

ULTRA MINIATURE SMD VC/TCXO



2.0 x 1.6 x 0.8mm

ASVTX-13/ASTX-13

Moisture Sensitivity Level (MSL) -1
ASTX13 is not recommended for new designs



RoHS
Compliant

FEATURES:

- Industry smallest 2.0 x 1.6 x 0.8mm
- Low current consumption 1.5mA at 26MHz
- Vc function ideal for PLL application
- Suitable for RoHS complaint reflow

APPLICATIONS:

- Cellular and cordless phones
- Standard reference oscillator for test equipment
- Mobile communication equipment
- Portable radio equipment and music player
- Phase Locked Loop

STANDARD SPECIFICATIONS:

Parameters	Minimum	Typical	Maximum	Units	Notes	
Frequency Range	13	-----	52	MHz		
Standard Frequencies	13, 16.368, 19.2, 26, 38.4, 52			MHz	16.368MHz VCTCXO is available upon request. Please contact Abracon for details.	
Operating Temperature	-30	-----	+75	°C		
Storage Temperature	-40	-----	+85	°C		
Frequency Stability $\Delta f/f_0$ vs					+25°C, Vcon=1.4V After 2- reflow	
Tolerance (@+25°C)	-2.0	-----	+2.0	ppm	See option (Table 1)	
Temperature (ref. to +25°C)	-1.5	-----	+1.5			
Supply Voltage Change (Vdd±5%)	-0.2	-----	+0.2			
Load Change (ZL±10%)	-0.2	-----	+0.2			
Supply Voltage (Vdd)	+2.85	+3.0	+3.15	V	Option A	
	+2.66	+2.8	+2.94		Option B	
	+1.71	+1.8	+1.89		Option C (ASTX only)	
Aging (first year @+25±2°C)	-1.0	-----	+1.0	ppm		
Supply Current (Icc)	Vdd=3.0V	-----	-----	1.5	mA	16.368MHz, -30 to +85°C
		-----	-----	1.5		19.200MHz, -30 to +85°C
		-----	-----	1.5		26.000MHz, -30 to +85°C
		-----	-----	2.0		38.400MHz, -30 to +85°C
	Vdd=2.8V	-----	-----	1.5	mA	16.368MHz, -30 to +85°C
		-----	-----	1.5		19.200MHz, -30 to +85°C
		-----	-----	1.5		26.000MHz, -30 to +85°C
		-----	-----	1.5		38.400MHz, -30 to +85°C
	Vdd=1.8V	-----	-----	1.5	mA	16.368MHz, -30 to +85°C
		-----	-----	1.5		19.200MHz, -30 to +85°C
		-----	-----	1.5		26.000MHz, -30 to +85°C
		-----	-----	1.5		38.400MHz, -30 to +85°C
Startup Time	-----	-----	3.0	ms	90% Vp-p ±0.5ppm	



2.0 x 1.6 x 0.8mm

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Parameters		Minimum	Typical	Maximum	Units	Notes
Voltage Control Function (for ASVTX-13) Control Voltage (Vcon)	Vdd=3.0V	+0.4	+1.4	+2.4	Vdc	19.2MHz 26.0MHz 38.4MHz
	Vdd=2.8V	+0.4	+1.4	+2.4		19.2MHz
		+0.5	+1.5	+2.5		26.0MHz
		+0.1	+1.2	+2.3		38.4MHz
Frequency Tuning Range						
	@Vcon (min)	-5.5		-9.5	ppm	
	@Vcon (max)	+5.5		+9.5		
Frequency Tuning Transition		Positive				
Output Voltage		0.8	-----	-----	Vp-p	
Harmonics		-----	-----	-5.0	dBc	
Load		10kΩ/10pF				
Waveform		Clipped Sine Wave				
Phase Noise						
10Hz offset from the carrier		-----	-----	-80	dBc/Hz	Applicable to all standard available frequencies with Vdd = +1.8V, +2.8 & +3.3V
100Hz offset from the carrier		-----	-----	-105		
1kHz offset from the carrier		-----	-----	-130		
10kHz offset from the carrier		-----	-----	-144		
100kHz offset from the carrier		-----	-----	-144		

