COMPONENT FOCUS


BGT24LTR11 is a Silicon Germanium radar MMIC transceiver for signal generation and reception, operating in the 24.0GHz to 24.25GHz ISM band. It is based on a 24GHz fundamental voltage controlled oscillator (VCO). The device was designed with Doppler-radar applications in mind – as it is capable of keeping the transmit signal inside the ISM band without any external PLL – and may also be used in other types of radar such as FMCW or FSK.

Radar used in motion detection applications is superior to passive infrared technology by allowing precise measurement of object detection. Radar is also superior to camera-based systems by allowing detection of the objects while keeping identities anonymous. There are multiple applications for using radar sensors to make your system smarter than the competition.

Its low 1.95mW power consumption together with the very low 0.25mA supply current makes the BGT24LTR11 the most energy-efficient and compact radar transceiver for motion detection and industrial applications. The device was designed with Doppler radar applications in mind – as it is capable of keeping the transmit signal inside the ISM band without any external PLL – and may also be used in other types of radar such as FMCW or FSK.

A built-in voltage source delivers a VCO tuning voltage which is proportional to absolute temperature (PTAT). When connected to the VCO tuning pin it compensates for the inherent frequency drift of the VCO over-temperature, thus stabilizing the VCO within the ISM band and eliminating the need for a PLL/microcontroller. An integrated temperature (PTAT) circuiting within the ISM band and eliminating the need for a PLL/microcontroller. An integrated

**FEATURES**
- MMIC transceiver
- Fully integrated low phase noise VCO
- Built-in temperature compensation circuit for VCO stabilization
- Low power consumption
- Fully ESD protected device
- Single ended RF and IF terminals
- Single supply voltage 3.3V

**APPLICATIONS**
- Point-of-load modules
- Power supplies for microcontrollers, microprocessors, FPGAs and DSPs
- DC-DC converter modules for routers and switches
- Portable instruments
- Test and measurement systems
- Devices powered by a lithium-ion battery

Efficient New Buck-Boost Regulator for Battery-Powered Portables Carries Up to 3A

Intersil has launched the ISL91127R, a buck-boost regulator that offers high conversion efficiency up to 96% and a high current capability.

Supply in a QFN package, the regulator has a compact footprint that makes it ideal for use in battery-powered and portable devices. In addition, it offers a low quiescent current of 30μA for superior light-load efficiency. It includes on-board power MOSFETs rated for a maximum current of 4.5A.

In handheld devices, where the input voltage might at different times be higher or lower than the output voltage, a buck-boost regulator improves efficiency and provides longer battery run-time than a circuit based on a boost regulator plus bypass.

The ISL91127R operates in buck, boost or buck-boost mode, depending on the relation between input and output voltages, and provides smooth transitions between modes to prevent noise and glitches.

The ISL91127R can be configured for discontinuous or forced continuous operation at light-loads. Forced continuous operation reduces noise and RF interference, while discontinuous mode provides high efficiency by reducing switching losses at light-loads.

The ISL91127R is supplied in a 3 x 4mm QFN package with exposed pad lead frames for excellent thermal performance.

**FEATURES**
- ±10% output voltage margining
- Adjustable current limit
- Start-up with pre-biased output
- Internal soft start
- Frequency adjustable between 500kHz and 4MHz
- Short circuit protection
- Over-temperature protection

**APPLICATIONS**
- Wireless communications devices
- Handheld and battery-powered consumer and medical devices
- Wireless communications devices
- RF power amplifiers

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