


Description

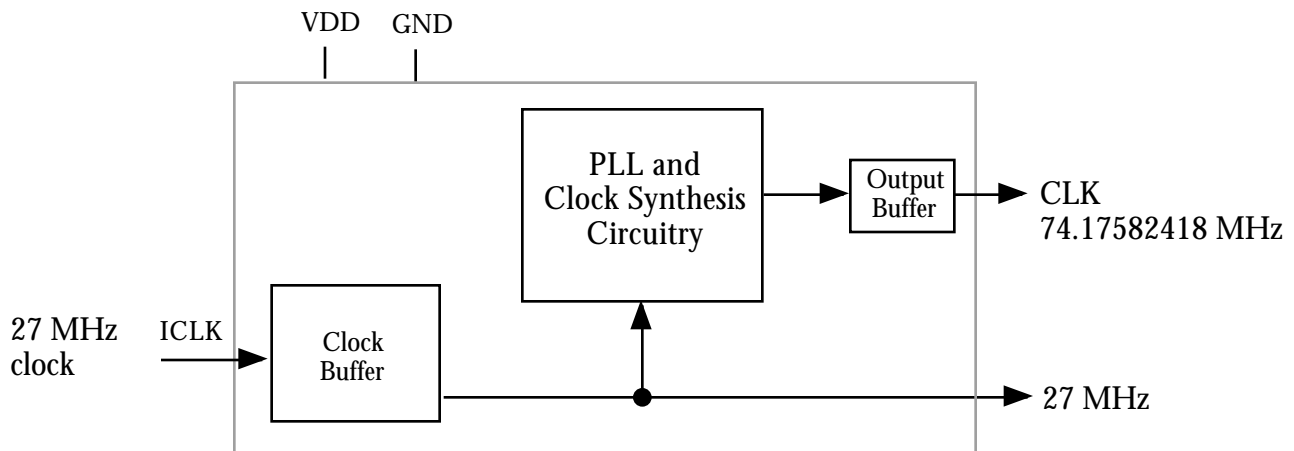
The MK2714 is a low cost, low jitter, high performance clock synthesizer designed to produce the 74.17 MHz clock necessary for HDTV systems. Using analog Phase-Locked Loop (PLL) techniques, the device accepts a 27 MHz clock input.

MicroClock offers a wide variety of clock synthesizers for desktop and portable computers, and multimedia systems. Consult MicroClock to eliminate crystals and oscillators from your board.

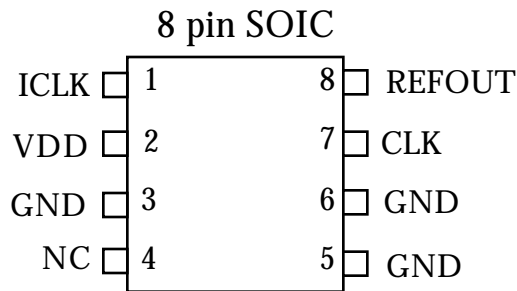
Features

- Packaged as 8 pin SOIC or die 
- Input frequency of 27 MHz
- Zero ppm synthesis error (patented) in output clock
- 3.3V or 5.0V±10% operating supply
- 25mA drive capability at TTL levels
- Ideal for HDTV applications and oscillator manufacturers
- Advanced, low power CMOS process
- Custom masks easily and quickly made

Block Diagram



Pin Assignment



Pin Descriptions

Number	Name	Type	Description
1	ICLK	I	Input clock connection. Connect to a 27 MHz clock input.
2	VDD	P	Connect to +3.3V or +5V.
3	GND	P	Connect to ground.
4	NC		No connect.
5	GND	P	Connect to ground.
6	GND	P	Connect to ground.
7	CLK	O	74.17582418 MHz clock output.
8	REFOUT	O	27 MHz buffered clock output.

Type: I = Input, O = output, P = power supply connection

Decoupling and External Components

The MK2714 requires a 0.1 μ F decoupling capacitor to be connected between VDD and GND on pins 2 and 3. It must be connected close to the MK2714. Other VDD and GND connections should be connected to those pins, or to the VDD and GND planes on the board.

