



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Precision SMD TCXO/VCTCXO



7.0 x 5.0 x 1.9mm

AST3TQ-28



ESD Sensitive



RoHS/RoHS II Compliant

Moisture Sensitivity Level (MSL) – 3

➤ **FEATURES:**

- Standard available frequencies: 10.00, 12.80, 15.36, 16.32, 16.384, 19.20, 19.44, 20.00, 25.00, 26.00, 30.72 & 40.00 MHz
- Standard LVC MOS Output
- Frequency stability of ± 280 ppb (± 0.28 ppm) over -40°C to $+85^{\circ}\text{C}$
- Excellent Phase Noise, Harmonics & Spurious content
- Typical rms jitter of 400fs @ 40MHz carrier & 1.0ps @ 10MHz carrier over 12kHz to 20MHz BW

➤ **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

➤ **STANDARD SPECIFICATIONS:**

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

Parameters	Minimum	Typical	Maximum	Units	Notes
Frequency Range	10		40	MHz	
Standard Frequencies:	10.00, 12.80, 15.36, 16.32, 16.384, 19.20, 19.44, 20.00, 25.00, 26.00, 30.72 and 40.00			MHz	
Initial Frequency Tolerance (@+25°C) at shipping			± 0.3	ppm	Relative to carrier
Frequency Stability Options					
-40°C to +85°C			± 280	ppb	
Frequency Stability vs. Supply Voltage Change (V _{dd} ±5%):			± 100	ppb	
Frequency Stability vs. Load Change (Load±5%):			± 200	ppb	
Supply Voltage (V _{dd}):	+3.135	+3.3	+3.465	V	
Aging (first year @+25°C):			± 1.0	ppm	
Aging (20 years @+25°C):		± 3.0	± 4.6	ppm	
Supply Current (I _{cc}) (into 15pF load):		3.0	4.0	mA	@10MHz carrier
			5.5		7.0
LVC MOS Output (Square wave)					
V _{OH} :	2.4			V	Load=15pF
V _{OL} :			0.4	V	Load=15pF
Load:			15	pF	
Duty Cycle:	45		55	%	@(V _{OH} - V _{OL})/2
Rise/Fall Time:			6	ns	Load=15pF
RMS Jitter (12kHz to 20MHz BW)	0.4		1.3	ps	Carrier dependent
Control Port					Applicable for VCTCXO only
Voltage Range (V _c)	0.50		+2.50	V	
Frequency Pull	± 7.00	± 10.00	± 12.00	ppm	(V _c = 1.5V±1.0V)
Center Control Voltage (V _c)		+1.50			To be with-in ± 500 ppb of F _c @ 25°C
Port Impedance	100			kΩ	
Phase Noise (10MHz carrier frequency @25°C):			-95	dBc/Hz	Offset @10Hz
			-120		Offset @100Hz
			-140		Offset @1kHz
			-145		Offset @10kHz
			-150		Offset @100kHz

ABRACON IS
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CERTIFIED



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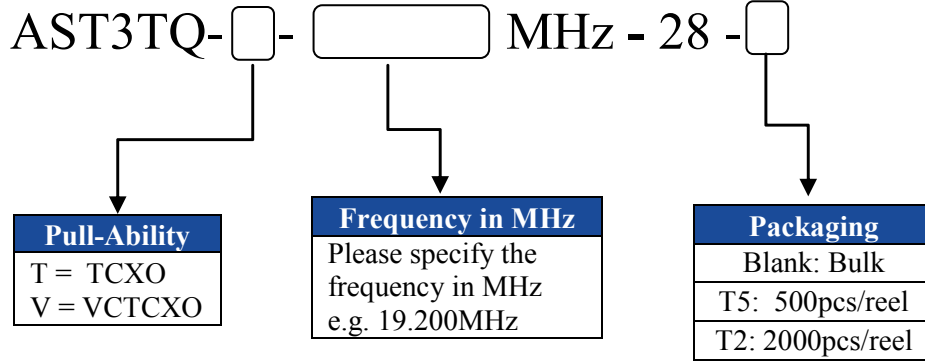


