

## EPSON TIMING DEVICES

# SG-8018 COST-EFFECTIVE AND EXTENDED TEMPERATURE RANGE PROGRAMMABLE OSCILLATORS

### SG-8018 P-SPXO

- **Frequency Range:** 0.67 MHz - 170 MHz
- **Temperature Range:** -40 °C to +105 °C
- **Tight Stability:** ±50 ppm including aging
- **Supply Voltage:** 1.8V, 2.5V, 3.3V (1.62V - 3.63V)
- **Low Power:** 3.2 mA – 8.1 mA maximum
- **Single-Ended Output:** LVCMOS
- **Programmable Rise/Fall Time**
- **Output Enable (OE) or Standby (ST)**
- **Four Package Sizes:** 7 x 5, 5 x 3.2, 3.2 x 2.5, 2.5 x 2.0



## FAST-TURN PROTOTYPES



To support rapid product development, Epson's programmable oscillators can be ordered with 24-hour turnaround from distributors or you can program blanks yourself using Epson's SG-Writer II.

Epson's SG-8018 offers extended temperature range and programmable rise/fall time. For production, you can order programmable oscillators in volume or convert to a pin-compatible Epson fixed-frequency oscillator.

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# EPSON SG-8018 P-SPXO

NEW

## ADVANTAGES

- Fast-Turn Prototypes
- Easy conversion to Epson fixed-frequency oscillators for production
- Extended temperature range
- Low power

Epson pioneered programmable oscillators in 1977. By delivering 24-hour custom frequencies, Epson programmable oscillators revolutionized the world of frequency control and enabled rapid product development.

Epson's latest cost-effective programmable oscillator, the SG-8018 offers extended Temperature range (to 105 °C), standard SPXO stability ( $\pm 50$  ppm, including aging), and programmable output rise & fall times. These 5<sup>th</sup> generation devices are also lower power than the previous generation.

### Fast-Turn Prototypes

Distributors can program SG-8018 oscillators with 24-hour turnaround or you can program in your own lab with Epson's SG-Writer II and blanks. Easy-to-use software can be downloaded from Epson's website.

### How It Works

Epson's SG-8018 uses an AT fundamental crystal with a fractional-n PLL to synthesize any frequency between 0.67 and 170 MHz with 1 ppm resolution. Frequencies are set using OTP (one-time programming).

### Ordering Options

Epson's SG-8018 oscillators are available in 4 package sizes from 2.5 x 2.0 to 7.0 x 5.0. The size must be selected at the time of ordering.

### Convert to Epson Fixed-Frequency Oscillators for Production

Programmable oscillators are ideal for prototyping. Programmable oscillators can be used in production or converted to pin-compatible Epson fixed-frequency oscillators.

| Size<br>(mm x mm) | Programmable<br>(P-SPXO) | Fixed Frequency<br>(SPXO) |
|-------------------|--------------------------|---------------------------|
| 2.5 x 2.0         | SG-8018CG                | SG-210                    |
| 3.2 x 2.5         | SG-8018CE                | SG-310                    |
| 5.0 x 3.2         | SG-8018CB                | SG5032C                   |
| 7.0 x 5.0         | SG-8018CA                | SG7050C                   |

All other parameters can be programmed either at the time of ordering or with an Epson SG-Writer II.

### Programming Options

Programming options for SG-8018 include:

- pin 1 function (output enable or standby) and
- rise/fall time (fast, normal, slow).

| Pin 1 Function |
|----------------|
| Output Enable  |
| Standby        |

| Frequency<br>Range | Rise/Fall Time (typical @ 3.3V, C <sub>L</sub> = 5 pF) |         |         |
|--------------------|--------------------------------------------------------|---------|---------|
|                    | Slow                                                   | Normal  | Fast    |
| 0.67 – 20 MHz      | 0.9 ns                                                 | 0.7 ns  | 0.25 ns |
| 20 – 40 MHz        |                                                        | 0.7 ns  | 0.25 ns |
| 40 – 170 MHz       |                                                        | 0.25 ns | 0.25 ns |

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