

# SX7SSF

# LOW EMI SPREAD SPECTRUM CLOCK OSCILLATORS

## FEATURES

- Reduce EMI by >12 dBc without changing your board layout.
- Drop-in replacement.
- Operates with a 1.8V Supply Voltage.
- Applications: Medical devices, Wireless LAN, Hand-held ID readers, SDCs,...

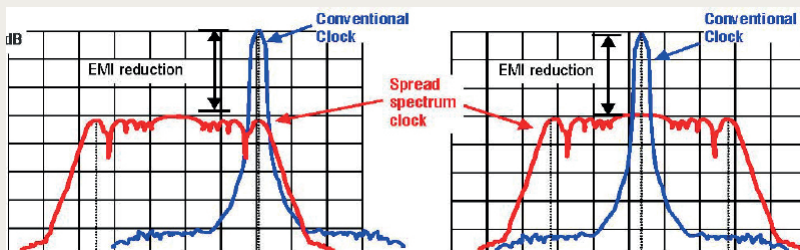
7.0 x 5.0 x 1.6 mm



| Item   | Specification  |   |                          |
|--|--|---|--------------------------|
| Frequency Range  | 12.5 MHz ~ 42.0 MHz  |   |                          |
| Spread Type ( see options )                                    | Total %  | <b>Down Spread (D)</b>                          | <b>Center Spread (C)</b> |
| Spread Percentage ( see options )                              | 0.5%   | -0.50%  | ±0.25%                   |
|  | 1%   | -1%   | ±0.5%                    |
|  | 2%   | -2%   | ±1.0%                    |
| EMI Reduction<br>(Reduction is applied to the entire spectrum) | -12 dB typical (0.5% Spread)<br>-16 dB typical (1% Spread)<br>-18 dB typical (2% Spread)               |   |                          |
| Modulation Carrier Frequency<br>(Dither rate)                  | 10 kHz min. ; 47 kHz max.<br>Frequency dependent   |   |                          |
| Output Logic   | CMOS   |   |                          |
| Overall Frequency Stability *                                  | ± 25 ppm ~ ± 100 ppm ( see options )   |   |                          |
| Operating Temperature Range                                    | 0 ~ +70°C commercial application ( see options )<br>-40 ~ +85°C industrial application ( see options ) |   |                          |
| Supply Voltage Vdd   | +1.8V ±0.15%   |   |                          |
| Supply Current Idd   | 2 mA ~ 5 mA  |   |                          |
| Output Level   | VOH ≥ 0.9 Vdd  | VOL ≤ 0.1 Vdd                                   |                          |
| Output Load  | 15 pF  |   |                          |
| Symmetry   | 40 / 60 %  |   |                          |
| Rise Time / Fall Time Fr/Ff                                    | 2.5 ns max.  |   |                          |
| Tri-state function   | pin #1 = high or open<br>pin #1 = low  | pin #3 = oscillation<br>pin #3 = high impedance |                          |
| Start-up Time  | 5 ms max.  |   |                          |
| Cycle-to-cycle jitter  | ±100 ps max.   |   |                          |
| Packing Unit   | 1000pcs / reel   |   |                          |
| Soldering Condition  | 260°C , 10 sec x2 max  |   |                          |

(\*) Includes initial tolerance @+25°C, stability over operating temperature, stability vs. load change, stability vs. supply change and one year aging

## MODULATION TYPES



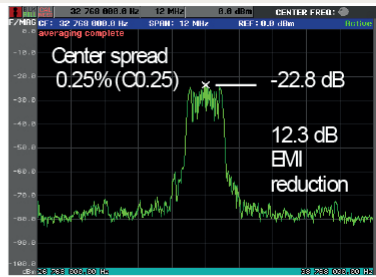
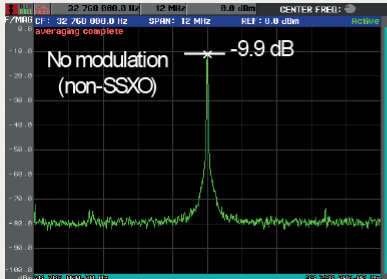
## OPTIONS & ORDERING INFORMATION

### SX7SSF

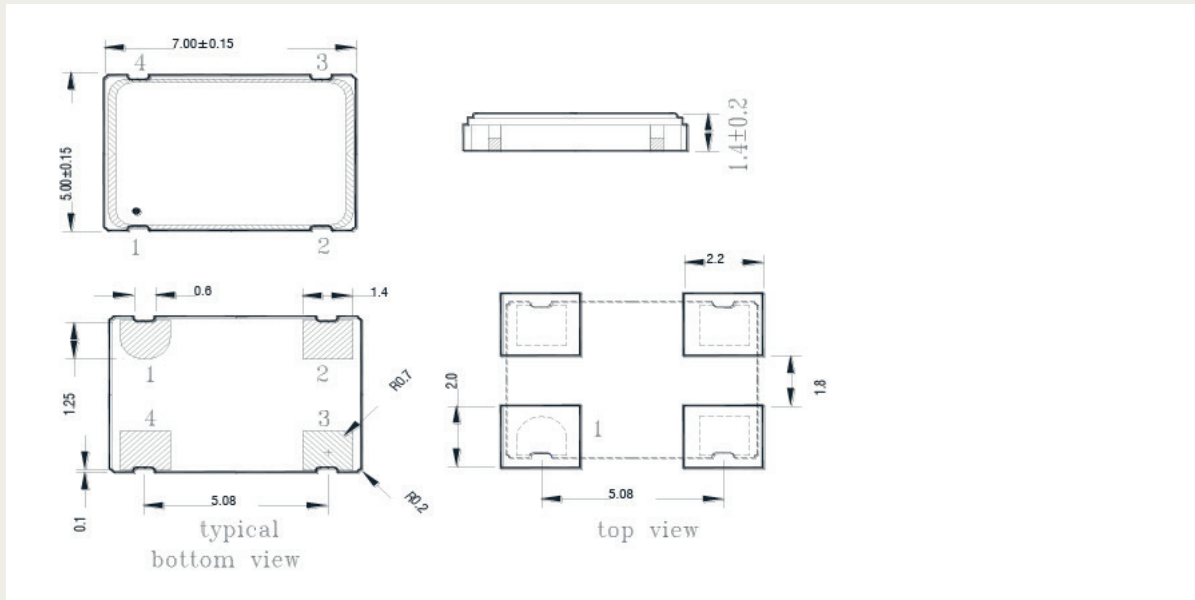
| Supply Voltage | Operating Temp.                    | Overall Stability                              | Tri-state Function | Spread Type   | Frequency in MHz                    |
|----------------|------------------------------------|--|--------------------|---|-------------------------------------|
| 18 = +1.8V     | E = 0° / +70°C<br>K = -40° / +85°C | 25 = ±25 ppm<br>50 = ±50 ppm<br>100 = ±100 ppm | E = Tri-state      | D05 = Down Spread 0.5%<br>D10 = Down Spread 1%<br>D20 = Down Spread 2%<br>C025 = Center Spread 0.5%<br>C05 = Center Spread 1%<br>C10 = Center Spread 2% | Please specify the frequency in MHz |

If over-clocking is a problem to your system, please choose down spread

Example: 32.768 MHz at No Modulation and at Center Spread 0.25 % : 12.3 dBc EMI reduction



# OUTLINE DIMENSIONS



| Pin Connections | #1 : E/D | #2 : GND | #3 : Output | #4 : Vdd |
|-----------------|----------|----------|-------------|----------|
|-----------------|----------|----------|-------------|----------|