



## ACT325SMX-4

The ACT325SMX-4 is a low cost, 4 pad, high quality, low aging 3X2.5mm SMD Crystal in a ceramic base / metal lid package, 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	12.000MHz ~ 54.000MHz	Fundamental, AT Cut
Frequency Tolerance (@25°C)	$\Delta f/fo$	10 ppm ~ 100ppm	Please specify
Stability over temp range	Tc	Refer to table 2	Please specify
Temp Operating Range	Topr	-10 ~60°C, -20 ~70°C or -40 ~ 85°C	Please specify
Temp Storage Range	Tstg	-55 ~ 125°C	
Equivalent Series Resistance	ESR	See table below	
Load Capacitance	CL	(12pF typical)	Please specify
Shunt Capacitance	C0	5.0 pF max	
Drive Level	DL	10 $\mu$ W ( 100 $\mu$ W max )	
Insulation Resistance	IR	500M $\Omega$ min	@100V DC
Aging	Fa	$\pm$ 3.0 ppm /year max	@25°C

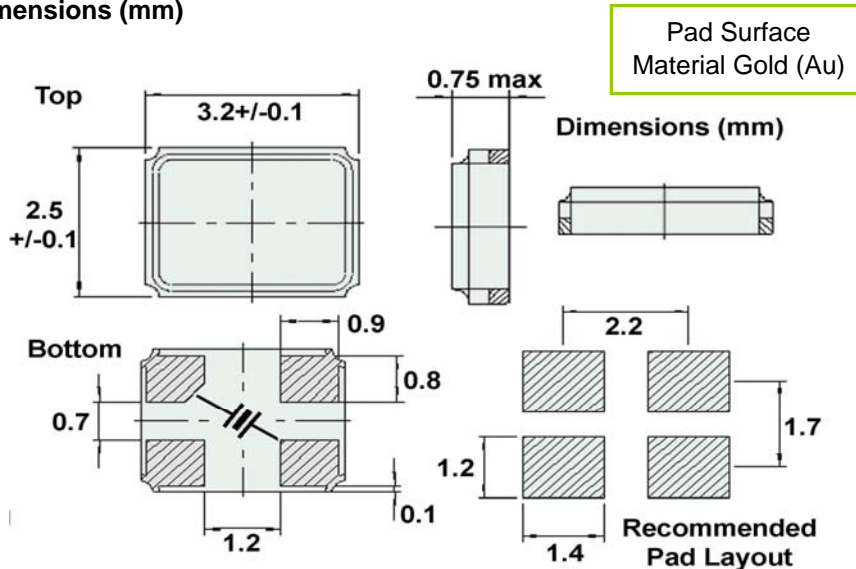
Table 1

Freq. Range (MHz)	ESR ( $\Omega$ ) max	Mode
12.000 ~ 13.999	150	Fundamental
14.000 ~ 15.999	100	Fundamental
16.000 ~ 19.999	80	Fundamental
20.000 ~ 29.999	60	Fundamental
30.000 ~ 54.000	50	Fundamental

### Standard Frequencies MHz

12.000000
13.000000
14.318180
14.745600
16.000000
16.384000
17.734475
18.432000
20.000000
24.000000
24.576000
26.000000
27.000000
30.000000
32.000000
40.000000
48.000000