7.0 x 5.0 x 1.9mm

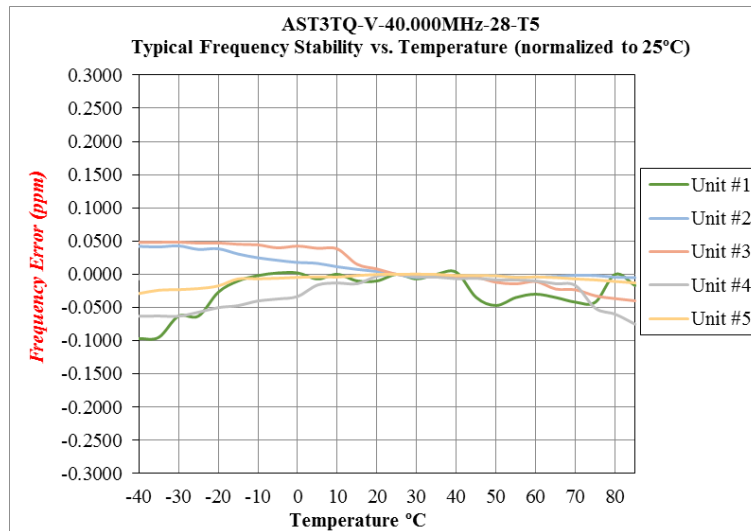
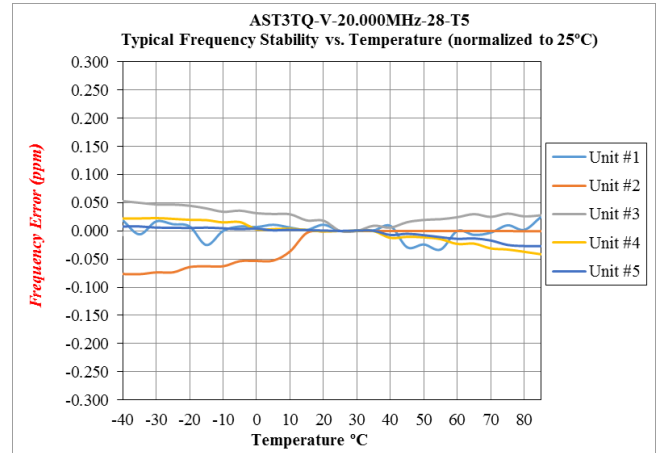
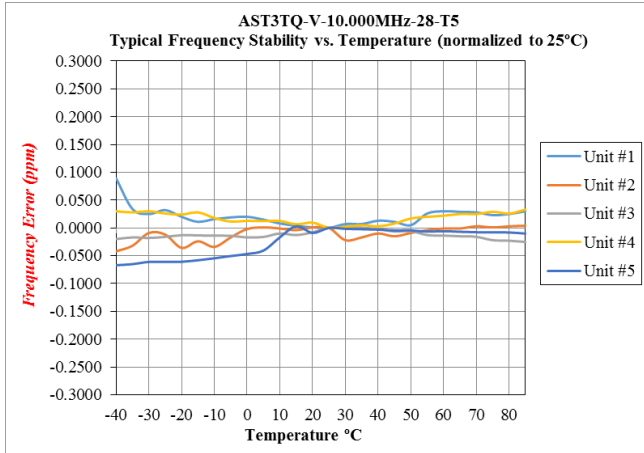
AST3TQ-28

RoHS/RoHS II Compliant

OPTIONS & PART IDENTIFICATION: (left blank if standard)



