

SMD VCTCXO

AVTXAIG-11

Request Samples



Check Inventory



ESD Sensitive



3.2 x 2.5 x 1.2 mm
RoHS/RoHS II Compliant
MSL Level = 1

Features

- AEC-Q200 Qualified
- TS16949 Production Line Certified
- PPAP Available Upon Request

Applications

- Cellular and cordless phones
- Standard oscillator for exact equipment
- Consumer electronics
- Industrial control & automation
- Mobile communication

Electrical Specifications [Note 1]

Parameters	Min.	Typ.	Max.	Units	Notes
Frequency Range	9.5		52	MHz	
Operating Temperature	-40		+85	°C	See Options (Table 1)
Storage Temperature	-55		+125	°C	
Frequency Stability $\Delta f/f_0$ vs:					
Tolerance Tolerance Temperature Supply Voltage Change Load Change	-1.0		+1.0	ppm	Reference to f_0 , at 25°C±2°C, Pre-reflow
	-2.0		+2.0		Reference to f_0 , at 25°C±2°C, 24 hours after reflow, two times
	-2.5		+2.5		See Options (Table 1)
	-0.2		+0.2		Reference to f_0 , at 25°C±2°C
	-0.2		+0.2		Vdd ± 5%
Aging	-1.0		+1.0		CL ± 1kΩ/±1pF
Supply Voltage (Vdd)	+3.135	+3.3	+3.465	V	First year @+25°C±2°C
	+2.85	+3.0	+3.15		Option E
	+2.66	+2.8	+2.94		Option A
	+2.375	+2.5	+2.625		Option B
	+1.71	+1.8	+1.89		Option C
Supply Current (Idd)			2.0	mA	Option D
			2.5		10.00MHz to 26.00 MHz
Start-up Time			2.0	ms	26.01MHz to 52.00MHz
Output Voltage	0.8			Vp-p	
Output Load	9	10	11	kΩ	
	9	10	11	pF	
Output Waveform	Clipped Sine Wave, External DC-Cut Capacitor Required				1000 pF recommended
Voltage Control Function (Vcon)	0.4	1.4	2.4	Vdc	Vdd = 3.3Vdc
	0.4	1.4	2.4	Vdc	Vdd = 3.0Vdc
	0.4	1.4	2.4	Vdc	Vdd = 2.8Vdc
	0.4	1.4	2.4	Vdc	Vdd = 2.5Vdc
	0.3	0.9	1.5	Vdc	Vdd = 1.8Vdc
Frequency Tuning Range			-5.0	ppm	At Vcon(min), VDD=1.8Vdc
	5.0			ppm	At Vcon(max), VDD=1.8Vdc
			-15.0	ppm	At Vcon(min), VDD>1.8Vdc
	15.0			ppm	At Vcon(max), VDD>1.8Vdc
Frequency Tuning Transition	Positive Transfer Characteristics				
Phase Noise		-148		dBc/Hz	@10kHz offset

Note 1: All measurements made at 25°C±2°C, nominal Vdd, nominal Vcon, unless otherwise specified

