SILEGO TECHNOLOGY

GreenCLK™

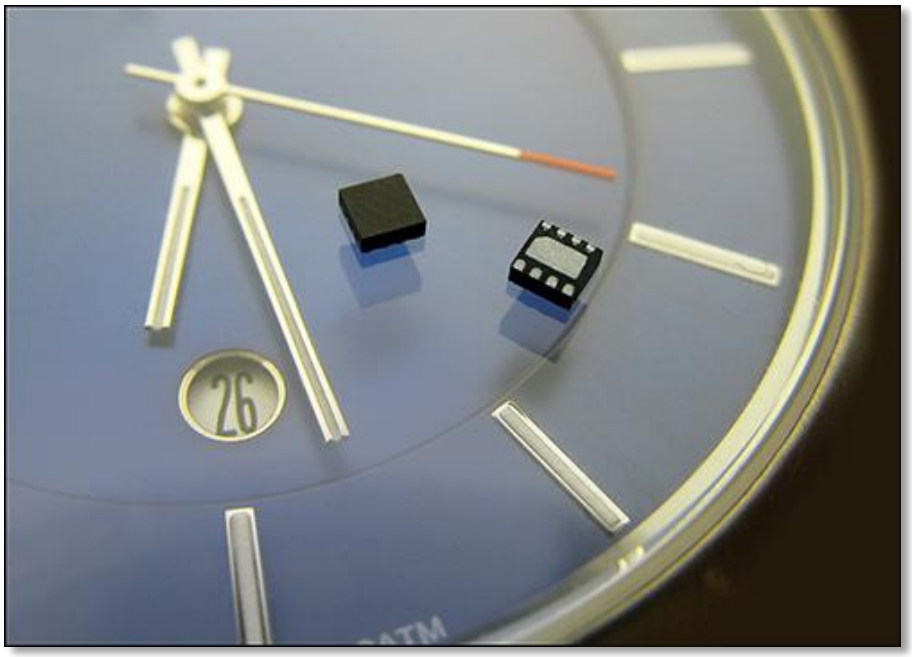
Crystal Replacement Products

GreenCLK (GCLK) is a silicon-based crystal replacement technology. Using a single robust clock reference (crystal, XO, or TCXO), GCLK can generate up to 6 clock outputs including an incredibly stable (±15 PPM over -40 C° to 85 C° temperature range) 32.768 kHz output, as well as multiple high-frequency outputs of up to 50 MHz.

Millions of top consumer electronics devices such as notebooks, netbooks, tablets, wearable devices, and smart phones, utilize Silego's GCLK to replace traditional quartz crystals.

GreenCLK Benefits

- **Tiny PCB Footprint** – Package size as small as 1.0 x 1.45 x 0.3 mm
- **Component Count Reduction** – A single 6-output GCLK replaces up to 11 components
- **Simplified Layout**
- **Reduced Power** – As low as 0.8 µA for 32.768 kHz
- **Reduced Cost** – Competitive pricing/BOM savings
- **Stable Performance Over Temperature** – ±15 PPM 32.768 kHz clock stability over -40 C° to 85 C° range



GreenCLK Advantages Over Traditional Quartz

- Quartz crystals exhibit unstable ±PPM over temperature.
- Using one crystal per frequency is an inefficient use of space and power.
- The footprint of quartz cannot meet shrinking PCB demands.
- Quartz crystals are susceptible to shock and vibration.
- Discrete quartz crystal oscillators require excess components which increase board space, layout complexity, and BOM cost.

