new

Optical Pulse Wave Sensor IC

Achieves industry-leading pulse wave detection accuracy with low current consumption

BH1790GLC

features

- Low current consumption: 0.7mA (including LED current)
- High sensitivity photosensor built-in (compatible with AlGaInP LEDs)
- Integrated IR Cut and Green filters

applications

- Wearables
- Smartphones
- Tablets

SENSING THE FUTURE.

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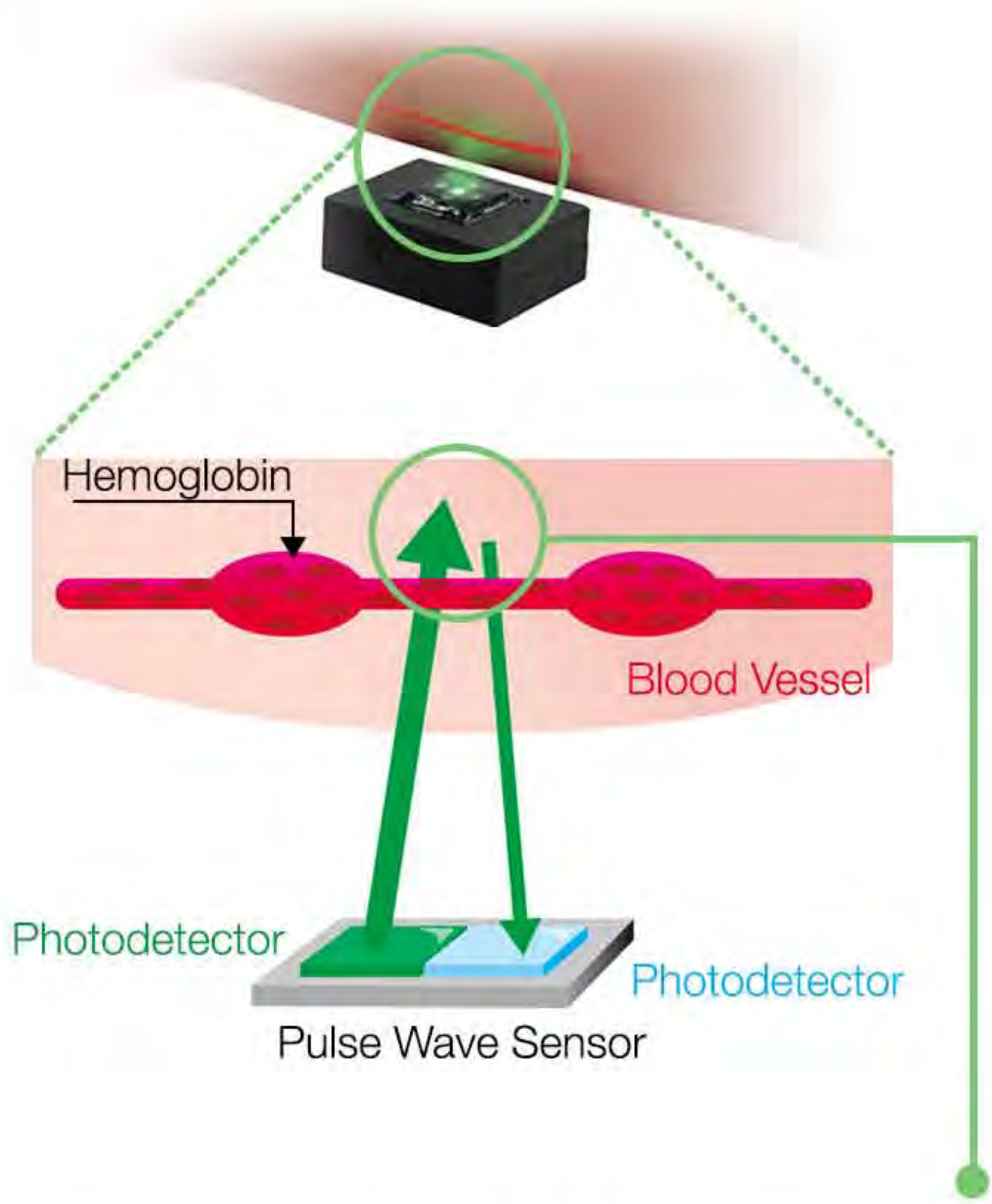
new

