

Compatible with Eu Directive  
 2002/EC - RoHS



## ACT9SVH-6 HCMOS

The ACT 9SVH-6 is a 6-pad miniature SMD Voltage Controlled Crystal Oscillator (VCXO) housed in a 7 x 5 mm ceramic package with a metal lid. Only 1.7mm high it is ideal for high density, automatic assembly, printed circuit boards. The device may be "pulled" by  $\pm 100$ ppm from the nominal frequency by varying the voltage on pad 1. Applications include Networking, Telecomms, Consumer, Wireless, Audio Visual and many others.

### Specification

Parameter	Symbol	Specification	Condition
Frequency	$f_0$	1.000 ~77.760MHz & 77.761 ~300.000MHz ( The 1.0 ~ 77.760MHz devices utilise a fundamental crystal ) ( The 77.761~300MHz devices utilise a multiplier )	Please Specify
Operating Temperature Range	$T_{opr}$	Please refer to Table 1	Please Specify
Storage Temperature Range	$T_{stg}$	-55 to +105°C	
Frequency Stability	$\Delta f/f_0$	Please refer to Table 1 (Inclusive of Operating Temperature , Supply Voltage & Load)	Please Specify
Supply Voltage	$V_{DD}$	3.3V <sub>DC</sub> $\pm 5\%$ & 5.5V <sub>DC</sub> $\pm 5\%$ (1.00~77.76MHz ) 3.3V <sub>DC</sub> $\pm 10\%$ (77.761MHz ~ 300.00MHz )	Please Specify
Input Current	$I_{DD}$	1.00MHz ~ 20.000MHz 10mA (5V) & 10mA (3.3V) max 20.001MHz ~ 40.000MHz 20mA (5V) & 15mA (3.3V) max 40.001MHz ~77.760MHz 30mA (5V) & 25mA (3.3V) max 77.761MHz ~ 300.00MHz 50mA max (3.3V )	
Load drive capability	N/CL	10 TTL Load or 15pF HCMOS Load	
Duty Cycle	$T_w/t$	50% $\pm 10\%$ (Std) or 50% $\pm 5\%$ (Option) ( 50% of Waveform @ HCMOS Load )	Please Specify
Output Voltage Logic	$V_{OL}$ $V_{OH}$	HCMOS Load 10% of $V_{DD}$ Maximum HCMOS Load 90% of $V_{DD}$ minimum	
Voltage Control	$V_c$	2.5V $\pm 2.0V_{DC}$ ( Or 2.5V ) 1.65V $\pm 1.35V_{DC}$ ( Or 1.65V )	
Linearity		$\pm 20\%$ , $\pm 15\%$ or $\pm 10\%$	Please Specify
Pulling Range	$\Delta fc$	$\pm 80$ , $\pm 100$ ppm min ( Std ) or $\pm 150$ ppm min ( Option )	Please Specify
Start-Up Time	$T_{osc}$	10mS max	
Rise / Fall Time	$T_r/T_f$	1.000MHz to 20.000MHz 10nS max 20.001MHz to 40.000MHz 8nS max 40.001MHz to 77.760MHz 5nS max 77.761MHz to 300.000MHz 10nS max	
Pad 2 Tri-state Input voltage		No Connection Enable Output	
Pad 5 Tri State Input Voltage		$V_{IH} : \geq 0.7V_{DD}$ Enable Output $V_{IL} : \leq 0.3V_{DD}$ Disable Output : High Impedance	
Period Jitter ( pk to pk )		100pS max	
Period Jitter ( One Sigma )		25pS max	
Aging	$F_a$	$\pm 3$ ppm p/year max	@25°C

**Table 1**

Stability	Operating Temperature Range °C										
	0~+50	-10~+60	-10~+70	-20~+70	-30~+60	-30~+70	-30~+75	-30~+80	-30~+85	-40~+80	-40~+85
+/-15ppm	+	+	+								
+/-20ppm	+	+	+	+							
+/-25ppm	+	+	+	+	+	+	+	+	+	+	+
+/-30ppm	+	+	+	+	+	+	+	+	+	+	+
+/-50ppm	+	+	+	+	+	+	+	+	+	+	+
+/-100ppm	+	+	+	+	+	+	+	+	+	+	+

Please note that all parameters can not necessarily be specified in the same device

Customer to Specify : Frequency, Frequency Stability, Operating Temperature Range, Voltage, Linearity, Duty Cycle, Pulling Range

