





Actual Size $= 5 \times 7$ mm



Product Features

- 5V CMOS/TTL compatible logic levels
- Pin-compatible with standard 5x7mm packages
- Designed for standard reflow and washing techniques
- Output Tri-state function
- Pb-free and RoHS/Green compliant

Product Description

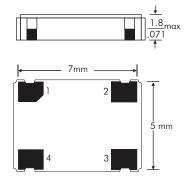
The FN Series is a 5V crystal clock oscillator that achieves superb jitter and stability over a broad range of operating conditions and frequencies. The output clock signal, generated internally with a non-PLL oscillator design, is compatible with CMOS/TTL logic levels. The device, available on tape and reel, is contained in a 5x7mm surface-mount ceramic package.

Applications

The FN Series is an ideal reference clock for applications requiring low jitter or tight stability, including:

- Ethernet
- FibreChannel
- Serial Attached SCSI (SAS)
- Server & Storage platforms
- SONET/SDH linecards
- T1/E1, T3/E3 linecards
- DSLAM
- 802.11a/b/g WiFi

Packaging Outline



Pin Functions

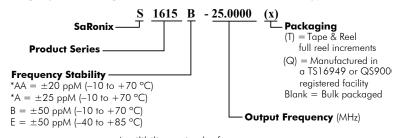
Pin	Function			
1	OE Function			
2	Ground			
3	Clock Output			
4	V_{DD}			

New Part Number Example

FN 750 0001 A = Product Family B = Frequency Code C = Specification Code

Note: After July 1, 2007, a Saronix - eCera part number following the above format will be assigned upon confirmation of exact customer requirements.

Legacy Ordering Information (for reference only)



Availibility varies by frequency.







FN Series Crystal Clock Oscillator (XO) Legacy \$1615 Series 7.0 x 5.0mm

Electrical Performance

	Parameter	Min.	Тур.	Max.	Units	Notes
Output freque	ency	1.544		106.25	MHz	As specified
Supply voltage	e	+4.5	+5.0	+5.5	V	
				27	mA	1.544 to 32 MHz
Supply curren	nt, output enabled			50		>32 to 50 MHz
				65		>50 to 106.25 MHz
Frequency sta	bility			±20 to ±50	ppM	See Note 1 below
Operating ten	nperature	-40		+85	°C	As specified
Output logic () VOI			10% V _{DD}	V	HCMOS
Output logic (), VOL			+0.4	V	TTL
Output logic 1	I VOU	90% V _{DD}			V	HCMOS
Output logic 1	i, von	+3.9			V	TTL
				50	pF	HCMOS up to <50 MHz
Output load				30	pF	HCMOS 50 to <70 MHz
Output load				15	pF	HCMOS 70 to 106.25 MHz
				10	TTL	TTL
	1.544 to 80 MHz	45		55	%	-40 to +85°C measured 50%VDD
Duty cycle	>80 to 106.25 MHz	45		55	%	-10 to +70°C measured 50%VDD
Duty cycle	>80 to 100.25 MHZ	40		60	%	-40 to +85°C measured 50%VDD
	1.544 to 106.25 MHz	40		60	%	-40 to +85°C measured 1.5V
Rise and fall	1.544 up to <50 MHz			8	ns	
	50 to <70 MHz			5	ns	measured 20/80% of waveform
	70 to 106.25 MHz			3	ns	
time	1.544 to <70 MHz			5	ns	measured 0.4V to 2.4V
	70 to 106.25 MHz			2	ns	Tilleasured 0.4V to 2.4V

Output Enable / Disable Function

Parameter	Min.	Тур.	Max.	Units	Notes
Input Voltage (pin 1), Output Enable	2.2			V	or open
Input voltage (pin 1), Output Disable (low power standby)			0.8	V	Output is Hi-Z
Internal pullup resistance	50			kΩ	
Output disable delay			100	ns	
Output enable delay			100	ns	

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As specified. Stability includes all combinations of operating temperature, load changes, rated input (supply) voltage changes, initial calibration tolerance (25°C), aging (1 year at 25°C average effective ambient temperature), shock and vibration.

For specifications other than those listed, please contact sales.

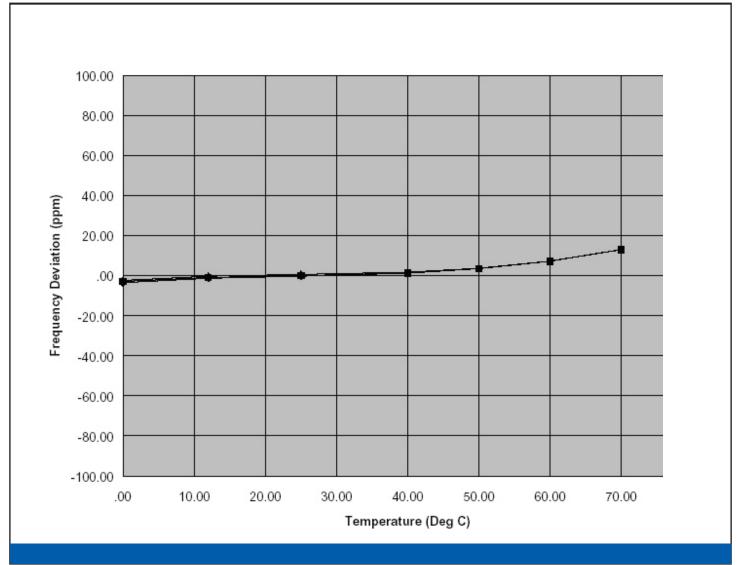


FN Series Crystal Clock Oscillator (XO)

