Ultra-Low Phase Noise OCXO

AOCJY7TQ

ESD Sensitive

RoHS/RoHS II Compliant

25.5 x 25.5 x 12.7mm

FEATURES:

- Exceptional Close to the carrier Maximum Phase Noise of -155dBc/Hz @ 1kHz & -170dBc/Hz @ 10kHz offset from 100.0 MHz Carrier
- SC-Cut, High "Q" resonator based design
- 100.0MHz carrier frequency
- Excellent Frequency Stability of ±50.0 ppb over the operating temperature range of -40ºC to +70ºC
- Tuned Sinewave output into a 50Ω load
- Industry Standard, 25.5 x 25.5 x 12.7mm RoHS compliant & Pb free package

APPLICATIONS:

- COTS Military & Industrial Radios & Timing Circuits
- Cellular Infrastructure
- Radar Systems
- Test & Measurement Equipment
- GPS Tracking with precision hold-over accuracy
- WiMax / WLAN
- Precision primary frequency reference clocks

STANDARD SPECIFICATIONS:

Maximum Rating

Parameters	Rating
Storage Temperature Range	-55 to +125°C
Supply Voltage	-0.3 to 15V
Control Voltage	0 to 5V
ESD, HBM/CDM/MM	2kV/1kV/200V

Parameters		Minimum	Typical	Maximum	Units	Notes
Frequency (Fc)			100.000		MHz	
Initial Frequency Tolerance (@+25°C) at shipping				±300	ppb	
Warm-up Time (@+25°C)				5	minutes	with accuracy of ±100 ppb
Frequency Stability Options (Ref. to Frequency @+25°C)						
-40°C to +70°C				±50	ppb	Option "5"
-40°C to +70°C				±100	ppb	Option "1"
-40°C to +85°C				±200	ppb	Option "2"
Frequency Stability vs. Supply Voltage Change (Vdd±5%)				±10	ppb	
Frequency Stability vs. Load Change (Load±5%)				±10	ppb	
Aging per Day (after 30 days of operation)				±5	ppb	
Aging per Year (after 30 days of operation)				±500	ppb	
Supply Voltage (Vdd)		+11.4	+12.0	+12.6	V	
Power Consumption	During Warming-up			4.5	W	
	Steady@+25°C & still air			1.5	W	
Control Port (*Applicable for Voltage Controlled version only*)						
Control Voltage Range (Vc)		+0	+2.5	+5	V	
Center Control Voltage (Vc)			+2.5		V	To be with-in ±300 ppb of Fc @ 25°C
Frequency Tuning Range			±1000		ppb	
Tuning Slope			Positive			
Linearity				±10	%	
Port Impedance		50			kΩ	

2 Faraday, Suite# B | Irvine | CA 92618 **Revised: 07.21.15**
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STANDARD SPECIFICATIONS:

(Continued)

Parameters	Minimum	Typical	Maximum	Unites	Notes
Phase Noise* (100MHz carrier frequency @25°C):		<-95	-93	dBc/Hz	Offset @10Hz
		<-126	-125		Offset @100Hz
		<-161	-155		Offset @1kHz
		-171	-170		Offset @10kHz
		-173	-170		Offset @100kHz
		-174	-170		Offset @1MHz
		-173	-170		Offset @10MHz
		-174	-170		Offset @20MHz
RMS Jitter (12kHz to 20MHz)		20	40	fs	
Sine Wave Output					
Output Level	8			dBm	
Harmonics			-30	dBc	
Spurious			-70	dBc	
Load		50		Ω	

* Close to carrier phase noise is a few dB better in fixed clock configuration than the voltage controlled configuration

PART IDENTIFICATION:

