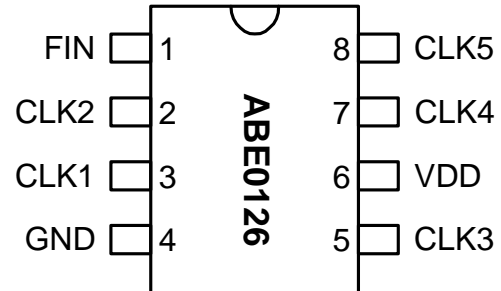


Low EMI Spread Spectrum Multiplier Clock

FEATURES

- Spread Spectrum clock with frequency range of 33 ~ 90MHz.
- Output frequency 1X the input frequency.
- Less than 250 ps skew between outputs.
- Less than 100 ps cycle - cycle jitter.
- $\pm 1.0\%$ Center Spread Modulation ($\pm 15\%$ tolerance).
- TTL/CMOS compatible outputs.
- 3.3V operation.
- Available in 8-Pin 150mil SOIC.

PIN CONFIGURATION

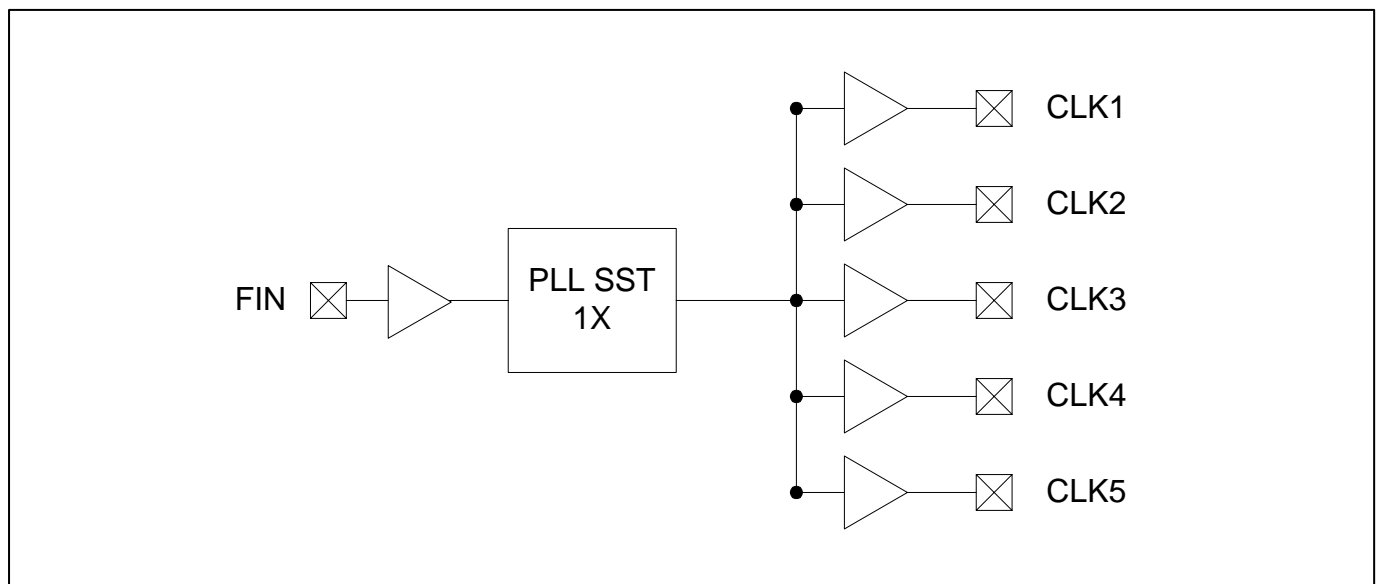


FIN = 33 ~ 90 Mhz

DESCRIPTION

The ABE0126 is a Spread Spectrum Clock Generator designed for the purpose of reducing EMI in high-speed digital systems. The device is designed to operate from 33 ~ 90MHz and provides five low-skew outputs with $\pm 1.0\%$ Center Spread Modulation.

BLOCK DIAGRAM



Low EMI Spread Spectrum Multiplier Clock

PIN DESCRIPTIONS

| Name | Number | Type | Description |
|------|--------|------|--|
| FIN | 1 | I | Input Clock Frequency. (33 ~ 90MHz) |
| CLK2 | 2 | O | Buffered Clock Output. 1X the input frequency (FIN). |
| CLK1 | 3 | O | Buffered Clock Output. 1X the input frequency (FIN). |
| GND | 4 | I | Ground. |
| CLK3 | 5 | O | Buffered Clock Output. 1X the input frequency (FIN). |
| VDD | 6 | P | 3.3V Power Supply. |
| CLK4 | 7 | O | Buffered Clock Output. 1X the input frequency (FIN). |
| CLK5 | 8 | O | Buffered Clock Output. 1X the input frequency (FIN). |

ELECTRICAL SPECIFICATIONS

1. Absolute Maximum Ratings

| PARAMETERS | SYMBOL | MIN. | MAX. | UNITS |
|-----------------------------------|----------|------|--------------|-------|
| Supply Voltage | V_{DD} | | 4.6 | V |
| Input Voltage, dc | V_I | -0.5 | $V_{DD}+0.5$ | V |
| Output Voltage, dc | V_O | -0.5 | $V_{DD}+0.5$ | V |
| Storage Temperature | T_S | -65 | 150 | °C |
| Ambient Operating Temperature* | T_A | -40 | 85 | °C |
| Junction Temperature | T_J | | 125 | °C |
| Lead Temperature (soldering, 10s) | | | 260 | °C |
| ESD Protection, Human Body Model | | | 2 | kV |

Exposure of the device under conditions beyond the limits specified by Maximum Ratings for extended periods may cause permanent damage to the device and affect product reliability. These conditions represent a stress rating only, and functional operations of the device at these or any other conditions above the operational limits noted in this specification is not implied.