### 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>

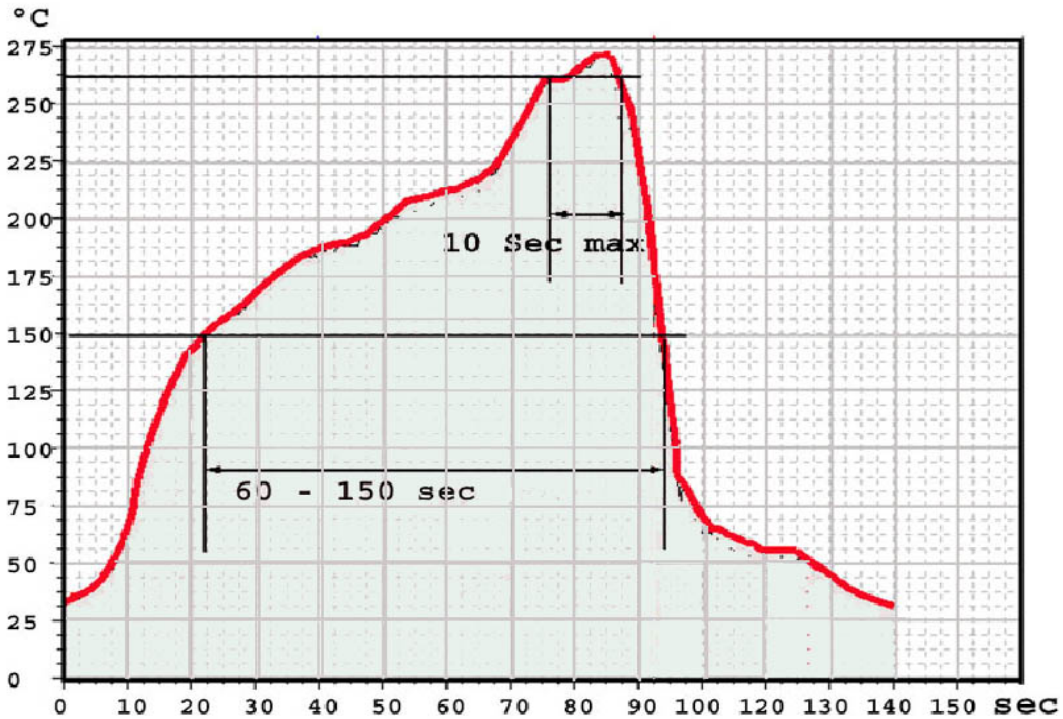
ACT325SMX-4 continued

Table 2

Stability	±10ppm	±15ppm	±20ppm	±30ppm	±50ppm	±100ppm
-10 ~+60° C	☑	☑	☑	☑	☑	☑
-20 ~+60° C	☑	☑	☑	☑	☑	☑
0 ~+60° C	☑	☑	☑	☑	☑	☑
-10 ~+70° C	☑	☑	☑	☑	☑	☑
-20 ~+70° C	☑	☑	☑	☑	☑	☑
-30 ~+60° C		☑	☑	☑	☑	☑
-30 ~+70° C		☑	☑	☑	☑	☑
-20 ~+85° C		☑	☑	☑	☑	☑
-30 ~+85° C		☑	☑	☑	☑	☑
-40 ~+85° C			☑	☑	☑	☑

☑ Available  
 ☒ Standard

Maximum Re-flow Profile



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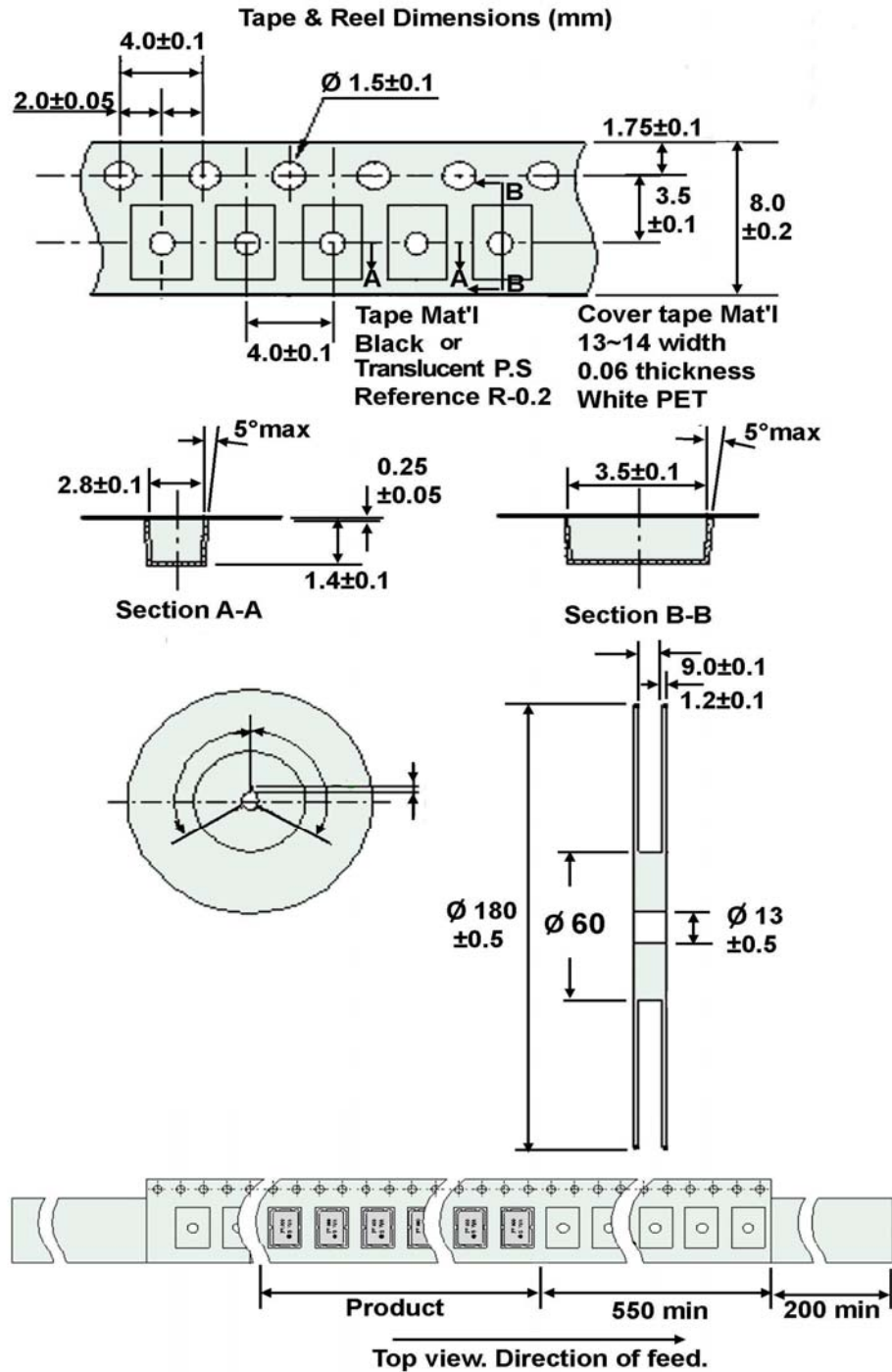
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Issue 6 SKr  
 Date: 18-7-2012

