controlled skew to within 1.5ns (max) of each other.

Features

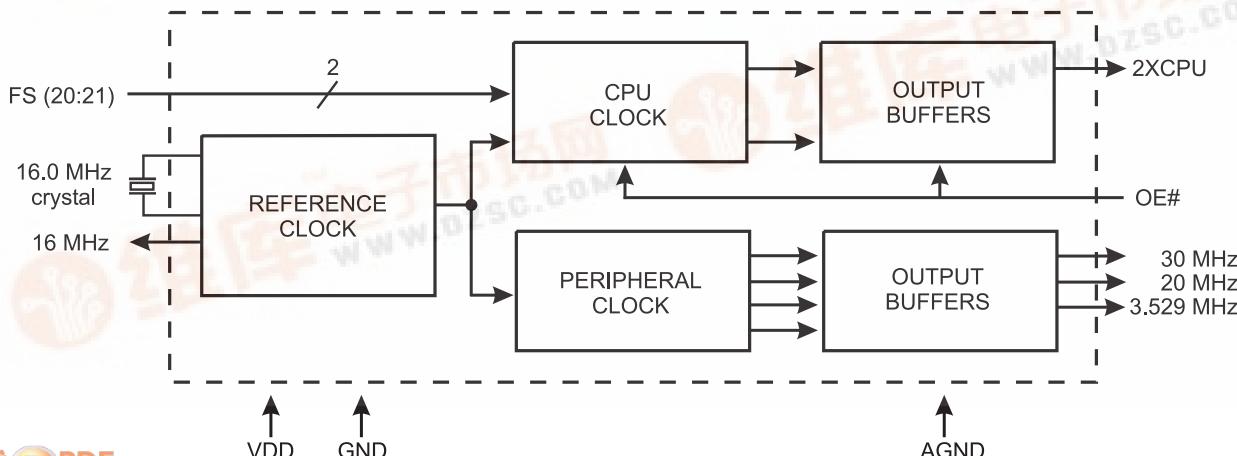
- Compatible with 286, 386, and 486 CPUs
- Supports turbo modes
- Generates communications clock, keyboard clock, floppy disk clock, system reference clock, bus clock and CPU clock
- Output enable tristates outputs
- Up to 100 MHz at 5V or 3.3V
- 20-pin DIP or SOIC
- All loop filter components internal
- Skew-controlled 2X and 1X CPU clocks
- Power-down option

Pin Configuration

3.529 MHz	1	20	FS0
X2	2	19	FS1
X1	3	18	N/C
VDD	4	17	2XCPU
GND	5	16	VDD
20 MHz	6	15	GND
N/C	7	14	N/C
30 MHz	8	13	16 MHz
AGND	9	12	N/C
N/C	10	11	OE#

20-Pin DIP or SOIC

Block Diagram



THIS DATA SHEET (AV9155C-44) IS AN ADDENDUM TO THE EXISTING AV9155C DATA SHEET. ALL INFORMATION IN THIS DATA SHEET SUPERSEDES THE DATA FOUND IN THE ORIGINAL AV9155C DATA SHEET.



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Pin Descriptions for AV9155C-44

PIN NUMBER	PIN NAME	TYPE	DESCRIPTION
1	3.529 MHz	OUT	3.529 MHz reference clock output.
2	X2	OUT	CRYSTAL connection.
3	X1	IN	CRYSTAL connection.
4	VDD	PWR	DIGITAL POWER SUPPLY (+5V).
5	GND	PWR	Digital GROUND.
6	20 MHz	OUT	20 MHz clock output.
7	N/C	-	Not internally connected.
8	30 MHz	OUT	30 MHz keyboard clock output.
9	AGND	PWR	ANALOG GROUND (original version).
10	N/C	-	Not internally connected.
11	OE#	IN	OUTPUT ENABLE. Tristates 2XCPU output when high. (Has internal pull-up.)
12	N/C	-	Not internally connected.
13	16 MHz	OUT	16 MHz reference clock output.
14	N/C	-	Not internally connected.
15	GND	PWR	Digital GROUND.
16	VDD	PWR	DIGITAL POWER SUPPLY (+5V).
17	2XCPU	OUT	CPU clock output.
18	N/C	-	Not internally connected.
19	FS1	IN	CLOCK frequency SELECT #1. (Has internal pull-up.)
20	FS0	IN	CLOCK frequency SELECT #0. (Has internal pull-up.)

