



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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# ULTRA MINIATURE SMD VC/TCXO



2.5 X 2.0 X 0.8mm

**ASVTX-12/ASTX-12**



ESD Sensitive



RoHS/RoHS II compliant

**Moisture Sensitivity Level (MSL) –1**

**FEATURES:**

- Ultra miniature and low height 0.8mm
- Low current consumption 2.5mA
- Vc function corresponds to PLL circuits
- Suitable for RoHS reflow profile
- Low phase noise

**APPLICATIONS:**

- Cellular and cordless phones
- Standard OSC for exact equipment
- Mobile communication equipment
- Portable radio equipment
- Personal Digital Assistants (PDAs)
- Portable music players

**STANDARD SPECIFICATIONS:**

Parameters	Minimum	Typical	Maximum	Units	Notes
Frequency Range	10		52	MHz	
Standard Frequencies	13, 16.368, 16.369, 19.2, 26, 38.4, 40, 52			MHz	
Operating Temperature	-30		+85	°C	See option (Table 1)
Storage Temperature	-40		+85	°C	
Frequency Stability $\Delta f/f_0$ vs Tolerance (@+25°C)	-2.0		+2.0	ppm	+25°C, Vcon=1.4V After 2 time reflow
Temperature (ref. to +25°C)	-2.0		+2.0		See option (Table 1)
Supply Voltage Change (Vdd±5%)	-0.2		+0.2		
Load Change (Z <sub>L</sub> ±10%)	-0.2		+0.2		
Control Voltage (Vcon) (ASVTX-12 only)	+0.4		+2.4	V	Option A
	+0.4		+2.4		Option B
	+0.4		+2.4		Option C
	+0.3		+1.5		Option D
	+0.4		+2.4		Option E
Supply Voltage (Vcc)	+2.85	+3.0	+3.15	V	Option A
	+2.66	+2.8	+2.94		Option B
	+2.375	+2.5	+2.625		Option C
	+1.71	+1.8	+1.89		Option D
	+3.135	+3.3	+3.465		Option E
Aging (first year @+25±2°C)	-1.0		+1.0	ppm	
Supply Current (Icc)			2.0	mA	13MHz ≤ Fo < 26MHz
			2.5	mA	26MHz ≤ Fo ≤ 52MHz
Startup Time			2.0	ms	
Frequency Tuning Range (ASVTX-12 only)	±5.0		±9.5	ppm	
Vcon Input Impedance (ASVTX-12 only)	500			kΩ	
Frequency Tuning Transition	Positive				
Output Voltage	0.8			Vp-p	
Harmonics			-5.0	dBc	
Load	10kΩ//10pF				
Waveform	Clipped Sine Wave				
Phase Noise @ 19.2MHz					
100Hz offset from the carrier		-115	-100	dB/Hz	
1kHz offset from the carrier		-135	-125		
10kHz offset from the carrier		-150	-140		

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## OPTIONS & PART IDENTIFICATION: (left blank if standard)

ASVTX-12 or ASTX-12 -  -  MHz -  -

Vdd (V)
A: 3.0V±5%
B: 2.8V±5%
C: 2.5V±5%
D: 1.8V±5%
E: 3.3V±5%

**Frequency in MHz**  
Please specify the frequency in MHz.  
e.g. 19.200MHz  
26.000MHz

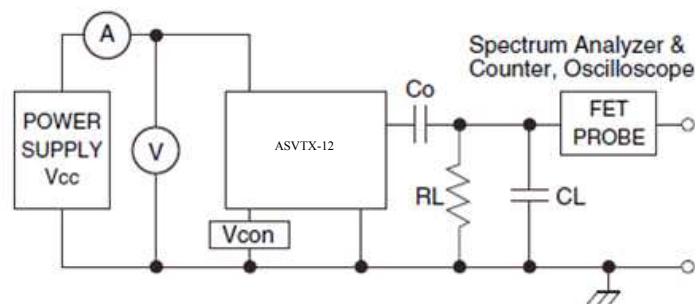
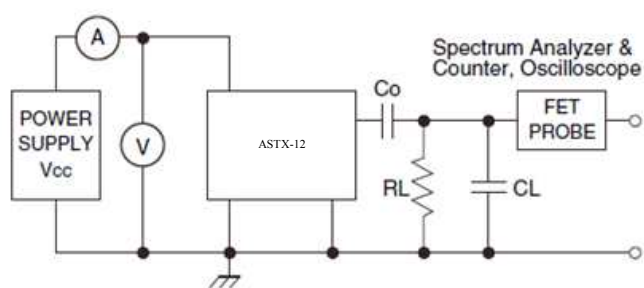
**Packaging**  
T: 1,000pcs/reel

