AST3TQ53

Moisture Sensitivity Level (MSL) – 3

FEATURES:

- Standard available frequencies: 10.00, 12.80, 16.384, 19.20, 19.44, 20.00, 24.576, 25.00, 26.00, 30.72, 40.00 MHz
- LVCMOS Output or Clippled Sine Wave output
- Frequency stabilities to include ±50ppb, ±100ppb and ±280ppb over -40°C to +85°C operating temperature range
- Excellent Phase Noise, Harmonics and Spurious content
- Typical rms jitter of 400fs @ 40MHz carrier & 1.0ps @ 10MHz carrier over 12kHz to 20MHz BW

> STANDARD SPECIFICATIONS:

Maximum Rating

0	
Parameters	Rating
Storage Temperature Range	-55 to +125°C
Supply Voltage	-0.5 to 6V
Control Voltage	0 to 3V
ESD, HBM/CDM/MM	4kV/2kV/200V

ESD Sensitive

Key Electrical Specifications

Parameters	Minimum	Typical	Maximum	Units	Notes				
Frequency Range	10		40	MHz					
Standard Frequencies	10.00, 12.80, 16.384, 19.20, 19.44, 20.00, 24.576, 25.00, 26.00, 30.72, 40.00			MHz					
Initial Frequency Tolerance (@+25°C) at shipping			±0.5	ppm	Relative to carrier				
Frequency Stability Options (Ref. to Fi	requency @+25%	C)							
-40°C to +85°C			±50	ppb	Option "5"				
-40°C to +85°C			±100	ppb	Option "1"				
-40°C to +85°C			±280	ppb	Option "2"				
Frequency Stability vs. Supply Voltage Change (Vdd±5%)			±100	ppb					
Frequency Stability vs. Load Change (Load±5%)			±200	ppb					
Aging (first year @+25°C)			±1.0	ppm					
Aging (20 years @+25°C)		±3.0	±4.6	ppm					
Supply Voltage (Vdd)	+3.135	+3.3	+3.465	V					
Supply Current (Icc)			6.0	mA	No load				
Control Port (Applicable for VCTCXO	only)			•	•				
Control Voltage Range (Vc)	+0.5	+1.5	+2.5	V					
Center Control Voltage (Vc)		+1.5		V	To be with-in ±500 ppb of Fc @ 25°C (at shipping)				
Frequency Tuning Range	±5	±7	<±13	ppm					
Tuning Slope		Positive							
Linearity			±1	%					
Port Impedance	100			kΩ					

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(Pb) RoHS/RoHS II Compliant

> APPLICATIONS:

- COTS Military Radios & other Communication Hardware
- WiMax,
- LTE, BTS
- CATV, LAN, LMDS
- GPS Tracking with Hold-Over accuracy
- Test & Measurement Equipment
- Point-to-Point communication networks

5.0 x 3.2 x 2.0mm



ESD Sensitive

Pb RoHS/RoHS II Compliant

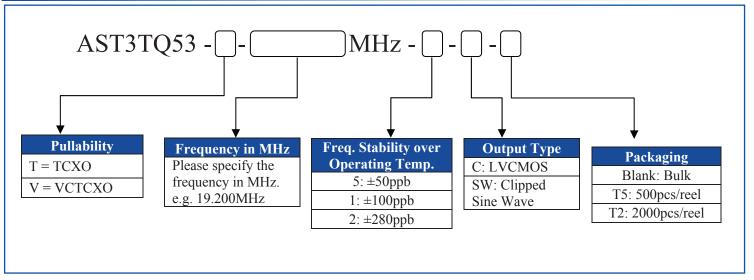


STANDARD SPECIFICATIONS:

(Continued)

Parameters	Minimum	Typical	Maximum	Unites	Notes
Phase Noise (10MHz carrier frequency @25°C):			-95	dBc/Hz	Offset @10Hz
			-120		Offset @100Hz
			-140		Offset @1kHz
			-145		Offset @10kHz
			-150		Offset @100kHz
RMS Jitter (@12kHz~5MHz BW)	0.4		1.3	ps	Carrier Dependent
Clipped Sine Wave	•	-	-	-	
Output Level	0.8			Vp-p	
Output Load		10kΩ//10pF	-		
LVCMOS Output (Square Wave)	·			•	
V _{OH}	2.4			V	Output Load=15pF
V _{OL}			0.4	V	Output Load=15pF
Output Load			15	pF	
Duty Cycle	45		55	%	@(V _{OH} - V _{OL})/2
Rise/Fall Time			6	ns	Output Load=15pF

