| | Title: | Performance Report SiT8008B, 24MHz | | | |
|-----------------------------|--------|------------------------------------|-------|--------------|--|
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| | Orig: | | Date: | Mar 31, 2014 | |

This report contains sample performance data for SiT8008B-24MHz.

Conditions:

- Frequency 24 MHz
- Vdd 1.8V, 2.5V, 2.8V, 3.0V, 3.3V
- Temperature 25℃
- Termination:
 - No load for IDD
 - $\circ~~50\Omega$ to GND for phase noise
 - $\circ \quad 15 pF \text{ for other tests} \quad$

Equipment:

- Agilent DSA90604 oscilloscope (6GHz, 20Gsps)
 - o Period jitter, waveform, rise/fall time, duty cycle, amplitude
- Agilent E5052B Signal Source Analyzer
 - Phase noise, integrated phase jitter
- Power supply current
 - Agilent 34401A DMM

Data:

- Random Phase jitter, Period Jitter, Duty cycle, Rise/Fall time, Amplitude, Idd
- Output waveforms
- Frequency stability versus temperature

| Parameter | Units | | | Voltage | | |
|--|-----------|-------|-------|---------|-------|-------|
| | Units | 1.8 V | 2.5 V | 2.8 V | 3.0 V | 3.3 V |
| Random Phase jitter (900kHz - 5MHz) | ps, rms | 0.44 | 0.45 | 0.44 | 0.44 | 0.44 |
| Random Phase jitter (12kHz - 5MHz) | ps, rms | 1.21 | 1.21 | 1.20 | 1.21 | 1.22 |
| Random Phase jitter (900kHz - 20MHz)* | ps, rms | 0.69 | 0.71 | 0.69 | 0.69 | 0.71 |
| Random Phase jitter (12kHz - 20MHz)* | ps, rms | 1.32 | 1.33 | 1.32 | 1.32 | 1.34 |
| Period jitter | ps, rms | 1.61 | 1.44 | 1.41 | 1.38 | 1.37 |
| Period jitter (10,000 cycles) | ps, pk-pk | 12.4 | 11.3 | 11.0 | 11.1 | 10.9 |
| Duty cycle | % | 49.9 | 49.9 | 50.1 | 50.2 | 50.4 |
| Rise time (20% - 80%) | ns | 1.26 | 1.03 | 0.94 | 1.00 | 0.93 |
| Fall time (80% - 20%) | ns | 1.27 | 0.98 | 0.91 | 0.97 | 0.92 |
| Amplitude | V | 1.79 | 2.48 | 2.78 | 3.02 | 3.30 |
| Current consumption (no load, output enabled) | mA | 3.58 | 3.71 | 3.77 | 3.79 | 3.87 |
| Current consumption (no load, output disabled) | mA | 3.38 | 3.45 | 3.50 | 3.53 | 3.62 |

Table 1. Performance data

*Calculated by extending the noise floor of the phase noise from 5 MHz to 20 MHz

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Figure 1. Duty cycle, Rise/Fall time and Amplitude 1.8V

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Figure 2. Duty cycle, Rise/Fall time and Amplitude 2.5V

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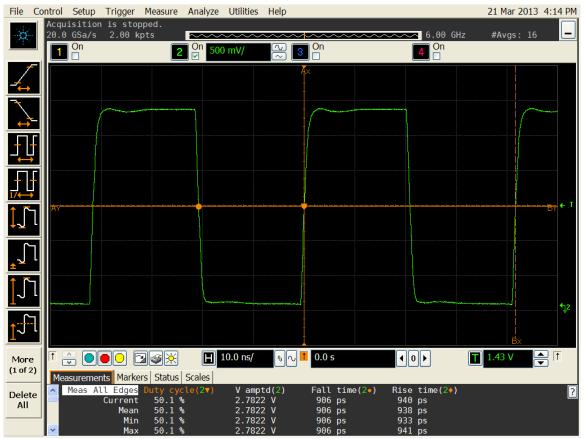


Figure 3. Duty cycle, Rise/Fall time and Amplitude 2.8V

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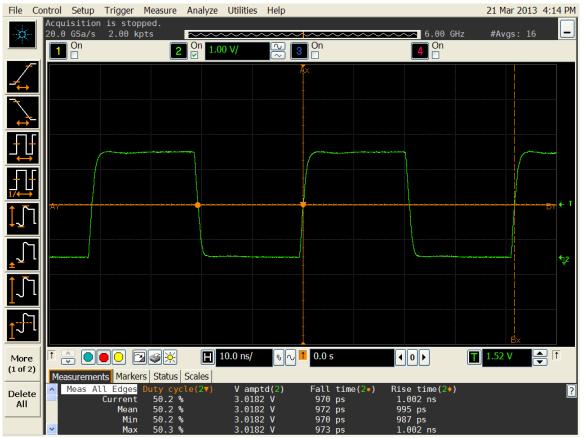