Optical Pulse Wave Sensor IC

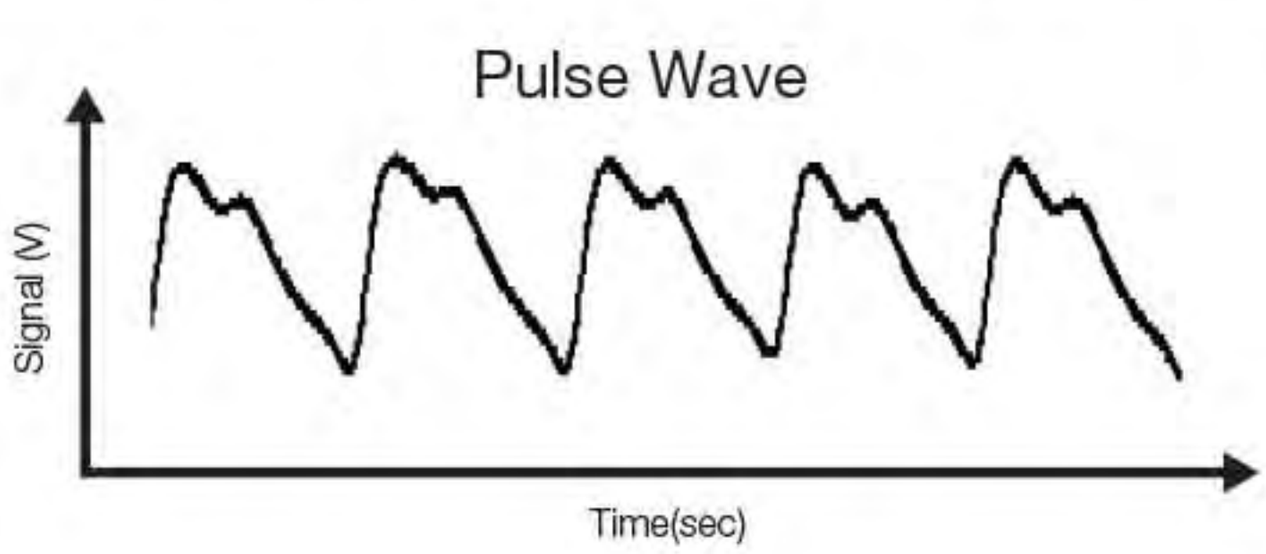
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Operating Principle



The amount of light absorbed changes due to volumetric changes in the blood vessel, resulting in a waveform similar to the one shown below



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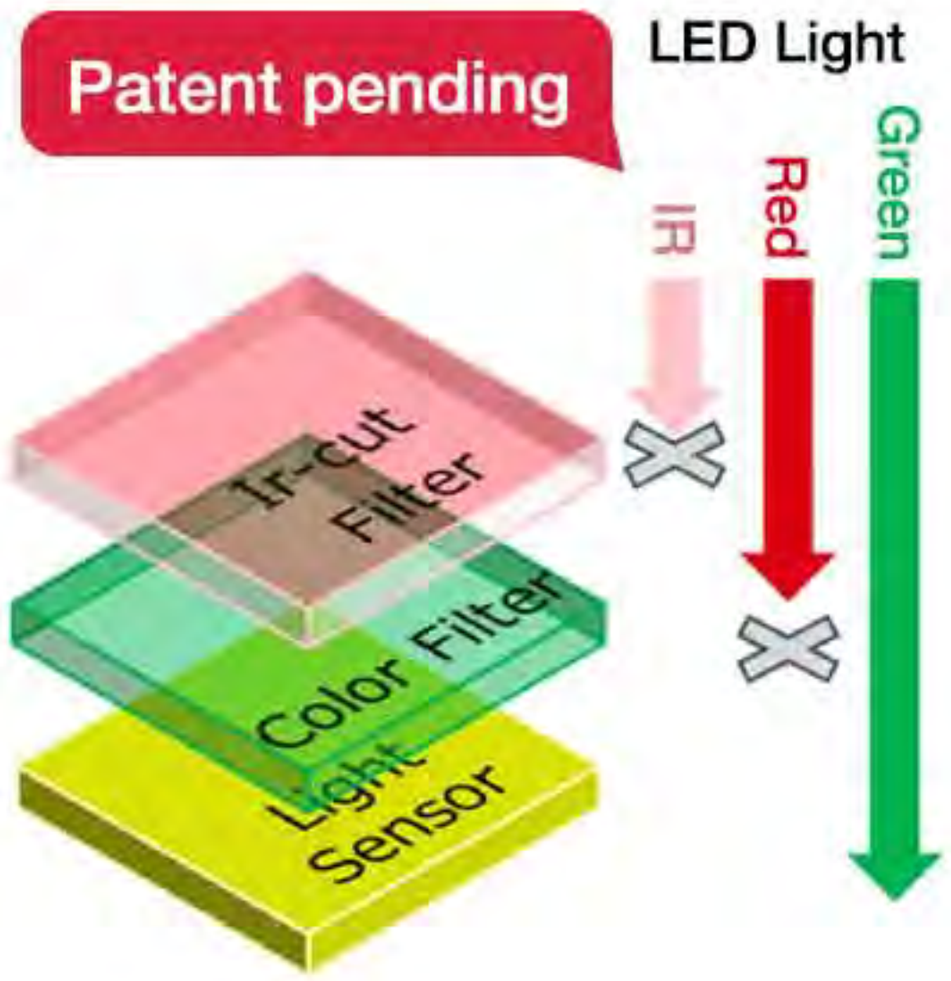
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BH1790GLC

