

Product Brief



SEMTECH ADVANCED COMMUNICATION & SENSING

XE1203F

Wideband High Performance
Multi-Channel Low Power Transceiver



Industry's Leading Low Power Wideband Transceiver

High Link-budget BiCMOS FSK transceiver
433 MHz / 868 MHz / 915 MHz

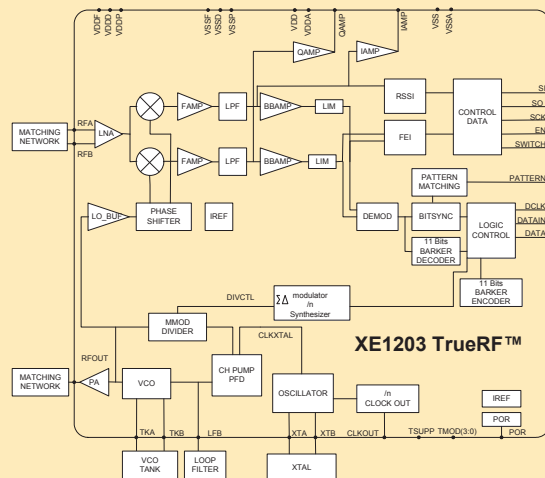
Key Product Features:

- Semtech's True RF™ technology
- Typical link budget of 129 dB @ 0.1% BER
No need for external LNA or PA
- RX sensitivity -114 dBm (typical) @ 4.8 kbit/s,
0.1% BER
- TX output power + 15 dBm (typical)
- Data rates from 1.2 to 152.34 kbit/s
- KONNEX™ compatible
- Built-in 11-bit Barker encoder/decoder for robust
transmission/reception
- Bit synchronizer for data recovery
- Digital RSSI
- Built-in Frequency Error Indicator for AFC
- 500 Hz frequency resolution
- 150 μ S Transmitter wake up time
- Pre-certified reference designs for 433, 868 and
915 MHz bands
- Satisfies ETSI EN 300 220-1 and FCC Part 15.247
regulations WITHOUT requiring an external SAW filter
- Complies with FCC Digital Modulation System
requirements

Applications:

- Automated Meter Reading
- Wireless Intercom Systems and
Voice over RF Links
- Security and Alarm Systems
- Secure Communications with Data Whitening
- Long-Range Bidirectional Remote Control
- High Performance Telemetry
- Home and Building Automation
- KONNEX™ Systems
- Industrial Monitoring and Control

Block Diagram:



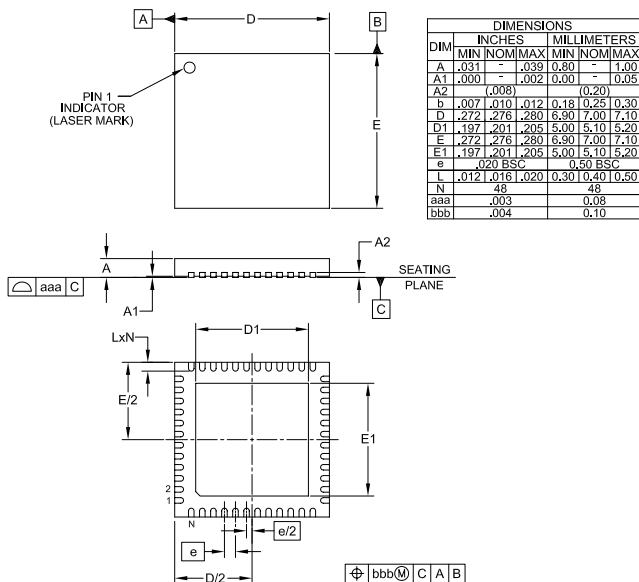
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Product Brief

XE1203F – Wideband High Performance Multi-Channel UHF-band Transceiver

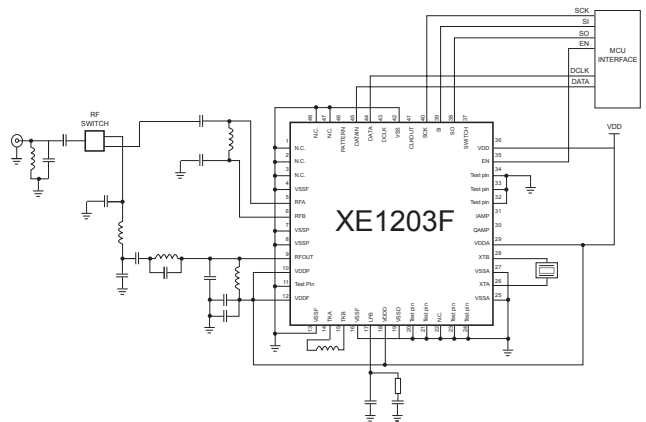
| Characteristics | | | | | | |
|--|-----|------|-----|------|-------------------|--|
| Parameter | Min | Typ | Max | Unit | Condition | |
| Operating Conditions | | | | | | |
| Operating temperature range | -40 | | +85 | °C | | |
| Current Consumption | | | | | | |
| Current consumption, sleep mode | | 200 | | nA | | |
| Current consumption R_x | | 14 | | mA | | |
| Current consumption T_x | | 33 | | mA | +5 dBm | |
| | | 62 | | mA | +15 dBm | |
| RF Characteristics | | | | | | |
| Frequency range (Frequencies 160 - 1000 MHz with external component changes) | 435 | | 435 | MHz | 500 Hz resolution | |
| | 863 | | 870 | MHz | | |
| | 902 | | 928 | MHz | | |
| T_x Output power (Programmable) | 0 | | 15 | dBm | | |
| R_x sensitivity | | -114 | | dBm | 4.8 kbits/s | |
| Conditions: Supply Voltage=3.3V, Temp=25°C, 2-level FSK, $f_c=915$ MHz, $\Delta f=55$ kHz, Bit rate=4.8 kbit/s, $BBW_{(DSB)}=200$ kHz, BER=0.1%. | | | | | | |

XE1203F Package Drawing



- NOTES:
- CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
 - COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.

Typical Application Circuit



Ordering Information

| Part Number | Temperature Range | Package |
|----------------------------|-------------------|---------|
| XE1203F1063TRLF | -40 °C to +85 °C | VQFN48 |
| Note: 2500 pcs Tape & Reel | | |

Visit our website to locate the most current product specifications, datasheets and contact information for your local Semtech Field Applications Engineer.



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XE1203F-PB-0208