**Table 1: Frequency Stability vs Operating Temperature**

	±0.5ppm	±1.0ppm	±1.5ppm	±2.0ppm	±2.5ppm
0°C ~ +55°C	D05	D10	D15	D20	D25
-10°C ~ +60°C	E05	E10	E15	E20	E25
0°C ~ +70°C	F05	F10	F15	F20	F25
-20°C ~ +70°C	G05	G10	G15	G20	G25
-30°C ~ +85°C	H05*	H10	H15	STD (Blank)	H25
-40°C ~ +85°C	I05*	I10*	I15	I20	I25

\*Please contact Abracon for availability

## RECOMMENDED TEST CIRCUIT



RL=10kΩ±10% CL=10pF±10%  
• CL include Probe Capacitance  
Co: DC Cut Capacitance

# ULTRA MINIATURE SMD VC/TCXO



2.5 X 2.0 X 0.8mm

ASVTX-12/ASTX-12

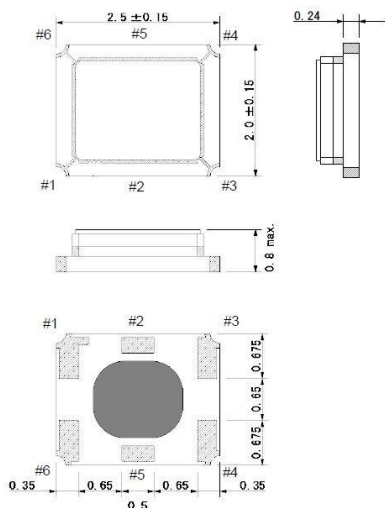


ESD Sensitive

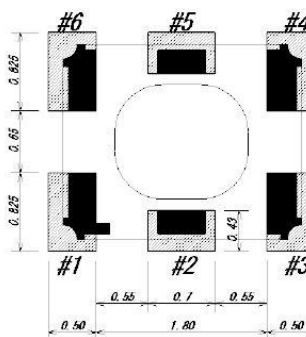


RoHS/RoHS II compliant

## MECHANICAL DIMENSIONS:



Recommended Land Pattern



**Note1:**

It is recommended that a by-pass capacitor of 0.01uF value be placed between pin #6 and pin #3 and an AC-coupling capacitor of the same value be placed in series with pin#4 for optimal performance.

For ASTX, please connect pin #1 and #3 to GND.

**Note2:**

Pin#2 and Pin#5 should be left floating (No Connect = N.C.)

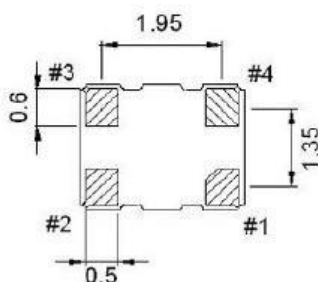
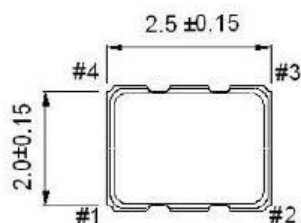
	Pin Configuration
#1pin	GND
#3pin	GND
#4pin	OUTPUT
#6pin	Vcc
#2/5pin	N.C.

ASTX-12 TCXO

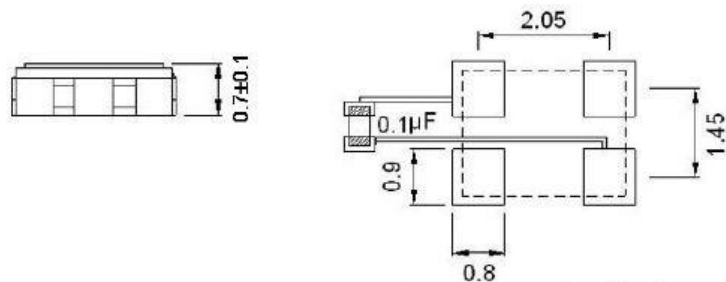
	Pin Configuration
#1pin	Vcon
#3pin	GND
#4pin	OUTPUT
#6pin	Vcc
#2/5pin	N.C.