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Part Identification

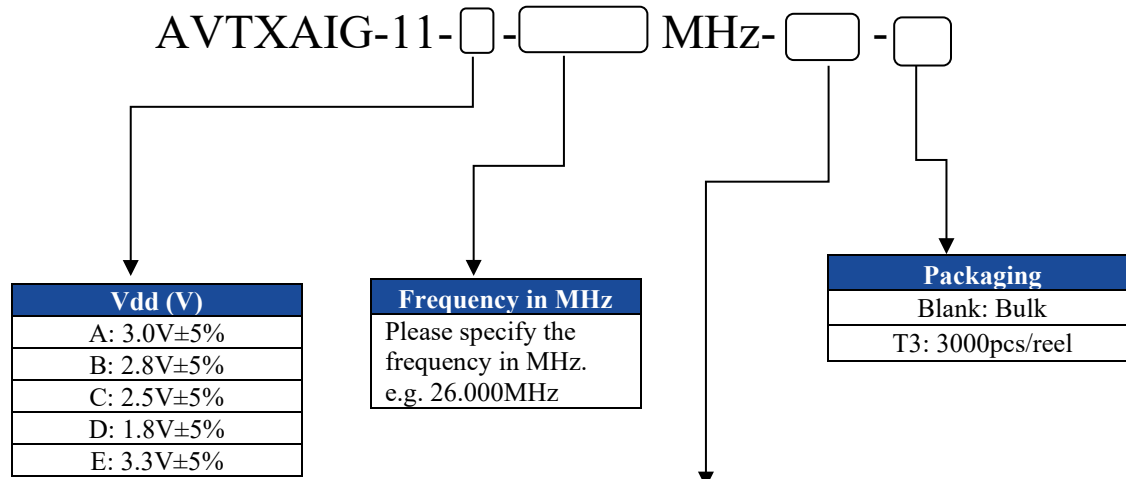
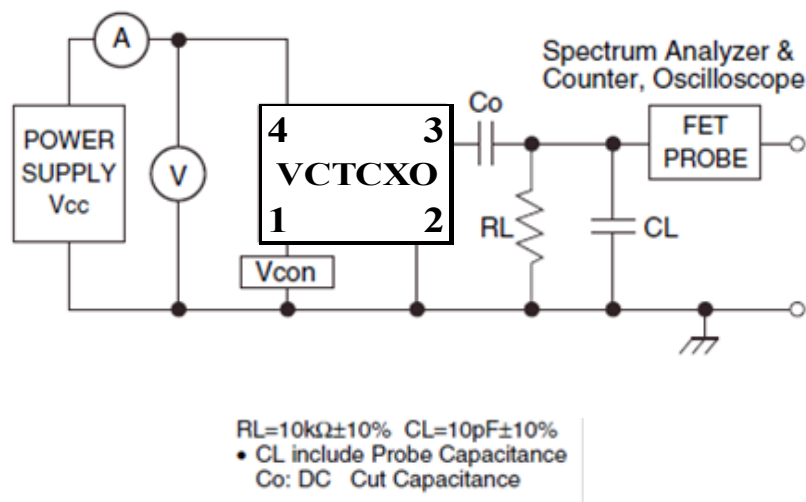


Table 1: Frequency Stability vs Operating Temperature

	±0.5ppm	±1.0ppm	±1.5ppm	±2.0ppm	±2.5ppm
0°C ~ +70°C	A05	A10	A15	A20	A25
-10°C ~ +60°C	B05	B10	B15	B20	B25
-20°C ~ +70°C	C05	C10	C15	C20	C25
-30°C ~ +75°C	D05	D10	D15	D20	D25
-30°C ~ +85°C	E05	E10	E15	E20	E25
-40°C ~ +85°C	---	F10	F15	F20	F25

Recommended Test Circuit



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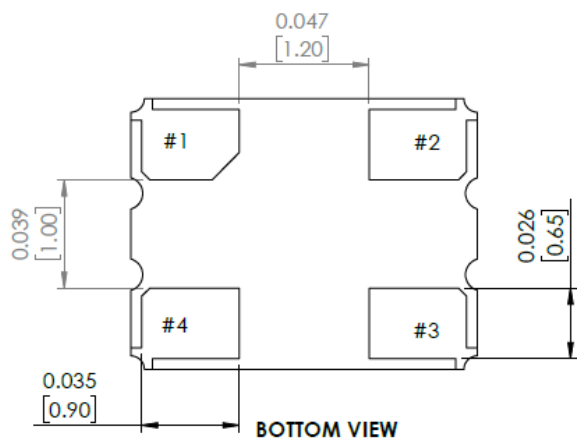
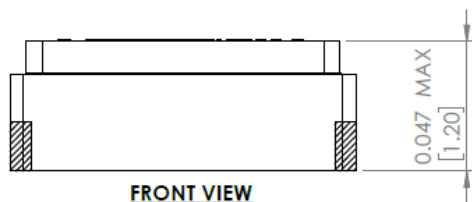
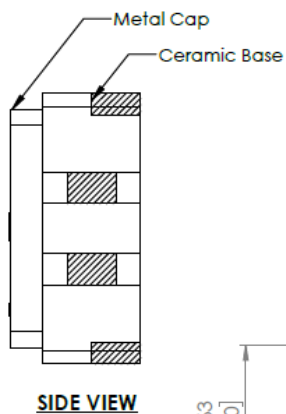
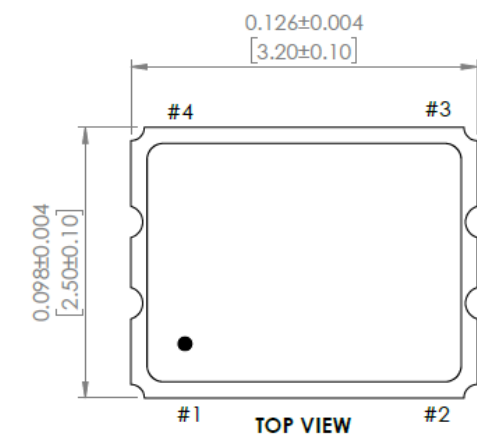