**ISO9001:2000 Registered**

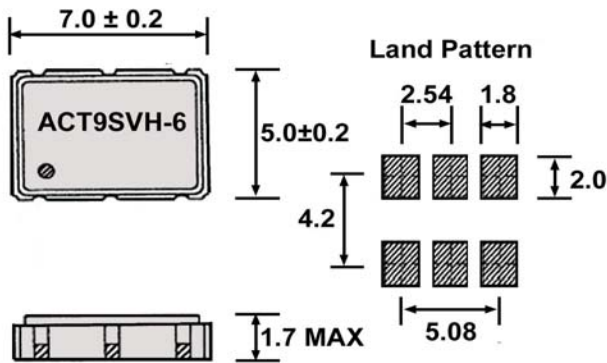
For quotations or further information please contact us at:

3 The Business Centre, Molly Millars Lane, Wokingham, Berkshire, RG41 2EY, UK

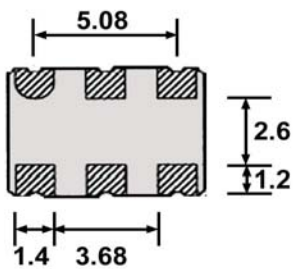
<http://www.actcrystals.com>

Issue: 2 SKr  
 Date: 29-09-05

### ACT9SVH-6 HCMOS VCXO - Package drawing

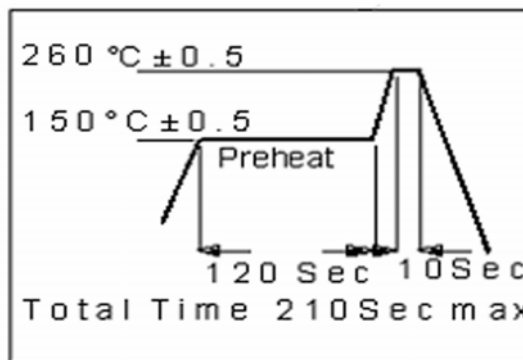


Pad Surface Finish : Au over Ni

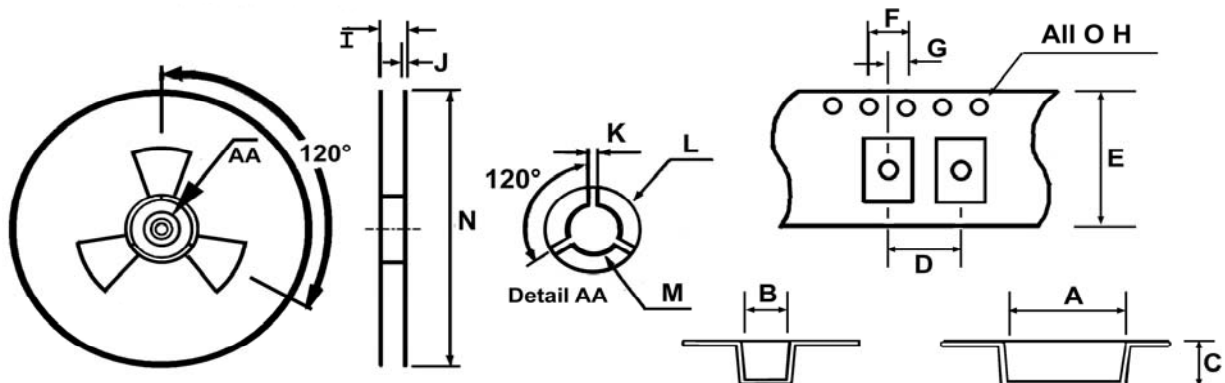


- Pad Connections**
- #1 Voltage control
  - #2 Tri state or N.C.
  - #3 Ground
  - #4 Output
  - #5 Tristate or N.C.
  - #6 Vdd

### Maximum Re-flow Profile



### ACT9SVH-6 HCMOS VCXO - Tape & Reel specification (1K Reels)



A	B	C	D	E	F	G	H	I	J	K	L	M	N
±0.1	±0.1	±0.1	±0.1	±0.3	±0.1	±0.05	+0.1 -0.0	+0.8 -0.0	±0.2	±0.5	±0.5	±0.5	±0.2
7.7	5.3	1.8	8.0	16.0	4.0	2.0	1.5	21.5	2.0	2.0	Ø23	Ø13	Ø330 Ø178

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