



## ACT321AK-SMX-4

The ACT321AK-SMX-4 is a low cost, 4 pad, high quality, low aging 3.4X2.7mm SMD Crystal. It has a ceramic base / metal lid package & is seam welded for good long term reliability. The device has the lid grounded via the package to reduce EMI issues. The wide frequency range and specification options ensure suitability for many equipments.

**APPLICATIONS:** Bluetooth, WLAN, PDA, Pagers, Card readers, Cellular, PC Accessories, Notebook, Audio-visual, PCMCIA, MP3, Consumer & Communications.



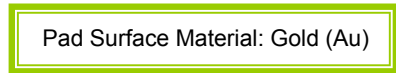
### Specification

Parameter	Symbol	Specification	Condition
Frequency Range	fo	12.000 ~ 52.000MHz	Please specify
Frequency Tolerance (@25°C)	$\Delta f/fo$	$\pm 10 \sim \pm 50$ ppm	Please specify
Stability over temp range	Tc	$\pm 10$ ppm ~ 50ppm (See table 2)	Please specify
Temp Operating Range	Topr	0~+50°C ~ -40~+85°C ( See table 2)	Please specify
Temp Storage Range	Tstg	-55 ~+125°C	
Equivalent Series Resistance	ESR	See table 1	
Load Capacitance	CL	8pF ~ 20pF & Series (8,9,12,16,18, & 20pF Std. Please specify)	
Shunt Capacitance	C0	5pF max	
Drive Level	DL	100 $\mu$ W typical (500 $\mu$ W max) (Custom available - Please enquire)	
Insulation Resistance	IR	500M $\Omega$ min @100V DC	
Aging	Fa	$\pm 3$ ppm per year ** (First year max @ 25°C)	

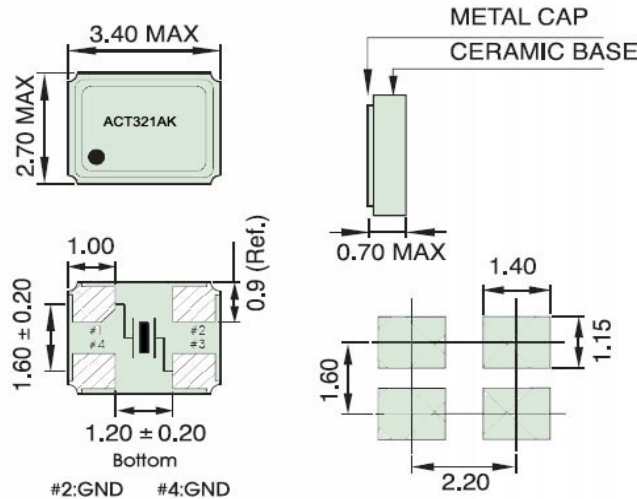
\*\*  $\pm 2$ ppm and  $\pm 1$ ppm per year available (subject to volumes) please enquire.

Table 1

Freq. Range (MHz)	ESR ( $\Omega$ ) max	Mode / Cut
12.000~29.999	100	Fundamental / AT
30.000 ~ 52.000	50	Fundamental / AT



### Dimensions (mm)



Please note that all parameters can not necessarily be specified in the same device  
 Customer to specify : Frequency, Frequency Tolerance, Temperature Stability, Operating Temperature & Load Capacitance  
 In line with our ongoing policy of product evolution and improvement, the above specification may subject to change without notice

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>

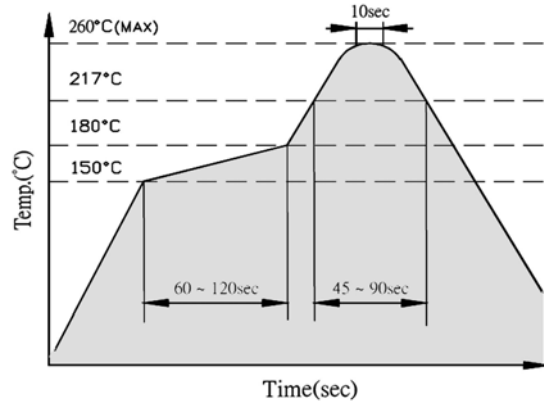
Issue 2 A5A  
 Date 06/03/07

## ACT321AK-SMX-4

Table 2

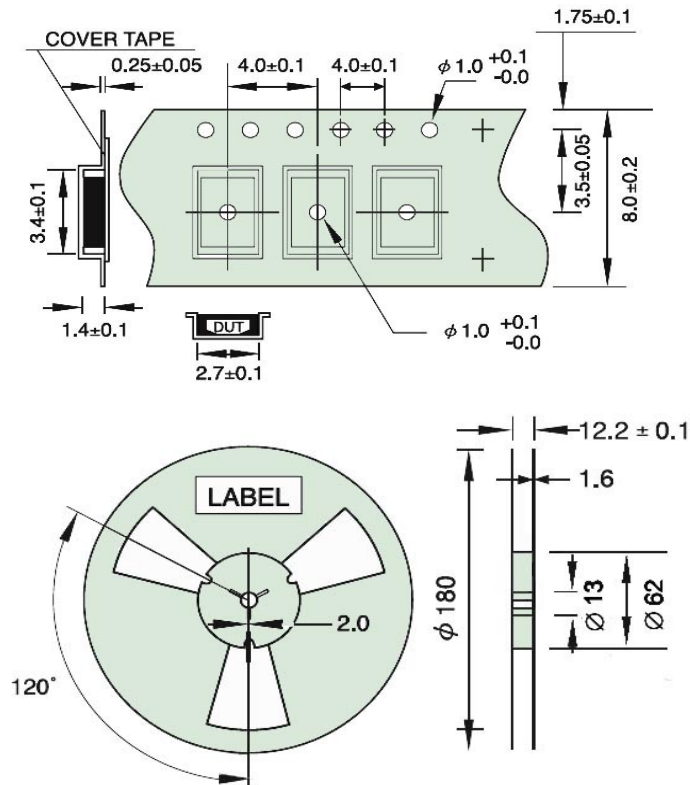
	±10 ppm	±15 ppm	±20 ppm	±30 ppm	±50 ppm
0~50°C	◆	◆	◆	◆	◆
-10~60°C	◆	◆	◆	◆	◆
-20~70°C	◆	◆	◆	◆	◆
-40~85°C			◆	◆	◆

Standard Re-flow Profile



### TAPE & REEL SPECIFICATION (mm)

( 1K pcs each reel )



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