ULTRA MINIATURE SMD VC/TCXO

2.0 x 1.6 x 0.8mm

ASVTX-13/ASTX-13

Moisture Sensitivity Level (MSL) –1

Pb 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 oscialltor 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 is available only as a TCXO
Operating Temperature		-30	-----	+75	°C	
Storage Temperature		-40	-----	+85	°C	
Frequency Stability Δf/f0 vs Tolerance (@+25°C)		-2.0	-----	+2.0	ppm	+25°C, Vcon=1.4V After 2- reflow
Temperature (ref. to +25°C)		-1.5	-----	+1.5		See option (Table 1)
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

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ASVTX-13/ASTX-13

2.0 x 1.6 x 0.8mm

Pb RoHS Compliant

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%

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

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)

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

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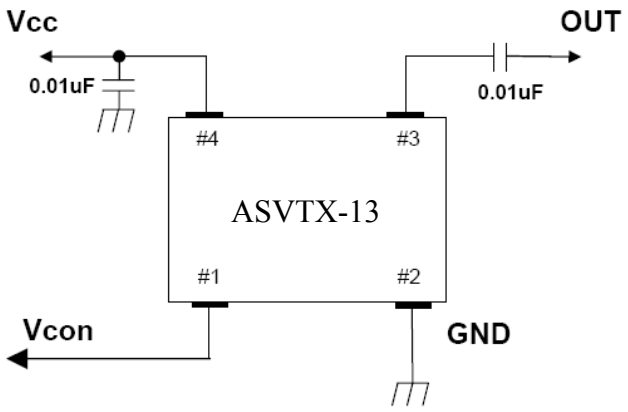
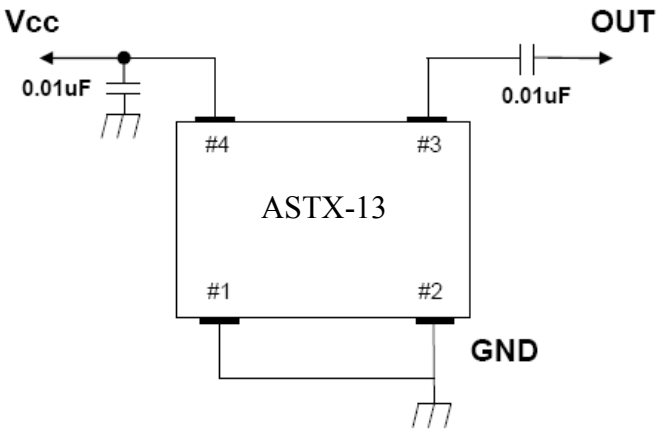
RoHS Compliant

2.0 x 1.6 x 0.8mm

RECOMMENDED TEST CIRCUIT



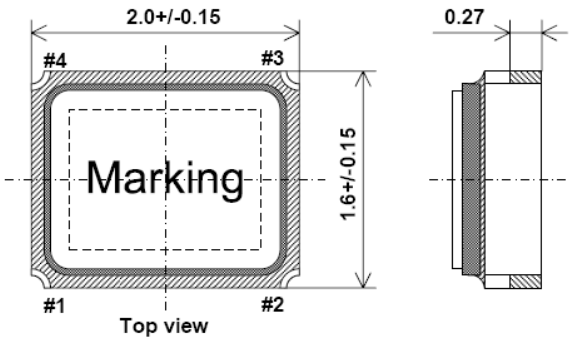
VCTCXO

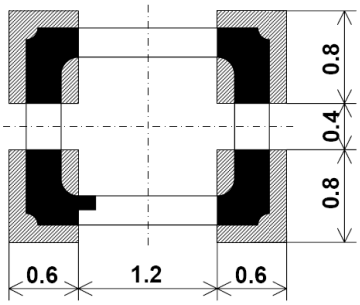


TCXO

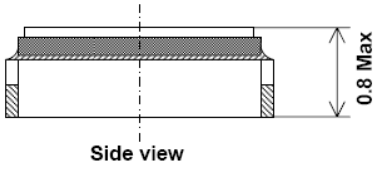
OUTLINE DIMENSION:

