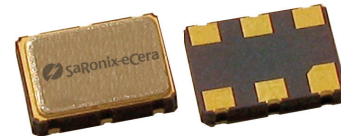


3.3V CMOS Ultra-Low Jitter Voltage Control VCXO



Actual Size = 5 x 7mm



Product Features

- Cost-effective design
- LVCMOS compatible output
- Commercial and industrial operation
- ± 50 ppm stability (or as specified)
- ± 50 to ± 100 ppm absolute (net) pull range
- RoHS Compliant

Product Description

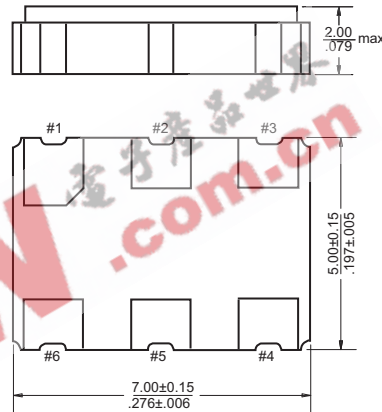
The YN is a voltage controlled crystal oscillator with wide pullability over a broad range of operating conditions and frequencies. The device is constructed with a hermetically sealed, quartz crystal resonator and low noise clock IC. The device, available on tape and reel, is contained in a 5x7mm ceramic package.

Applications

The YN Series VCXO is an ideal component in phase locked loop circuits that perform clock smoothing, clock/data recovery, or frequency translation and card synchronization functions, such as:

- SD/HD Video decoding
- SONET/SDH timing control and line cards
- T3/E3 Platforms
- Satellite and microwave communications
- Wireless base stations
- xDSL and DSLAM
- VoIP

Packaging Outline



Pin Functions

Pad	Function
1	Control voltage
2	Output Enable/Disable
3	Ground
4	Output
5	No Connect
6	Supply voltage

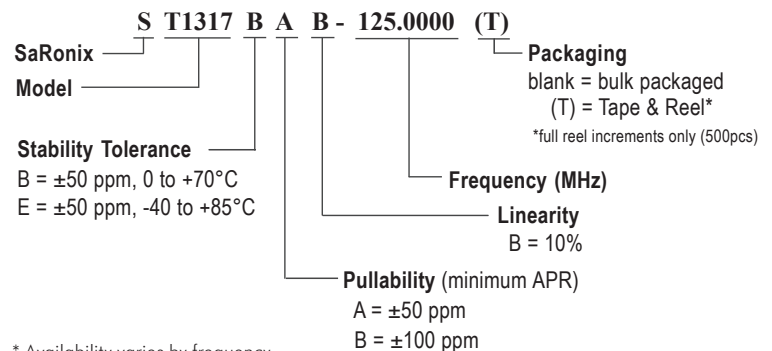
Dimensions are in mm/inches.

New Part Number Example

YN C50 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)



* Availability varies by frequency.

3.3V CMOS Ultra Low Jitter Voltage Control (VCXO)



YN Series Crystal Oscillator
Legacy ST1317 Series
7.0x5.0mm

Electrical Performance

Parameter	Min.	Typ.	Max.	Units	Notes
Output frequency (F_N)	32.0		125.0	MHz	As specified
Supply voltage	+2.97	+3.3	+3.63	V	
Supply current			35	mA	
Frequency stability			±50	ppM	See #1 and #2 below
Operating temperature	-40		+85	°C	As specified
Output logic 0, V_{OL}			10% V_{DD}	V	Capacitive load
Output logic 0, V_{OL}			20% V_{DD}	V	AC coupled load
Output logic 1, V_{OH}	90% V_{DD}			V	Capacitive load
Output logic 1, V_{OH}	80% V_{DD}			V	AC coupled load
Output load			30	pF	Up to 80 MHz
Output load			95	Ω AC	Up to 125 MHz
Duty cycle	45		55	%	measured 50% V_{DD} (0 to +70°C)
Duty cycle	40		60	%	measured 50% V_{DD} (-40 to +85°C)
Rise and fall time			4	ns	measured 20/80% V_{DD}
Jitter, total			100	ps pk-pk	
Jitter, total			20	ps RMS	
Phase noise		-95		dBc/Hz	100 Hz offset
Phase noise		-110		dBc/Hz	1 kHz offset
Phase noise		-100		dBc/Hz	10 kHz offset

Notes:

- As specified. Stability includes all combinations of operating temperature, load changes, rated input (supply) voltage changes, shock and vibration, with control voltage held at center.
- ±12 ppM max due to aging (10 years at 40°C average ambient operating temperature).