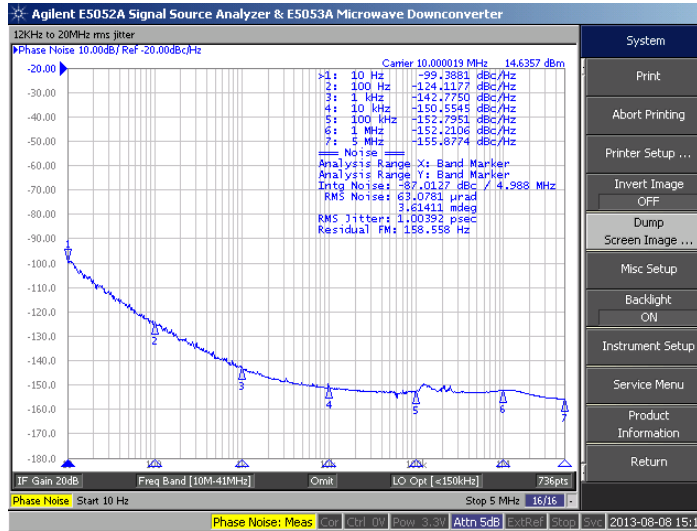
FREQUENCY STABILITY VS. TEMPERATURE



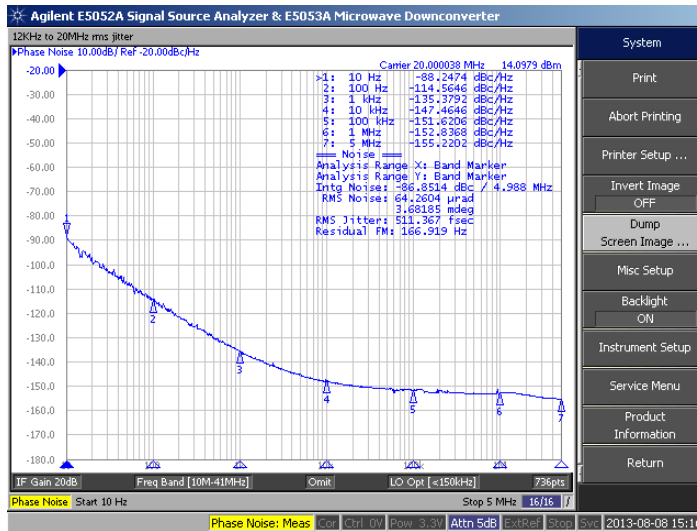


TYPICAL PHASE NOISE

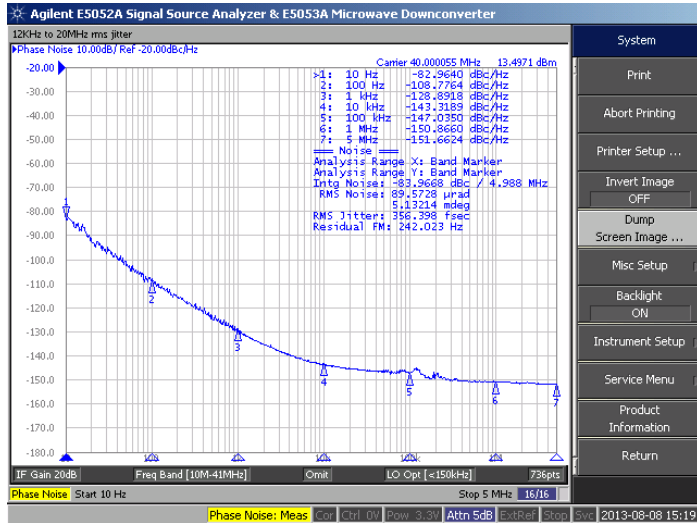
10.00 MHz Carrier



20.00 MHz Carrier



40.00 MHz Carrier





7.0 x 5.0 x 1.9mm

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OUTLINE DIMENSION:

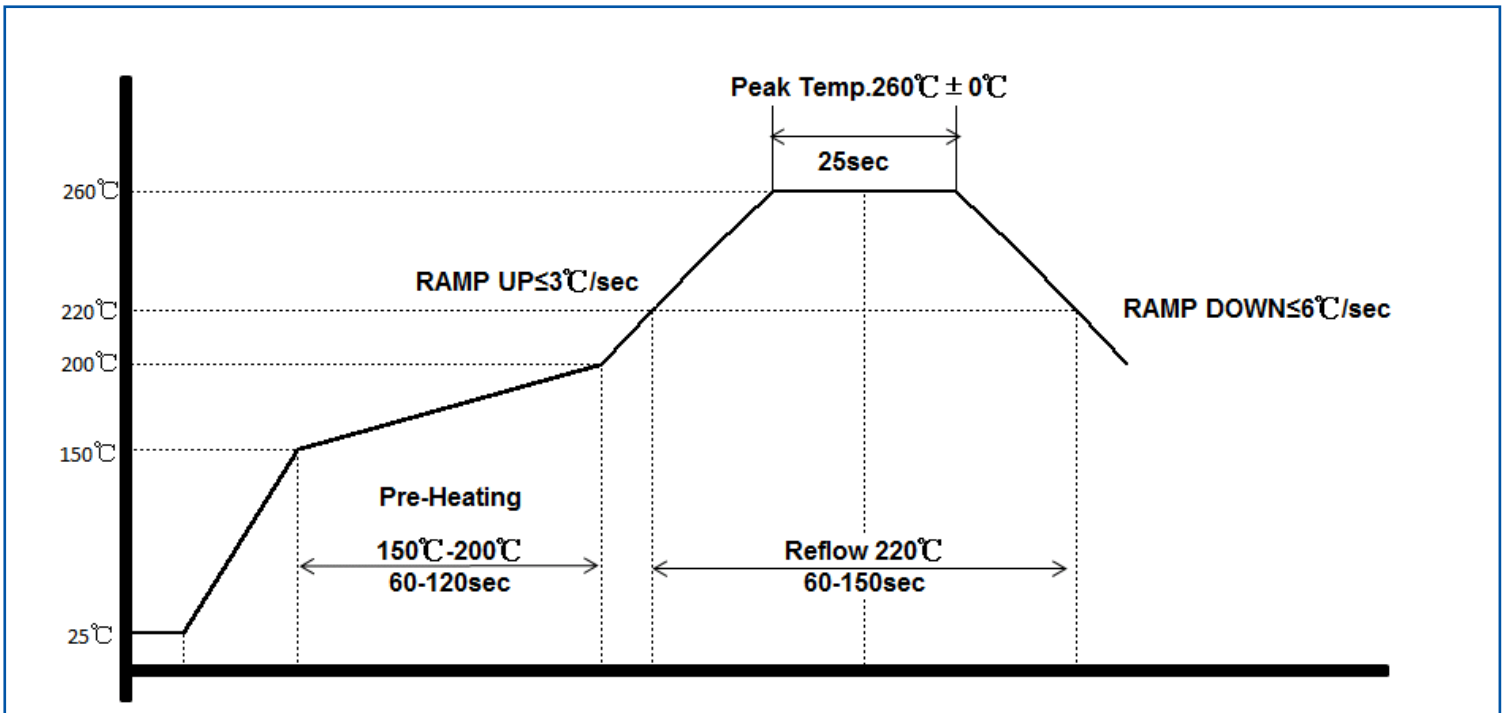
Bottom View

Recommended Land Pattern

Pin	Function
1	NC (for TCXO) Vc (for VCTCXO)
2	GND
3	Output
4	Vdd
*	For factory test only

Dimensions: mm

REFLOW PROFILE:





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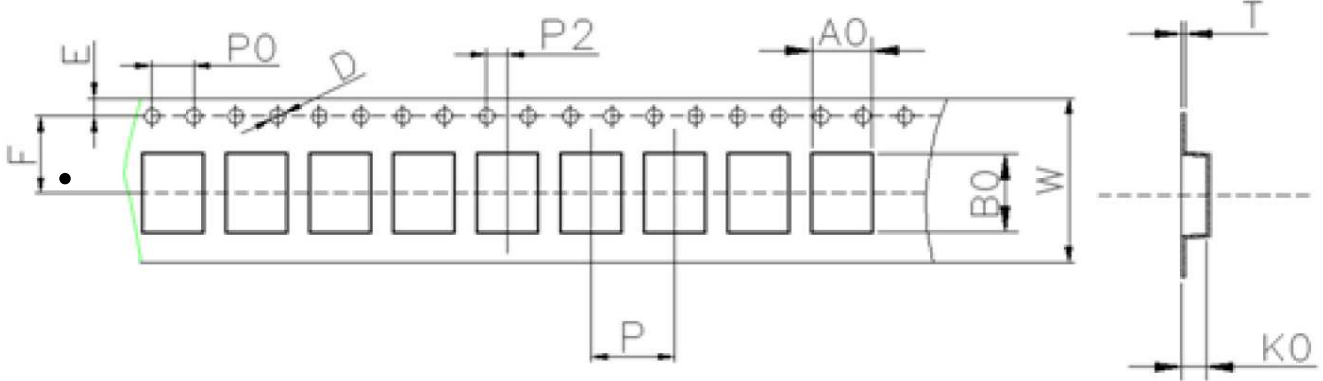
TAPE & REEL:

Packaging:

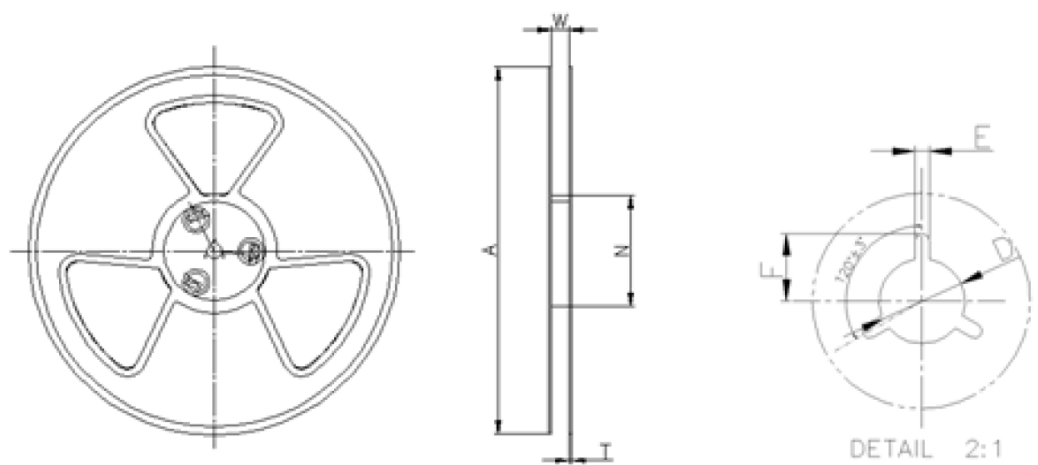
T5: 500pcs/reel

T2: 2,000pcs/reel

MSL-3 packaging applies to MOQ=50 units (cut tape) & T5 and T2.



W	A0	B0	K0	P	F
16.0±0.3	5.7±0.15	7.6±0.15	2.4±0.15	8.0±0.1	7.5±0.1
E	D	P0	P2	T	
1.75±0.1	1.5+0.1/-0.0	4.0±0.1	2.0±0.1	0.3±0.05	



W	A	N	T	E	F	D
16.5±0.4	330±0.5	100±0.3	1.8±0.2	2.1±0.3	10.75±0.3	13.5+0.5/-0.2

Dimensions: mm

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