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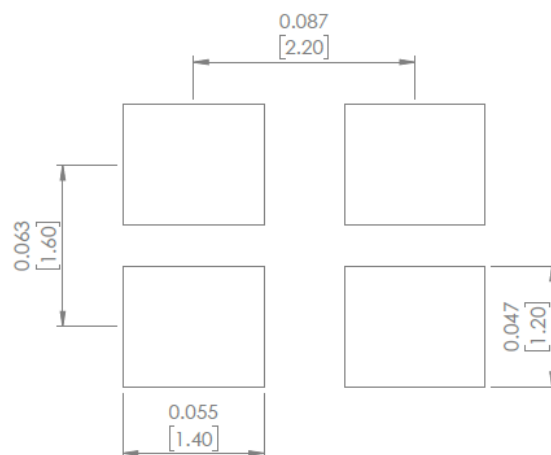


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Mechanical Dimensions



Recommended Land Pattern



Pin #	Function
1	Vcon
2	GND
3	Output
4	Vdd

Dimensions: inches (mm)



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Reflow Profile [JDEC J-STD-020]

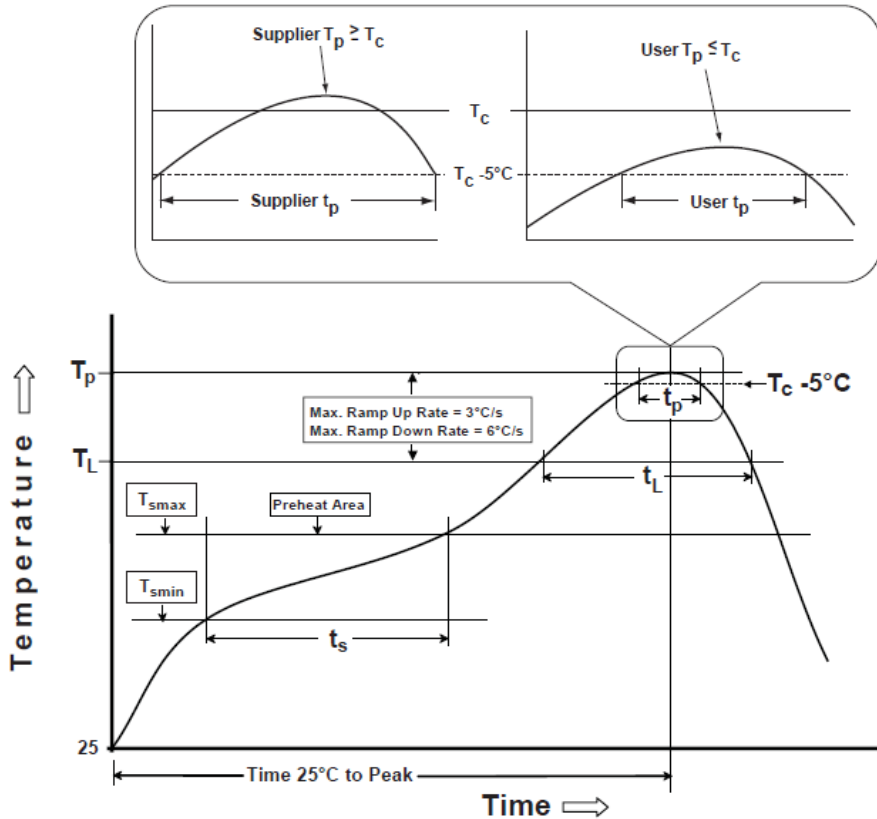


Table 1

SnPb Eutectic Process Classification Temperatures (T_c)		
Package Thickness	Volume mm^3 <350	Volume mm^3 ≥ 350
<2.5 mm	235 $^\circ\text{C}$	220 $^\circ\text{C}$
≥ 2.5 mm	220 $^\circ\text{C}$	220 $^\circ\text{C}$

Table 2

Pb-Free Process Classification Temperatures (T_c)			
Package Thickness	Volume mm^3 <350	Volume mm^3 350-2000	Volume mm^3 >2000
<1.6 mm	260 $^\circ\text{C}$	260 $^\circ\text{C}$	260 $^\circ\text{C}$
1.6 mm - 2.5 mm	260 $^\circ\text{C}$	250 $^\circ\text{C}$	245 $^\circ\text{C}$
>2.5 mm	250 $^\circ\text{C}$	245 $^\circ\text{C}$	245 $^\circ\text{C}$