Frequency Modulation Function

Parameter	Min.	Typ.	Max.	Units	Notes
Absolute pull range (APR)	±50 to ±100			ppM	See #1 below
Control voltage range	+0.3		+3.0	V_{DC}	As rated
Center control voltage		+1.65		V	For RMT center frequency
Monotonic linearity			10	%	Positive transfer slope
Input impedance	50			k Ω	Control voltage pin
Modulation bandwidth	50			kHz	-3dB

Notes:

- As specified. APR is relative to the nominal output frequency F_N ; APR is inclusive (net) of frequency deviation due to stability.

3.3V CMOS Ultra Low Jitter Voltage Control (VCXO)



YN Series Crystal Oscillator
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7.0x5.0mm

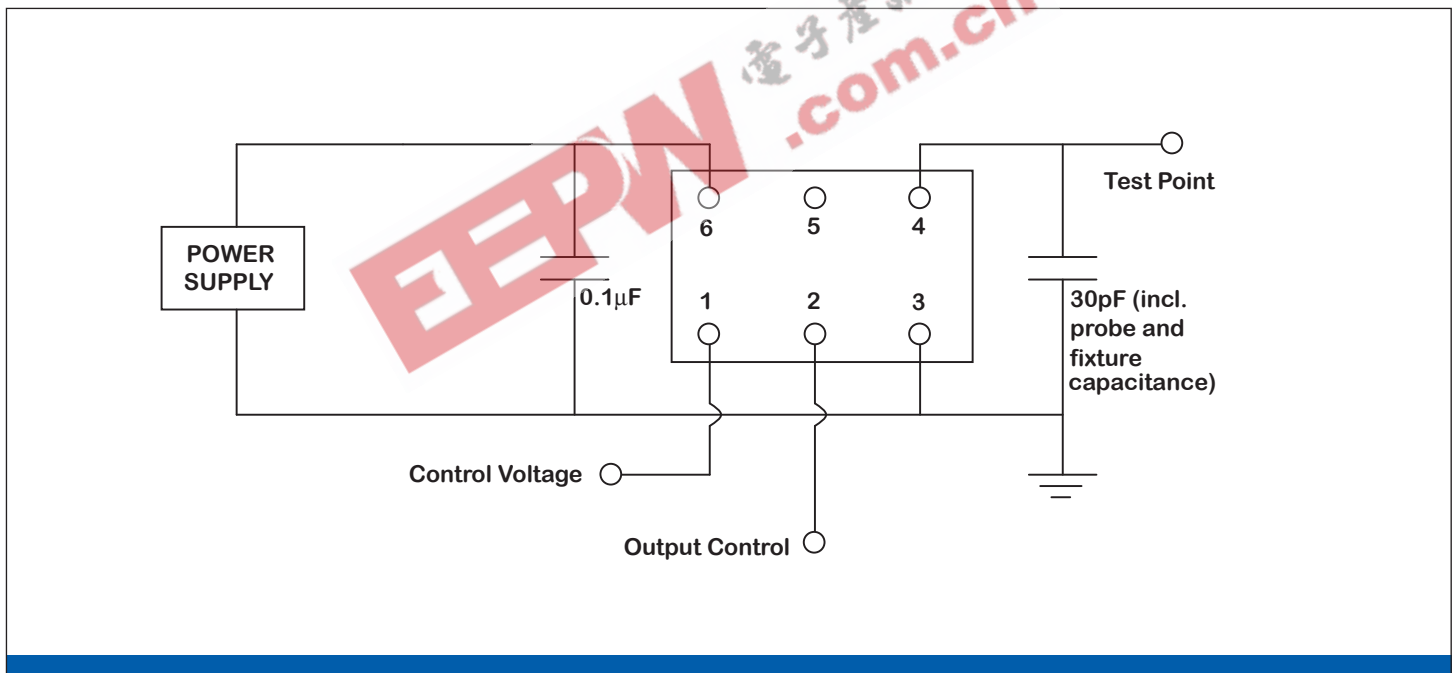
Output Enable / Disable Function

Parameter	Min.	Typ.	Max.	Units	Notes
Input voltage, output enable	3.0			V	or open
Input voltage, output high impedance			0.3	V	Output is high impedance