**ACT325SMX-4 continued**

( 1K pcs each reel )



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**SERIES : ACT325SMX-4 Part numbering code is BT**

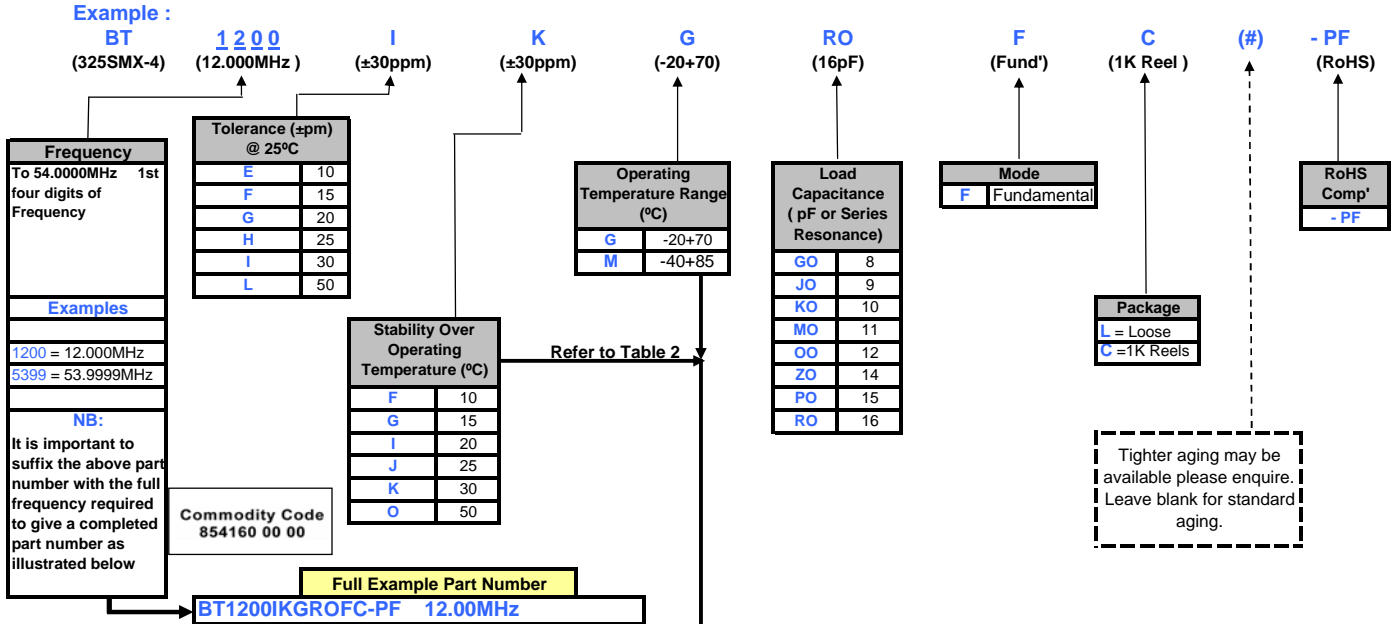


Table 2

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-10 ~+60° C	☑	☑	☑	☑	☑	☑
-20 ~+60° C	☑	☑	☑	☑	☑	☑
0 ~+60° C	☑	☑	☑	☑	☑	☑
-10 ~+70° C	☑	☑	☑	☑	☑	☑
-20 ~+70° C	☑	☑	☑	☑	☑	☑
-30 ~+60° C		☑	☑	☑	☑	☑
-30 ~+70° C		☑	☑	☑	☑	☑
-20 ~+85° C		☑	☑	☑	☑	☑
-30 ~+85° C		☑	☑	☑	☑	☑
-40 ~+85° C			☑	☑	☑	☑

☑ Available please enquire  
 ☑ Standard

**NOTES :**

- 1) Tighter Tolerances and Stabilities and other Operating Temperature Ranges may be available. As each of these specification parameters impact on each other, it is not always possible to combine all options in one device. Therefore, if a specification not catered for above is required, please contact us directly for the relevant part number code(s).
- 2) ACT are always happy to consider truly custom specification parts which may require non-standard specification parameters, specific testing, customer requested AQL requirements, non standard packaging or taping and reeling and custom marking. Such devices would normally be allocated a custom specification part number which is wholly customer specific.  
 EG : A 12.00MHz custom ACT325MX-4 device may have a part number such as BT1200C- C1122-PF)
- 3) A guide to availability of tighter stabilities appears in Table 2 of the data sheet
- 4) Frequencies below 10.000MHz are prefixed with a "0" (eg: 0900 = 9MHz. Whereas 10.000MHz is 1000 ) See main data sheet for available frequency range.