AOCJY7TQ -▢- 100.000MHz -▢

Fixed Clock or Voltage Controlled
X = Fixed Clock
V = Voltage Controlled

Freq. Stability over Operating Temp.
5: ±50ppb
1: ±100ppb
2: ±200ppb

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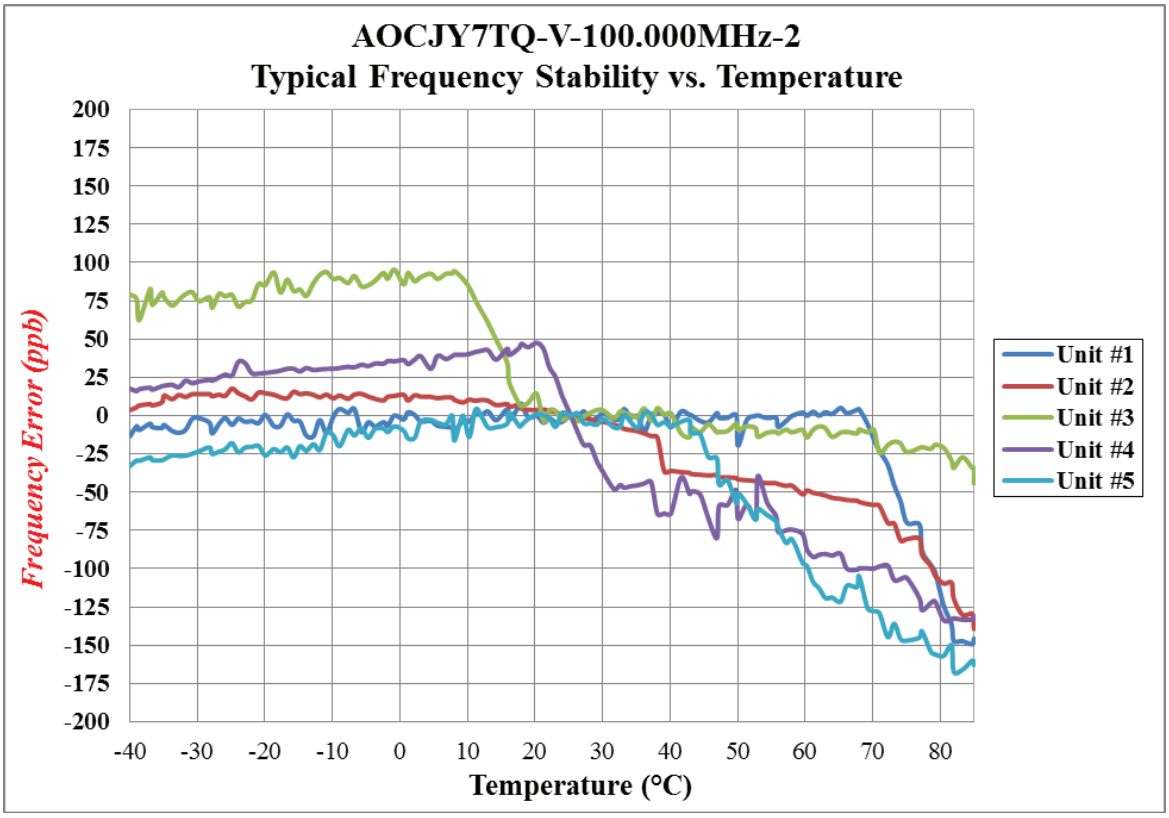
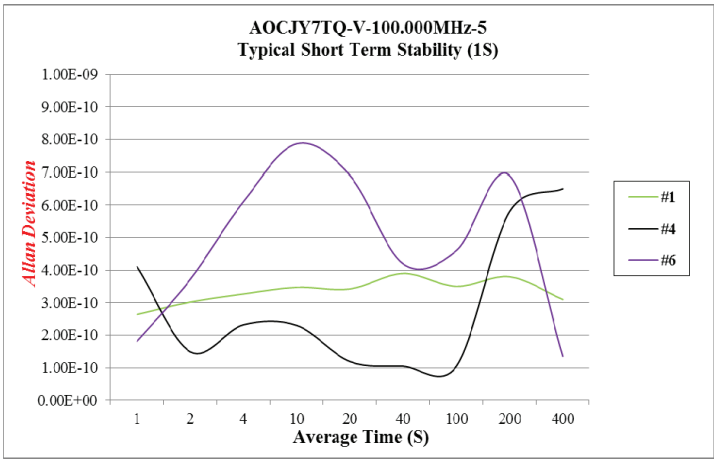
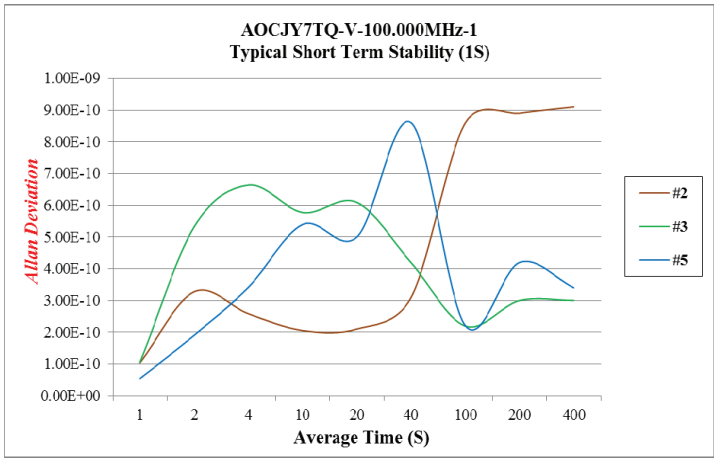
TYPICAL FREQUENCY STABILITY VS. TEMPERATURE