PART IDENTIFICATION:









ESD Sensitive

(Pb) RoHS/RoHS II Compliant

³*S*³*C*

> TYPICAL FREQUENCY STABILITY VS. TEMPERATURE

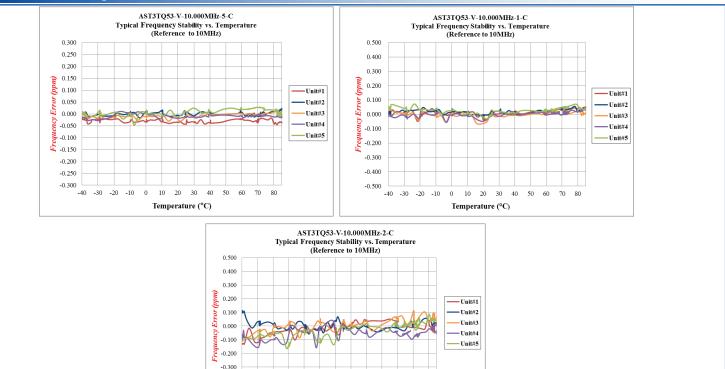
-0.400

-40

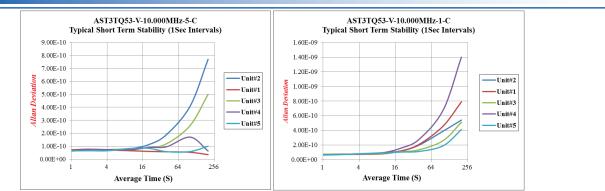
-30 -20 -10

0 10 20 30 40

Temperature (°C)



TYPICAL SHORT TERM STABILITY

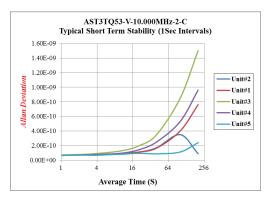


50

60

70

80



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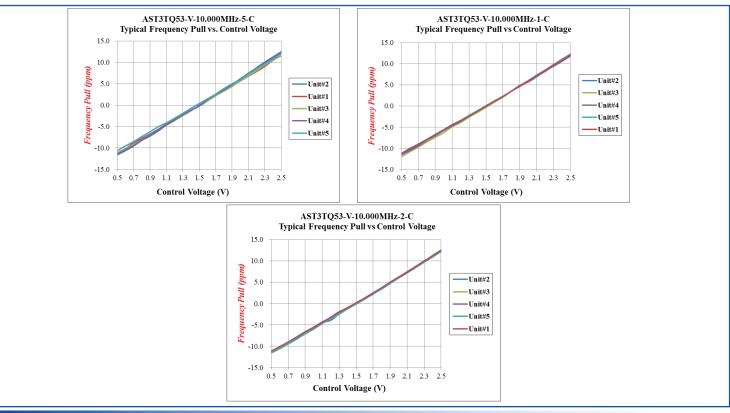