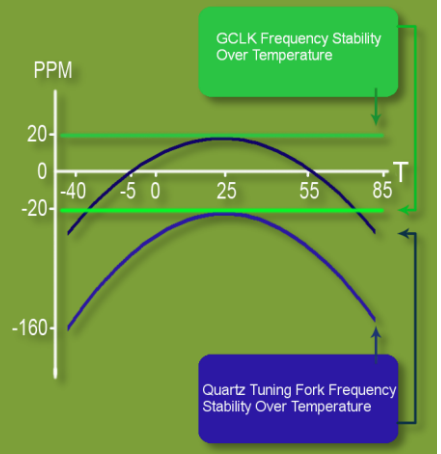


Chart 1: GCLK vs. Quartz 32.768 kHz Frequency Stability vs Temperature

For more information please visit www.silego.com

Or email your questions to info@silego.com

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	Features	Package Sizes	Clock Outputs	Example Applications
GCLK3	• Ultra-low power: <0.8 µA for kHz clock • Supply voltage: +1.8 V • Up to 3 outputs • Integrated on-chip load capacitors	• 1.0 x 1.45 x 0.3 mm, 0.5 mm pitch 6-pin ETDFN • 1.0 x 1.6 x 0.55 mm, 0.4 mm pitch 8-pin STDFN • 1.0 x 2.0 x 0.55 mm, 0.4 mm pitch10-pin STDFN	• Up to 2x 32.768 kHz outputs • Single MHz output (same as input or divided down)	Bluetooth Devices, Digital Cameras, GPS Units, Smart Phones, Smart Pens, Smart Watches, Wearable Devices, Wireless Devices
GCLK2	• Very low power: <1.5 µA for kHz clock • Supply voltage: +3.3 V • Up to 6 outputs • On-chip high-frequency PLL capable of generating non-integer ratios of source clock	• 2.0 x 3.0 x 0.75 mm, 0.4 mm pitch 16-pin TQFN • 2.0 x 3.5 x 0.75 mm, 0.4mm pitch18-pin TQFN	• Up to 2x 32.768 kHz outputs • Up to 5x MHz clock outputs (contact Silego for available frequencies)	Notebooks, Netbooks, Mini PC's, Mobile Devices, Personal Hotspots, Surveillance Cameras, Tablets
GCLK1	• Very low power: <1.8 µA for kHz clock • Supply voltage: +3.3 V • Up to 4 outputs	• 2.0 x 2.0 x 0.75 mm, 0.5 mm pitch 8-pin TQFN • 2.0 x 2.0 x 0.75 mm, 0.4 mm pitch 10-pin TDFN • 3.0 x 3.0 x 0.75 mm, 0.5 mm pitch 16-pin TQFN • 2.0 x 3.5 x 0.75 mm, 0.4 mm pitch 18-pin TQFN	• Up to 2x 32.768 kHz outputs • Up to 2x MHz outputs (same as input or divided down)	Displays, Notebooks, Netbooks, Ultra Books, Portable Media Devices, Smart Watches, Tablets, Wearable Devices

Typical MHz Frequency Outputs: 4, 8, 10, 12, 12.288, 16, 16.369, 16.75699, 19.2, 20, 24, 24.5, 25, 26, 27, 27.12, 31.25, 32, 37.4, 38.4, 40, 48, 50

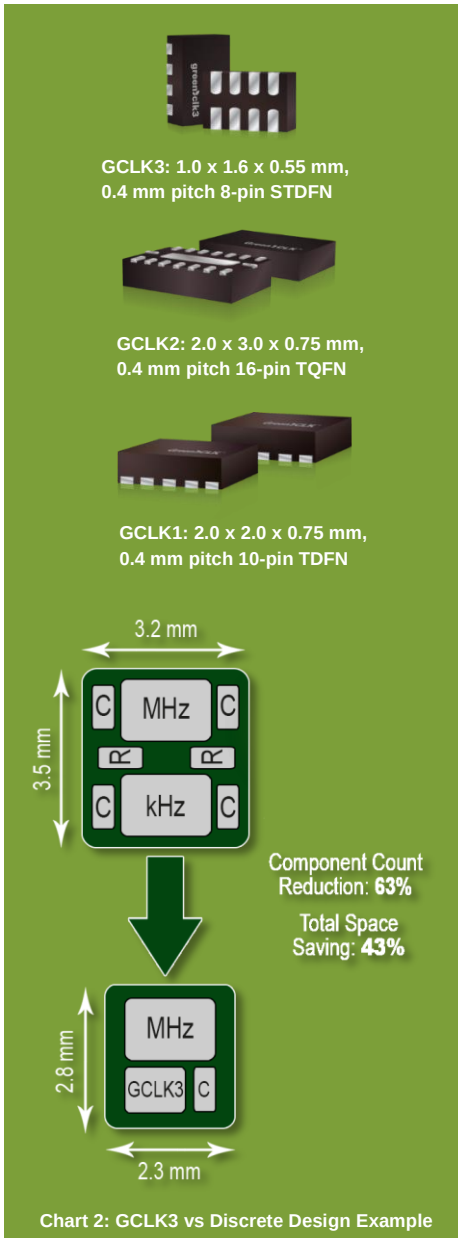

Chart 2: GCLK3 vs Discrete Design Example

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