Legacy \$1615 Series

7.0 x 5.0mm

Typical Frequency Stability







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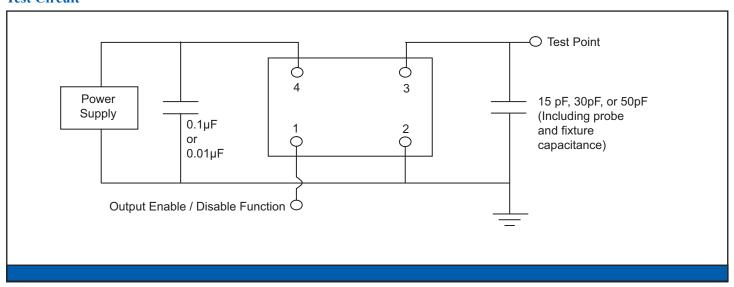
Legacy \$1615 Series

7.0 x 5.0mm

Absolute Maximum Ratings

Parameter	Min.	Тур.	Max.	Units	Notes
Storage temperature	-55		+125	°C	

Test Circuit



Reliability Test Ratings

This product is rated to meet the following test conditions:

Туре	Parameter	Test Condition
Mechanical	Shock	MIL-STD-883, Method 2002, Condition B
Mechanical	Solderability	JESD22-B102-D Method 2 (Preconditioning E)
Mechanical	Terminal strength	MIL-STD-883, Method 2004, Condition D
Mechanical	Gross leak	MIL-STD-883, Method 1014, Condition C
Mechanical	Fine leak	MIL-STD-883, Method 1014, Condition A2 ($R_1 = 2x10^{-8}$ atm cc/s)
Mechanical	Solvent resistance	MIL-STD-202, Method 215
Environmental	Thermal shock	MIL-STD-883, Method 1011, Condition A
Environmental	Moisture resistance	MIL-STD-883, Method 1004
Environmental	Vibration	MIL-STD-883, Method 2007, Condition A
Environmental	Resistance to soldering heat	J-STD-020C Table 5-2 Pb-free devices (2 cycles max)

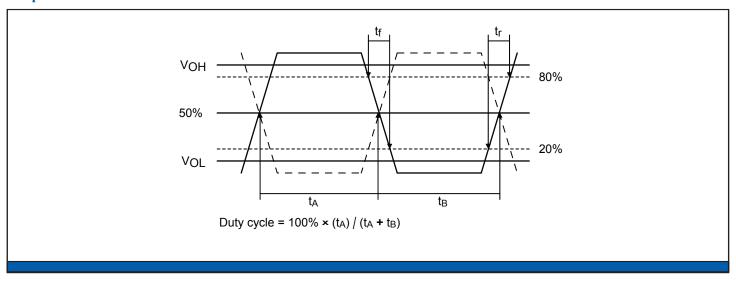




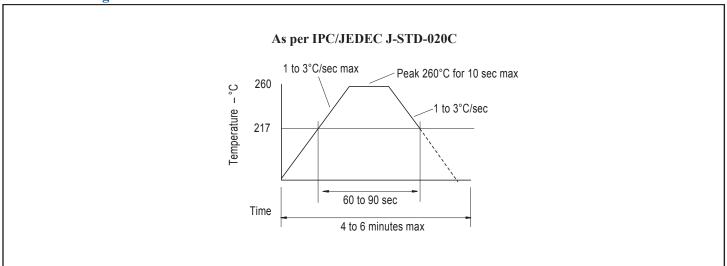


FN Series Crystal Clock Oscillator (XO) Legacy \$1615 Series 7.0 x 5.0mm

Output Waveform



Reflow Soldering Profile

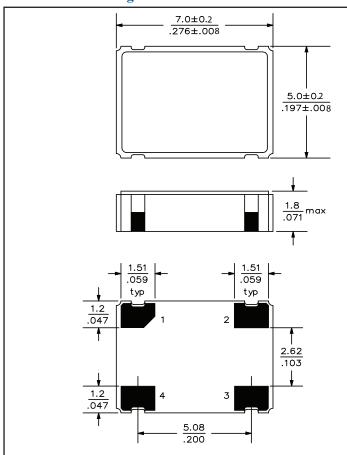




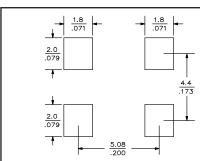


FN Series Crystal Clock Oscillator (XO) Legacy \$1615 Series 7.0 x 5.0mm

Mechanical Drawings



Recommended Land Pattern*



*External high-frequency power decoupling is recommended.(see test circuit for minimum recommendation). To ensure optimal performance, do not route traces beneath the package.

Scale: None. Dimensions are in mm/inches.