TYPICAL SHORT TERM STABILITY





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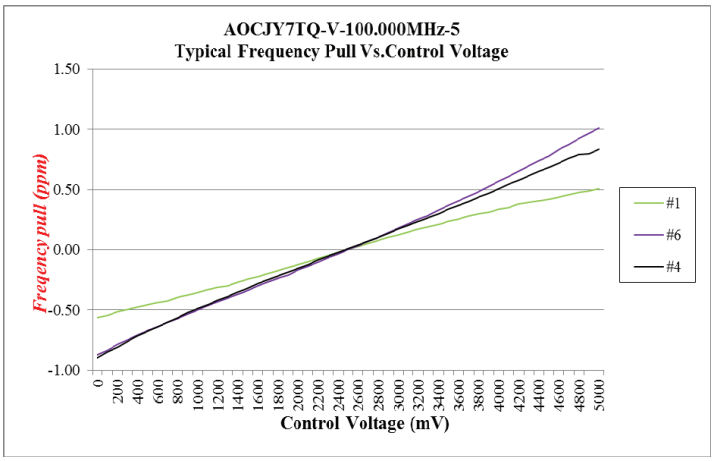
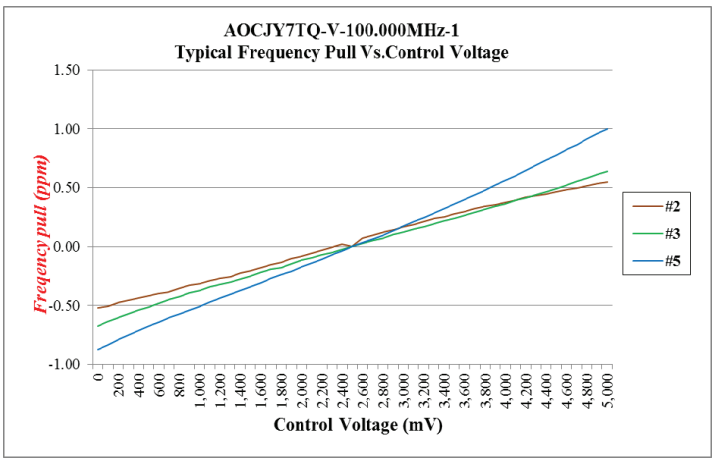
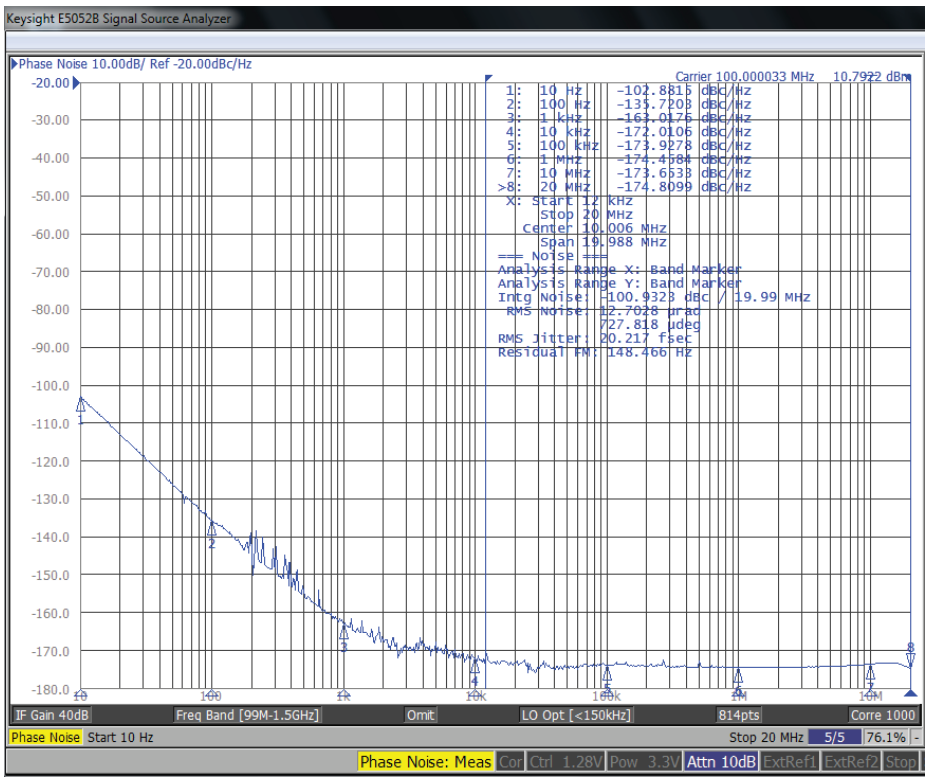
TYPICAL FREQUENCY PULL VS. CONTROL VOLTAGE