**Electrical Specifications**

Parameter	Conditions	Minimum	Typical	Maximum	Units
ABSOLUTE MAXIMUM RATINGS (Note 1)					
Supply voltage, VDD	Referenced to GND			7	V
Inputs and Clock Outputs	Referenced to GND	-0.5		VDD+0.5	V
Ambient Operating Temperature		0		70	°C
Soldering Temperature	Max of 10 seconds			260	°C
Storage temperature		-65		150	°C
DC CHARACTERISTICS (VDD = 5V unless noted)					
Operating Voltage, VDD		3.0	5	5.5	V
Input High Voltage, VIH		2			V
Input Low Voltage, VIL				0.8	V
Output High Voltage, VOH	IOH=-4mA	VDD-0.4			V
Output Low Voltage, VOL	IOL=25mA			0.4	V
Operating Supply Current, IDD, 5.0V	No Load		30		mA
Short Circuit Current	Each output		±50		mA
Input Capacitance			7		pF
AC CHARACTERISTICS (VDD = 5V unless noted)					
Input Frequency			27.000		MHz
Frequency Error, output clock				0	ppm
Output Clock Rise Time	0.8 to 2.0V			1.5	ns
Output Clock Fall Time	2.0 to 0.8V			1.5	ns
Output Clock Duty Cycle	At 1.4V	40	50	60	%
Maximum Absolute Jitter, short term			200		ps

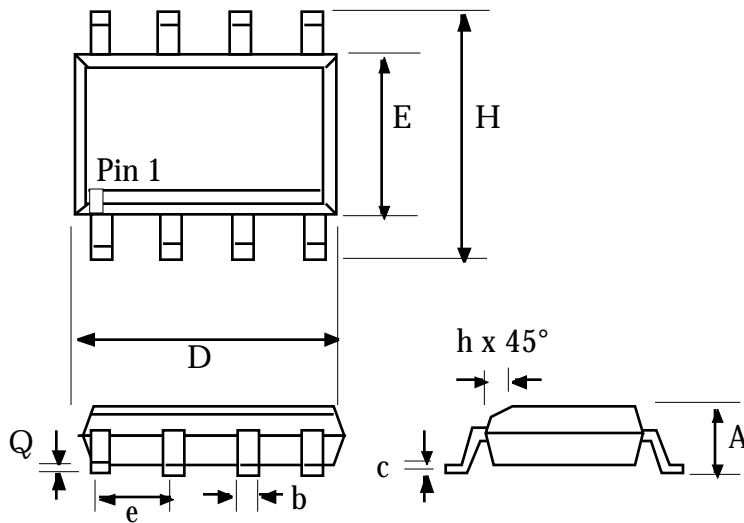
- Notes: 1. Stresses beyond those listed under Absolute Maximum Ratings could cause permanent damage to the device. Prolonged exposure to levels above the operating limits but below the Absolute Maximums may affect device reliability.
2. Typical values are at 25°C.

External Components

The MK2714 requires a minimum number of external components for proper operation. Decoupling capacitors of 0.1µF should be connected between VDD and GND (pins 2 and 3), as close to the MK2714 as possible. A series termination resistor of 33 Ω may be used for the clock output.

Package Outline and Package Dimensions

8 pin SOIC



Symbol	Inches		Millimeters	
	Min	Max	Min	Max
A	0.055	0.068	1.397	1.7272
b	0.013	0.019	0.330	0.483
D	0.185	0.200	4.699	5.080
E	0.150	0.160	3.810	4.064
H	0.225	0.245	5.715	6.223
e	.050 BSC		1.27 BSC	
h		0.015		0.381
Q	0.004	0.01	0.102	0.254

Ordering Information

Part/Order Number	Marking	Package	Temperature
MK2714S	MK2714S	8 pin narrow SOIC	0-70°C
MK2714STR	MK2714S	8 pin SOIC on tape and reel	0-70°C

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