Figure 4. Duty cycle, Rise/Fall time and Amplitude 3.0V

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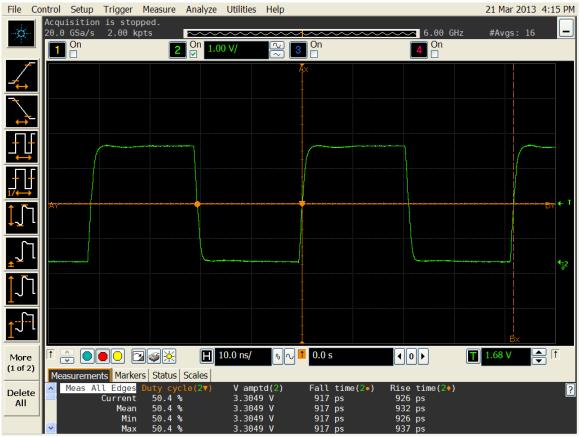


Figure 5. Duty cycle, Rise/Fall time and Amplitude 3.3V

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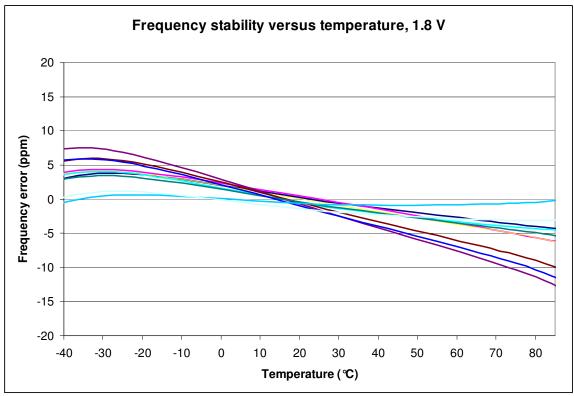


Figure 6. Frequency stability* versus temperature, 1.8 V

*Please note that frequency stability in SiTime devices is not depended on output frequency.

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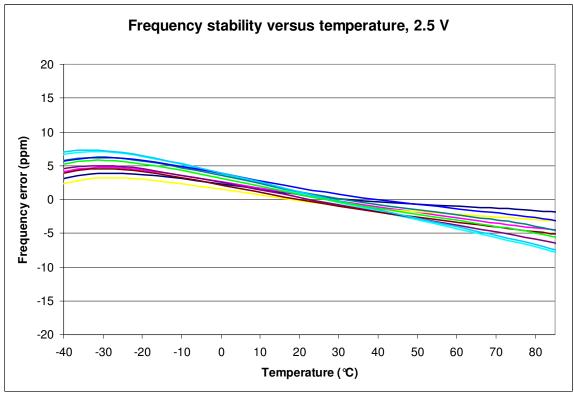


Figure 7. Frequency stability versus temperature, 2.5 V

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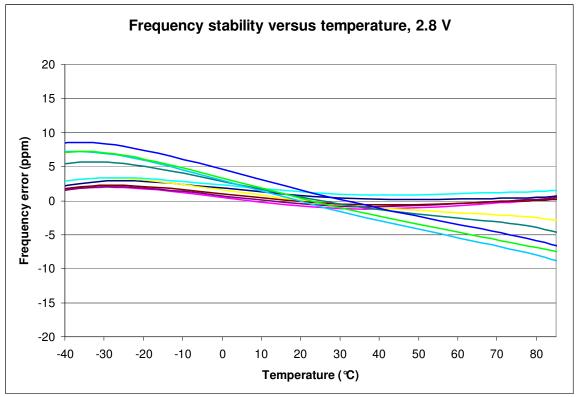


Figure 8. Frequency stability versus temperature, 2.8 V

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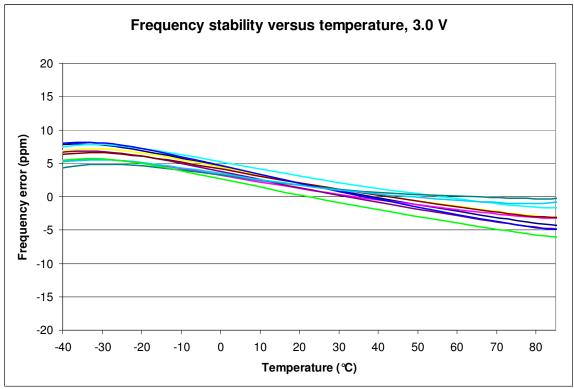


Figure 9. Frequency stability versus temperature, 3.0 V

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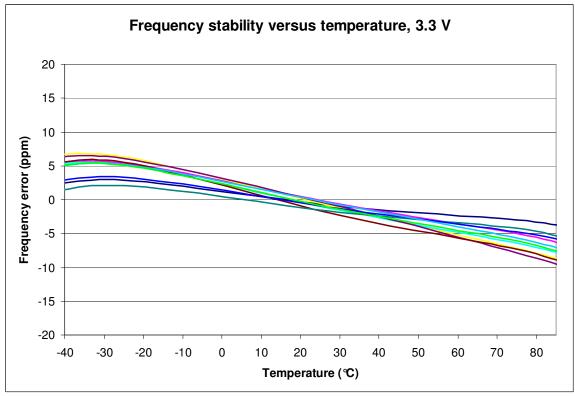


Figure 10. Frequency stability versus temperature, 3.3 V

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