(Pb) RoHS/RoHS II Compliant

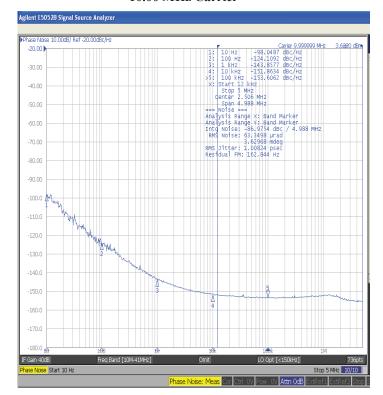


TYPICAL FREQUENCY PULL VS. CONTROL VOLTAGE



TYPICAL PHASE NOISE





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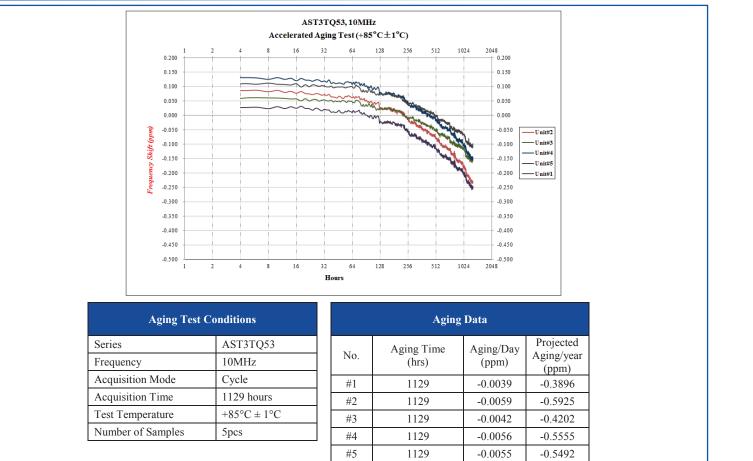


ESD Sensitive

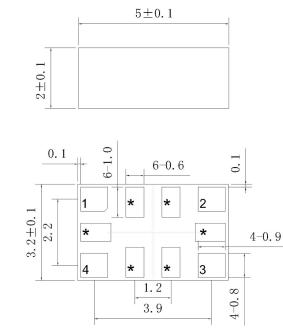


⁴*s*₅₅ 5.0 x 3.2 x 2.0mm

TYPICAL AGING:



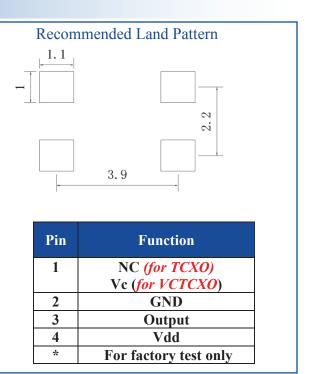
OUTLINE DIMENSION:



Dimensions: mm







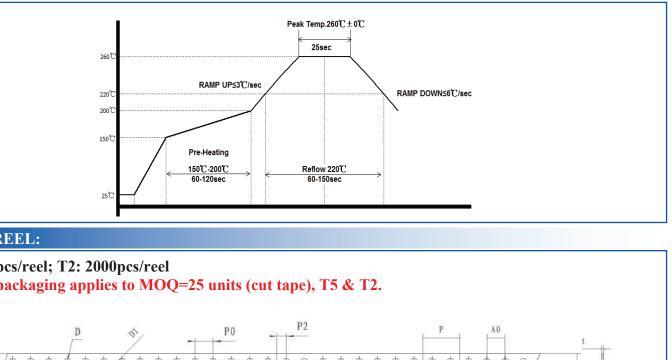
AST3TQ53

🚵 ESD Sensitive

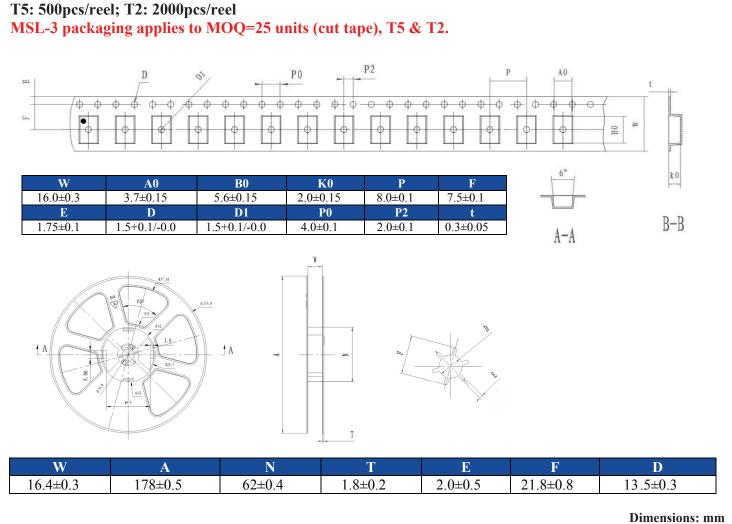




REFLOW PROFILE:







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