➤ OPTIONS & PART IDENTIFICATION:

ASVTX-13 or ASTX-13 - - MHz - -

Vdd (V)
A*: 3.0V±5%
B*: 2.8V±5%
C**: 1.8V±5%

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

Packaging
Blank: Bulk
T: 1000pcs/reel
T3: 3000pcs/reel
T4: 4000pcs/reel (STD)

*16.368MHz is only for ASTX-13 (TCXO)
**1.8V is only for ASTX-13 (TCXO)

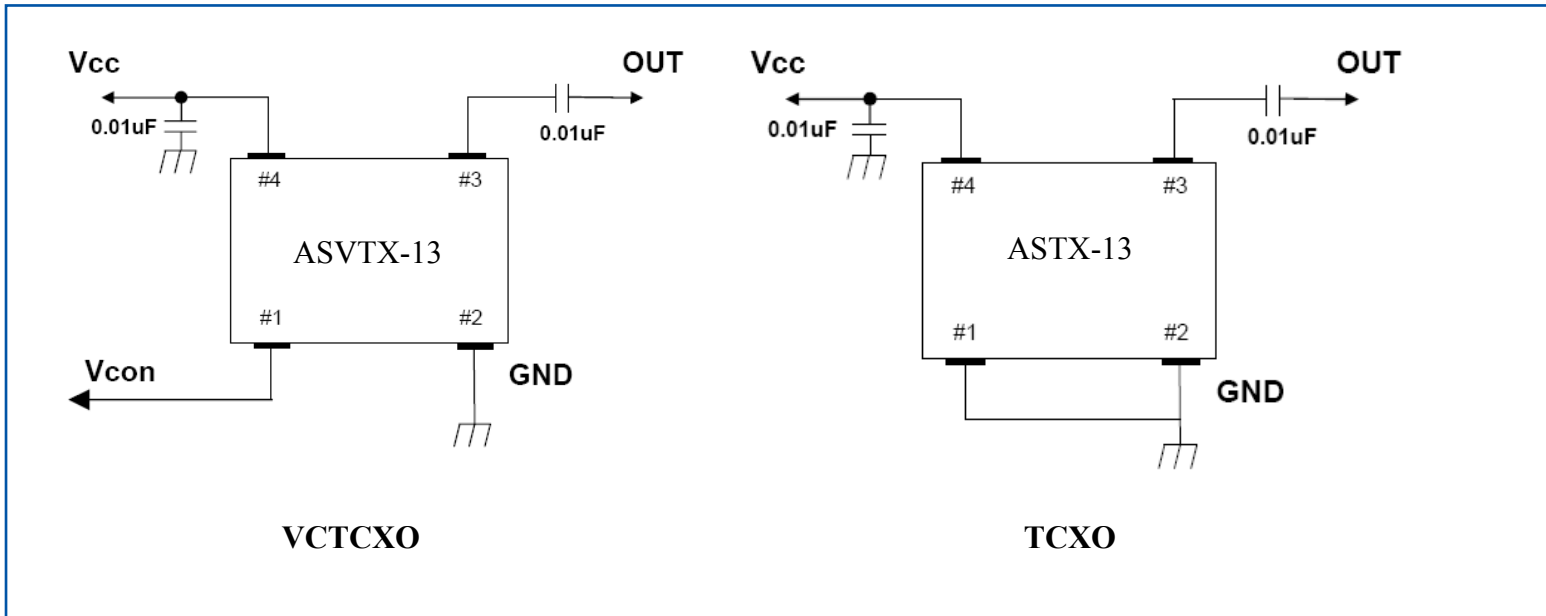
Table 1: Frequency Stability vs Operating Temperature