Recommended Land Pattern





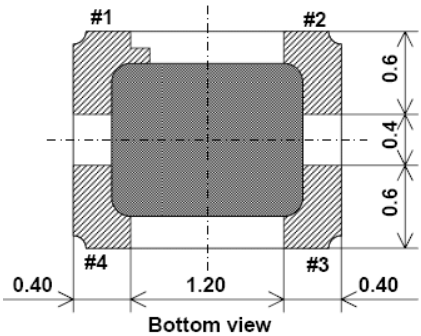
Top View



Note1
Co-planarity:80um Max

Note2
Electrode : Mo + Ni 1.5 to 8.89um
+ Au 0.3 to 1.0um

Note: It is recommended that a by-pass capacitor of 0.01uF value be placed between pin #2 and pin #4 and an AC-coupling capacitorof the same value be placed in series with pin#3 for optimal performance. For ASTX (TCXO) please connect pin #1 and #2 to GND.



	Pin Connection
# 1 pin	GND
# 2pin	GND
# 3 pin	Output
# 4 pin	+Vcc

ASTX-13 TCXO

	Pin Connection
# 1 pin	Vcon
# 2pin	GND
# 3 pin	Output
# 4 pin	Vcc

ASVTX-13 VCTCXO

Dimensions: inches (mm)

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RoHS Compliant

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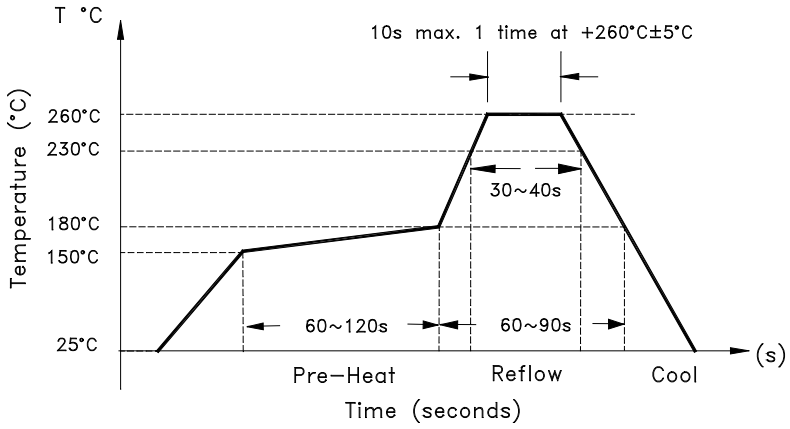
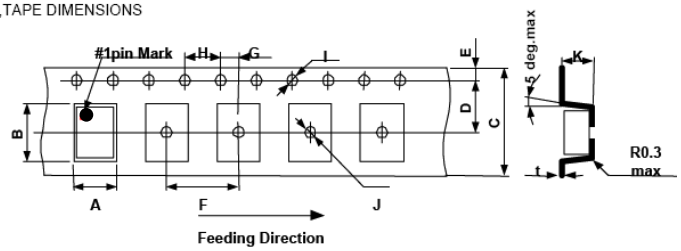
REFLOW PROFILE:



REFLOW PROFILE:

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

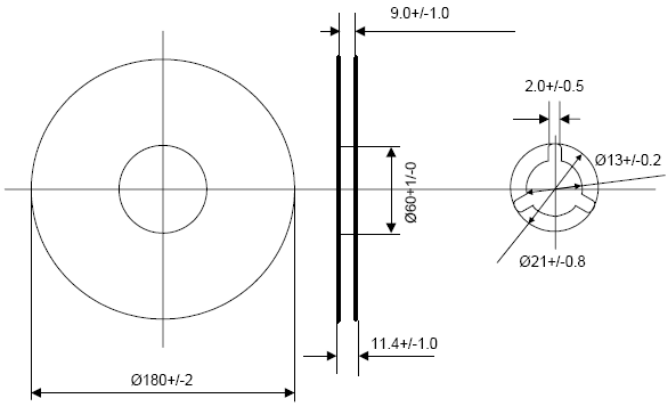
1,TAPE DIMENSIONS



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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http://moschip.ru/get-element

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