ASVTX-12 VCTCXO

Dimensions: mm



Recommended Land Pattern



PIN	FUNCTION	
	ASVTX	ASTX
1	Vcon	GND
2	GND	
3	OUTPUT	
4	Vcc	

**Note:**

It is recommended that a by-pass capacitor of 0.1uF value be placed between pin #2 and pin #4 and an AC-coupling capacitor of the same value be placed in series with pin#3 for optimal performance.

Dimensions: mm

# ULTRA MINIATURE SMD VC/TCXO



2.5 X 2.0 X 0.8mm

ASVTX-12/ASTX-12

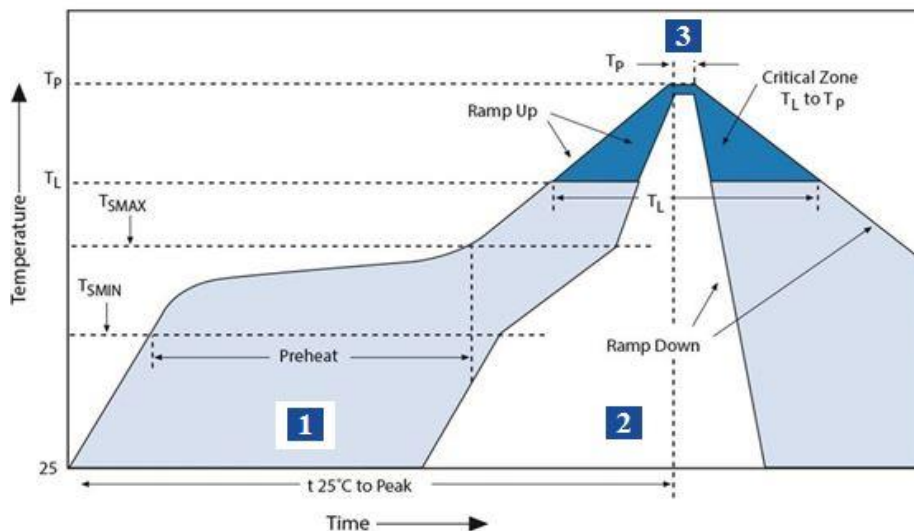


ESD Sensitive



RoHS/RoHS II compliant

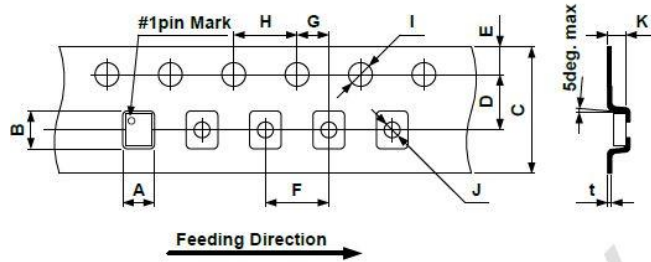
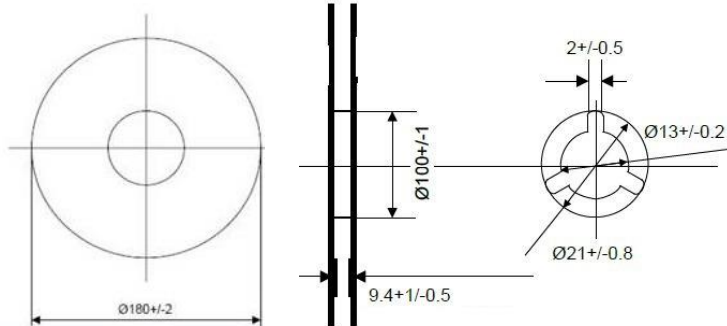
## REFLOW PROFILE



Zone	Description	Temperature	Times
1	Preheat	$T_{SMIN} \sim T_{SMAX}$ $180^{\circ}\text{C} \pm 10^{\circ}\text{C}$	120 sec. MAX
2	Reflow	$T_L$ $230^{\circ}\text{C}$	40 sec. MAX
3	Peak heat	$T_P$ $260^{\circ}\text{C}$	10 sec. MAX

## TAPE & REEL:

T: 1,000pcs/Reel



A	B	C	D	E
2.4±/0.1	2.9±/0.1	8.0+0.3/-0.2	3.5±/0.05	1.75±/0.1
F	G	H	I	J
4.0±/0.1	2.0±/0.05	4.0±/0.1	φ1.5+0.1/-0	φ1.1+0.1/-0
K	t			
1.15±/0.05	0.25±/0.05			

Dimensions: mm

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