Built-in Motion Detection and Optical Filter Delivers Greater Accuracy

Color sensor built into the receiving block

Removing the red and infrared components of ambient light transmitted through the human body using IR cut and optical filters allows only green light (required for pulse detection) to pass through



Accelerometer used for motion detection

Pulse + Body Motion Artifact

ROHM SEMICONDUCTOR

Pulse Sensor
BH1790GLC

+

Pulse Calculation Motion Artifact Cancellation

ROHM GROUP
LAPIS SEMICONDUCTOR

Sensor MCU
ML630Q791

+

Body Motion Artifact Detection

Kionix®

Accelerometer
KX022

Heart Rate Pulse

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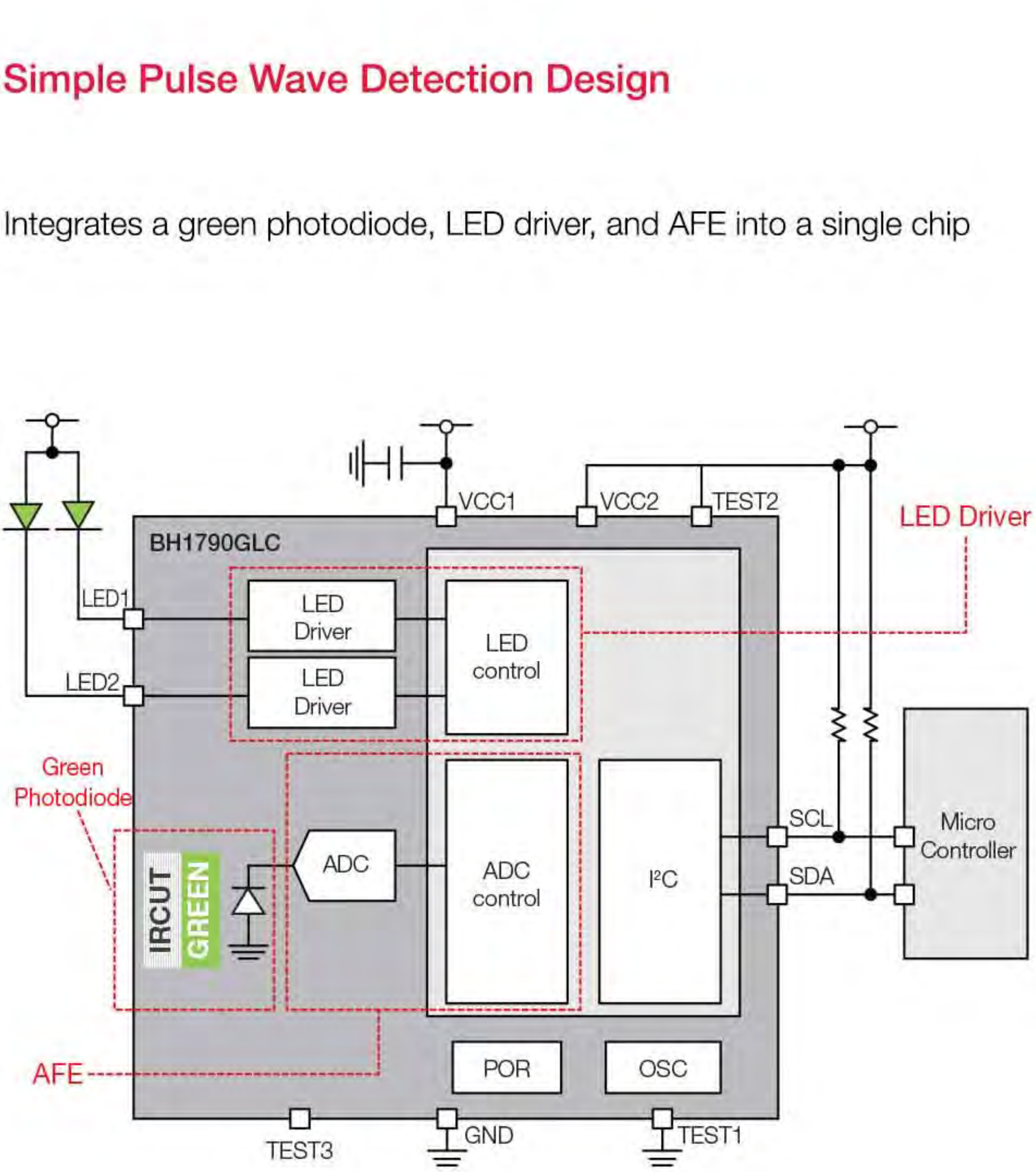
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Simple Pulse Wave Detection Design