	±0.5ppm	±1.0ppm	±1.5ppm	±2.0ppm
-10°C ~ +75°C	A05	A10	A15	A20
-30°C ~ +75°C	B05	B10	Std.(Blank)	B20
-30°C ~ +80°C	C05	C10	C15	C20
-30°C ~ +85°C	D05	D10	D15	D20



2.0 x 1.6 x 0.8mm

RECOMMENDED TEST CIRCUIT



OUTLINE DIMENSION:



Dimensions: inches (mm)

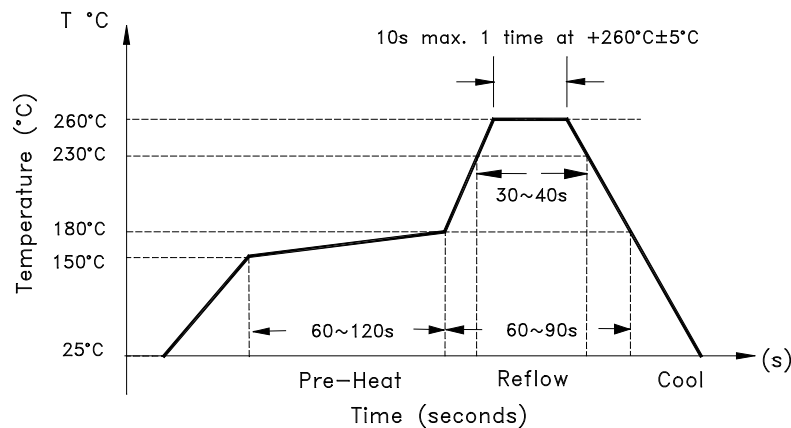


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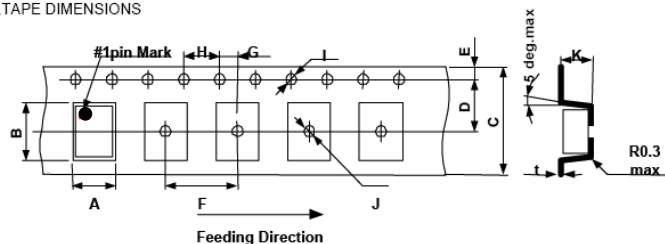
REFLOW PROFILE:



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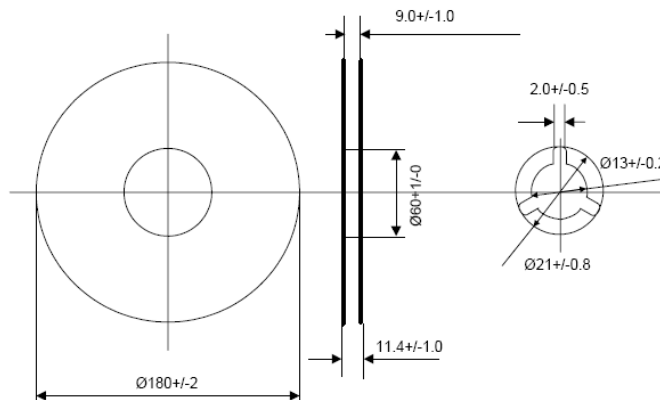
T: 1000pcs/reel
T3: 3000pcs/reel
T4: 4000pcs/reel (STD)

1. TAPE DIMENSIONS



Symbol	A	B	C	D	E
Dimension	2.0+/-0.05	2.4+/-0.05	8.0+/-0.2	3.5+/-0.05	1.75+/-0.1
Symbol	F	G	H	I	J
Dimension	4.0+/-0.1	2.0+/-0.05	4.0+/-0.1	Φ1.5+0.1/-0	Φ1.0+0.1/-0
Symbol	K	t			
Dimension	0.9+/-0.05	0.25+/-0.05			

2. REELS DIMENSIONS



Dimensions: mm

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