TYPICAL PHASE NOISE

100.00 MHz Carrier



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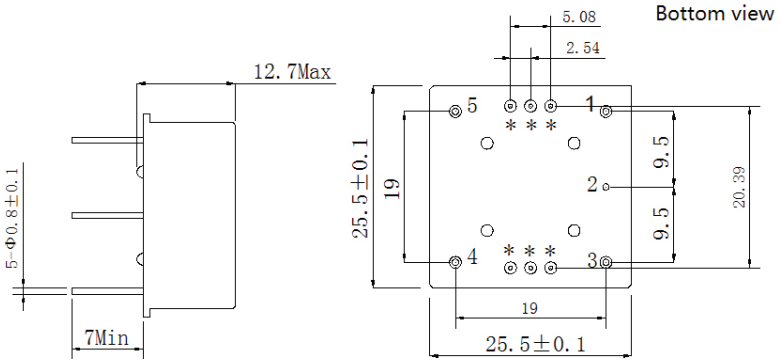
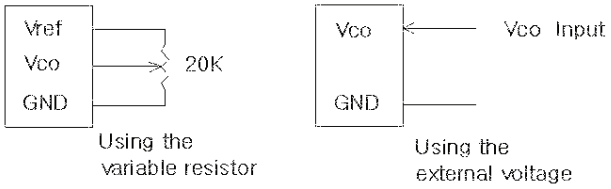
OUTLINE DIMENSION:



Reference Connection of Voltage Control Circuit



Pin	Function
1	RF Output
2	GND, Case
3	Vc (see Note 2 below)
4	Vref (See Note 3 below)
5	Vdd

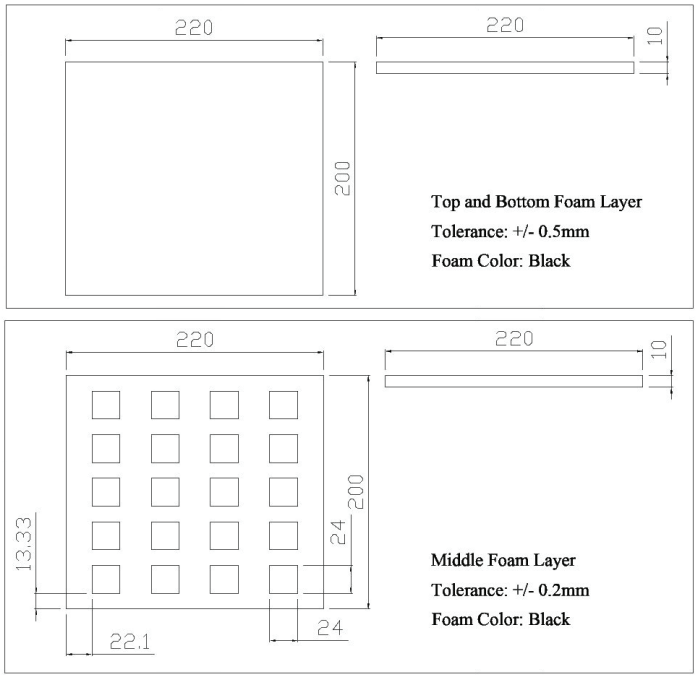
Notes:

1. **The pins with "*" are for factory testing purpose.**
2. **Please leave pin 3 not connected if Vc is not used.**
3. **Please leave pin 4 not connected if Vref is not used.**

Dimensions: mm

TAPE & REEL:

20pcs/ ESD Foam Tray



Dimensions: mm

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