Integrates a green photodiode, LED driver, and AFE into a single chip



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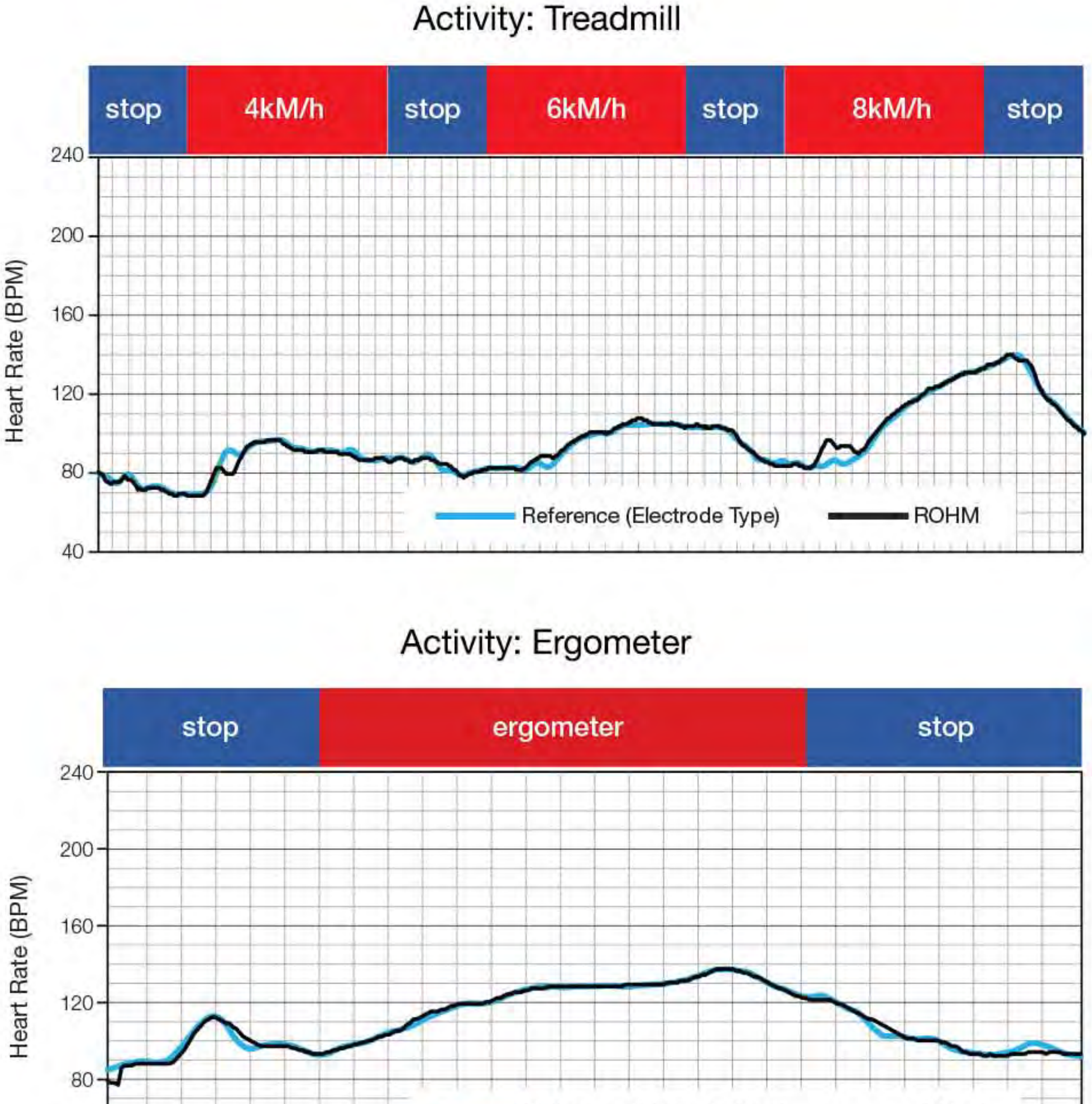
new

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BH1790GLC

Proprietary Algorithm Ensures Stable Heart Rate Measurement



Provides high accuracy detection similar to electrode-type pulse meters

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