**AV9155C-44**

Functionality

(Using 16.0 MHz input. All frequencies in MHz.)

CPU

FS1 (Pin 19)	FS0 (Pin 20)	2XCPU (Pin 17)
0	0	20.0
0	1	28.0
1	0	22.59
1	1	39.38

* 5V only

PERIPHERAL CLOCKS

(Pin 1)	(Pin 6)	(Pin 8)
3.529 Mhz	20 MHz	30 MHz

REFERENCE CLOCKS

(Pin 13)
16 Mhz

Specification Limits (*superseding AV9155C general data sheet*)

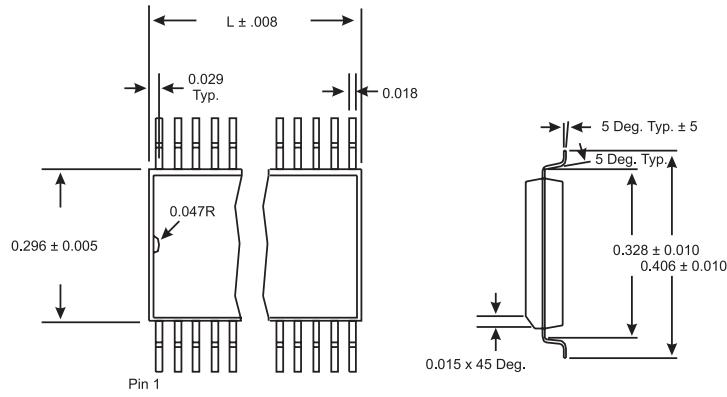
No internal capacitors on crystal pins X1 and X2.

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Jitter, One Sigma, ¹ all clocks 20 to 40 MHz	tj1sa	10,000 cycles			500	ps
Jitter, One Sigma, ¹ clocks below 20 MHz	tj1sb	10,000 cycles			2.0	%
Jitter, Absolute, all clocks 20 to 40 MHz	tjabsa	10,000 cycles	-1000		1000	ps
Jitter, Absolute, ¹ all clocks below 20 MHz	tjabsb	10,000 cycles	-3.0		3.0	%

Note: Parameter is guaranteed by design and characterization, not subject to production testing.

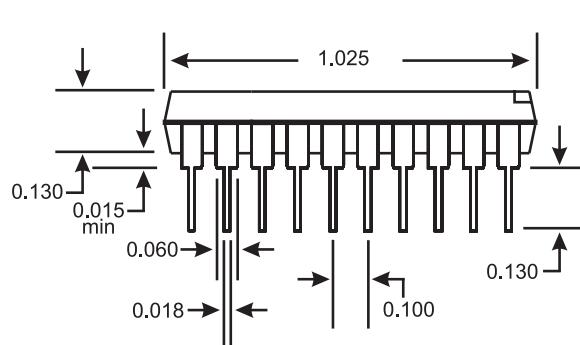
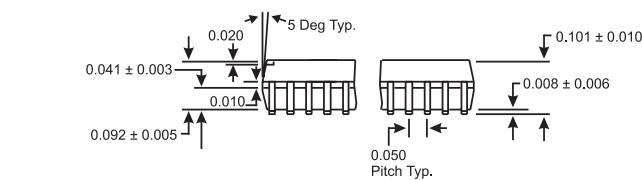


AV9155C-44



SOIC

LEAD COUNT	20L
DIMENSION L	0.504



20 Pin DIP

Ordering Information

AV9155C-44CW20

Example:

ICS XXXX-PPP M X#W

Lead Count & Package Width

Lead Count=1, 2 or 3 digits
W=.3" SOIC or .6" DIP; None=Standard Width

Package Type

W=SOIC T&R=Tape and Reel

Pattern Number (2 or 3 digit number for parts with ROM code patterns)

Device Type (consists of 3 or 4 digit numbers)

Prefix

ICS, AV=Standard Device