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum (T_{smin})	100 $^\circ\text{C}$	150 $^\circ\text{C}$
Temperature maximum (T_{smax})	150 $^\circ\text{C}$	200 $^\circ\text{C}$
Time (T_{smin} to T_{smax}) (t_s)	60 - 120 sec.	60 - 120 sec.
Average ramp-up rate (T_{smax} to T_p)	3 $^\circ\text{C/sec. max}$	3 $^\circ\text{C/sec. max}$
Liquidous temperature (T_L)	183 $^\circ\text{C}$	217 $^\circ\text{C}$
Time at liquidous (t_L)	60 - 150 sec.	60 - 150 sec.
Peak package body temperature (T_p)*	<i>see Table 1</i>	<i>see Table 2</i>
Time (t_p)** within 5 $^\circ\text{C}$ of the specified classification temperature (T_c)	20 sec.	30 sec.
Ramp-down rate (T_p to T_{smax})	6 $^\circ\text{C/sec. max}$	6 $^\circ\text{C/sec. max}$
Time 25 $^\circ\text{C}$ to peak temperature	6 min. max	8 min. max

*Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

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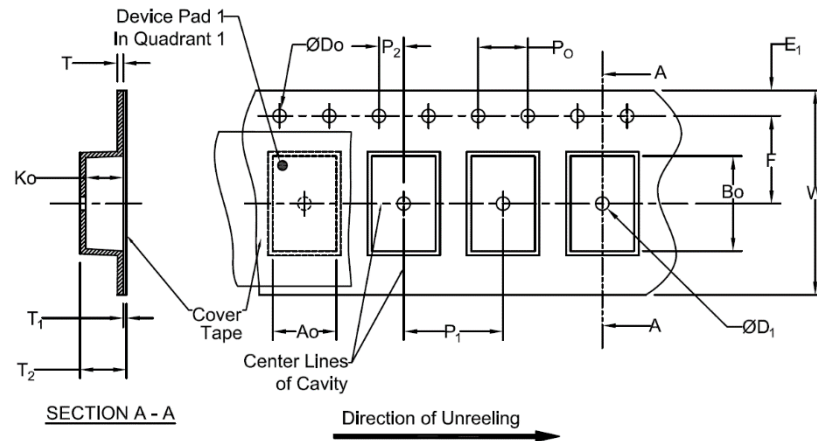
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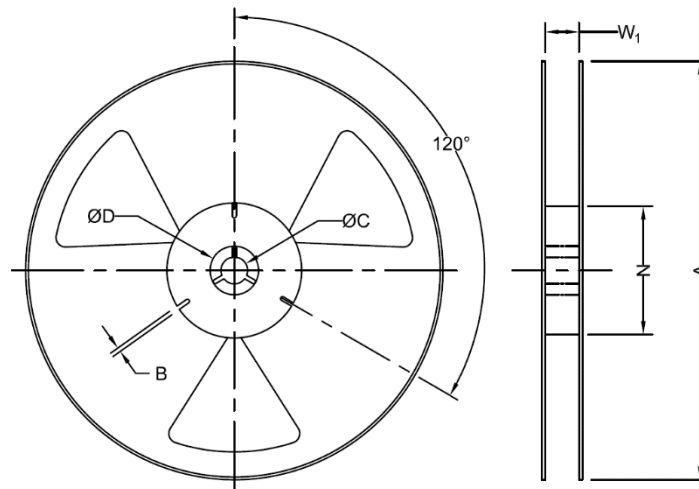
Packaging

T3: 3,000pcs/reel



Tape Specifications (mm)							
Width	Ao	Bo	Do	D1 (Min)	E1	F	Ko
8mm	*	*	1.5+0.1/-0.0	1.0	1.75±0.1	3.5±0.05	*
Width	P1	P2	Po	T (Max)	T1 (Max)	T2 (Max)	W (Max)
8mm	4.0±0.1	2.0±0.05	4.0±0.1	0.6	0.1	2.5	8.3

*Note: Compliant to EIA-481



Reel Specifications (mm)							
Width	Qty/Reel	A	B	C (Min)	D	N	*W1
8mm	3000	178	1.5	13.0+0.5/-0.2	20.2	50	8.4+1.5/-0.0

*Note: Measured at Hub

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