Absolute Maximum Ratings

Parameter	Min.	Typ.	Max.	Units	Notes
Storage temperature	-55		+125	°C	
Control voltage range	-0.5		V _{DD} +0.5	V	

Test Circuit

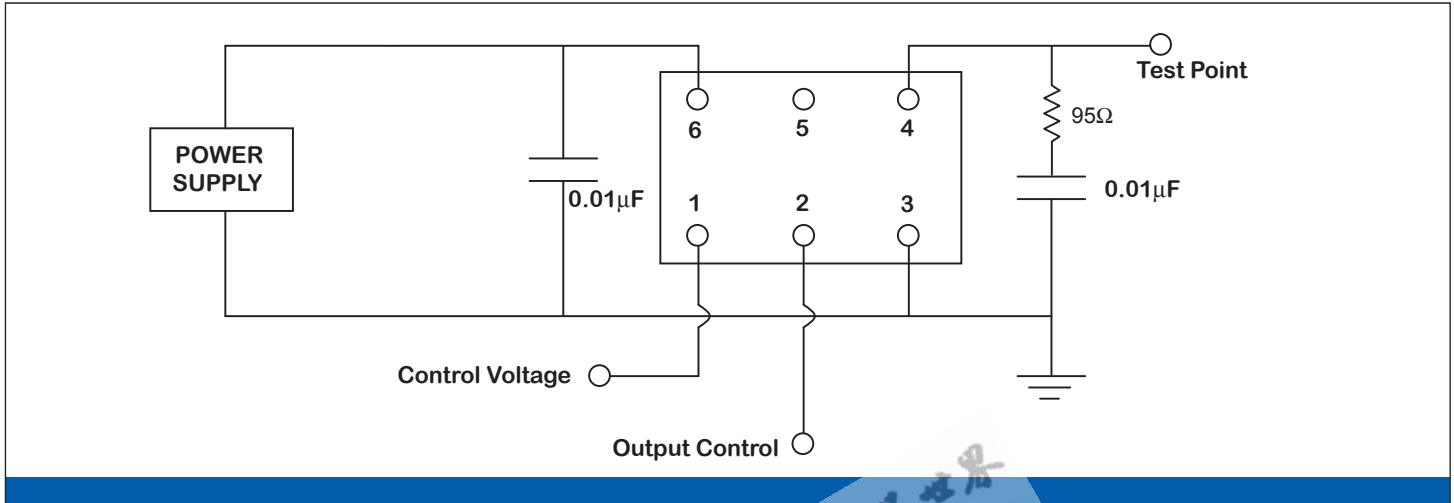


3.3V CMOS Ultra Low Jitter Voltage Control (VCXO)