* Note: Operating Temperature is guaranteed by design for all parts (COMMERCIAL and INDUSTRIAL), but tested for COMMERCIAL grade only.

2. Electrical Characteristics

| PARAMETERS | SYMBOL | CONDITIONS | MIN. | TYP. | MAX. | UNITS |
|---------------------|----------|---|------|------|-------|---------|
| Supply Voltage | V_{DD} | | 2.97 | | 3.63 | V |
| Input Low Voltage | V_{IL} | | | | 0.8 | V |
| Input High Voltage | V_{IH} | | 2.0 | | | V |
| Input Low Current | I_{IL} | $V_{IN} = 0V$ | | 19 | 50.0 | μA |
| Input High Current | I_{IH} | $V_{IN} = V_{DD}$ | | 0.10 | 100.0 | μA |
| Output Low Voltage | V_{OL} | $I_{OL} = 50\text{ mA}$ | | 0.25 | 0.4 | V |
| Output High Voltage | V_{OH} | $I_{OH} = 50\text{ mA}$ | 2.4 | 2.9 | | V |
| Supply Current | I_{DD} | Unloaded outputs at 75MHz, SEL inputs at V_{DD} or GND | | 30.0 | 40.0 | mA |

Low EMI Spread Spectrum Multiplier Clock

3. Timing Characteristics

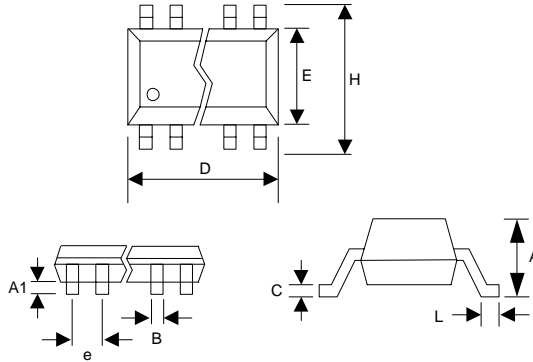
| PARAMETERS | SYMBOL | CONDITIONS | MIN. | TYP. | MAX. | UNITS |
|-----------------------|---------------|------------------------------------|------|------|------|-------|
| Input Frequency | F_{IN} | | 33 | | 90 | MHz |
| Rise Time | T_r | Measured at 0.8V ~ 2.0V @ 3.3V | 0.8 | 0.95 | 1.1 | ns |
| Fall Time | T_f | Measured at 2.0V ~ 0.8V @ 3.3V | 0.78 | 0.85 | 0.9 | ns |
| Output Duty Cycle | D_T | | 45 | 50 | 55 | % |
| Input to Output Delay | | | 2 | | 4 | ns |
| Cycle to Cycle Jitter | $T_{cyc-cyc}$ | Over output frequency range @ 3.3V | | | 100 | ps |

Low EMI Spread Spectrum Multiplier Clock

PACKAGE INFORMATION

8 PIN Narrow SOIC (mm)

| Symbol | SOIC | |
|--------|----------|------|
| | Min. | Max. |
| A | 1.47 | 1.73 |
| A1 | 0.10 | 0.25 |
| B | 0.33 | 0.51 |
| C | 0.19 | 0.25 |
| D | 4.80 | 4.95 |
| E | 3.80 | 4.00 |
| H | 5.80 | 6.20 |
| L | 0.38 | 1.27 |
| e | 1.27 BSC | |



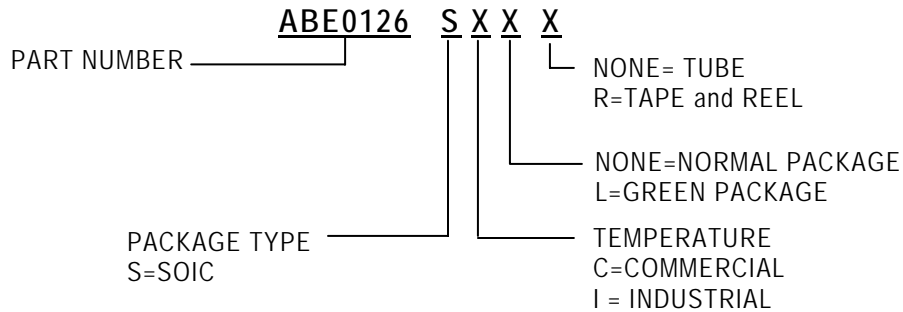
ORDERING INFORMATION

For part ordering, please contact our Sales Department:

30332 Esperanza., Rancho Santa Margarita, Ca 92688
 Ph: 949-546-8000 Fax: 949-546-8001

PART NUMBER

The order number for this device is a combination of the following:
 Device number, Package type and Operating temperature range



| Order Number | Marking | Package Option |
|--------------|------------|---------------------|
| ABE0126SC-T | ABE0126SC | SOIC -Tape and Reel |
| ABE0126SC | ABE0126SC | SOIC -Tube |
| ABE0126SCL-T | ABE0126SCL | SOIC -Tape and Reel |
| ABE0126SCL | ABE0126SCL | SOIC -Tube |

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