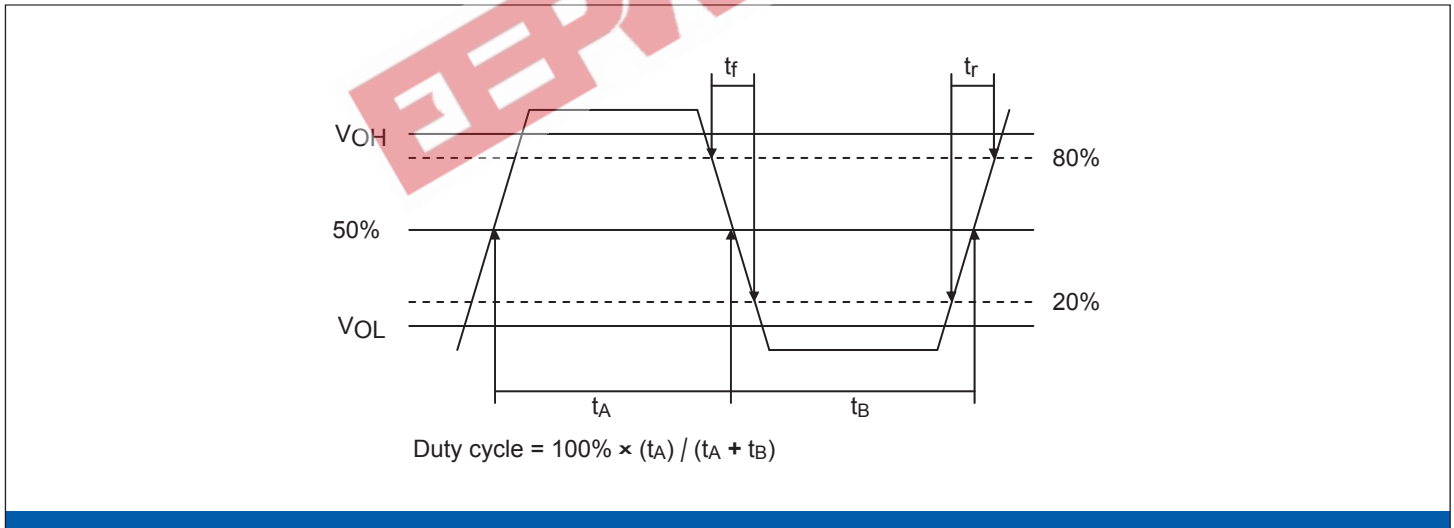


YN Series Crystal Oscillator
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7.0x5.0mm

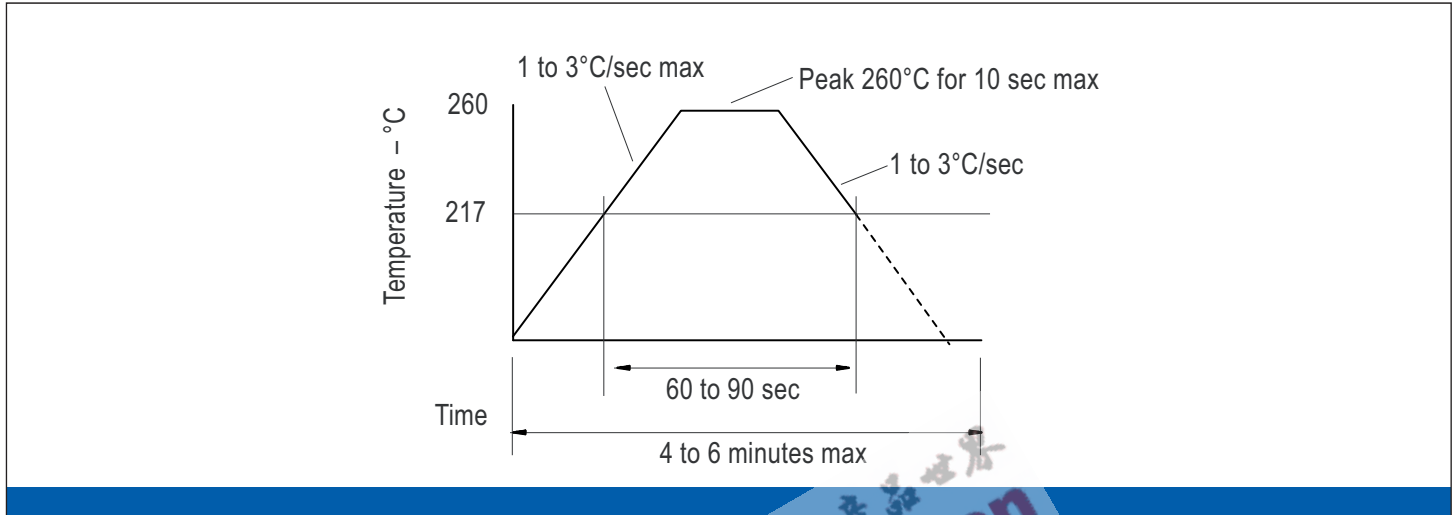
Test Circuit (AC Coupled Load)



Output Waveform



Solder Reflow Guide



Reliability Test Ratings

This product is rated to meet the following test conditions:

Type	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	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)

3.3V CMOS Ultra Low Jitter Voltage Control (VCXO)

SaRonix-eCera™

**YN Series Crystal Oscillator
Legacy ST1317 Series
7.0x5.0mm**

Mechanical Drawings

