

ACT530SMX-4

The **ACT530SMX-4 family** is a low cost, 4 pad, high quality, low aging 5x3.2mm 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 applications.

APPLICATIONS:

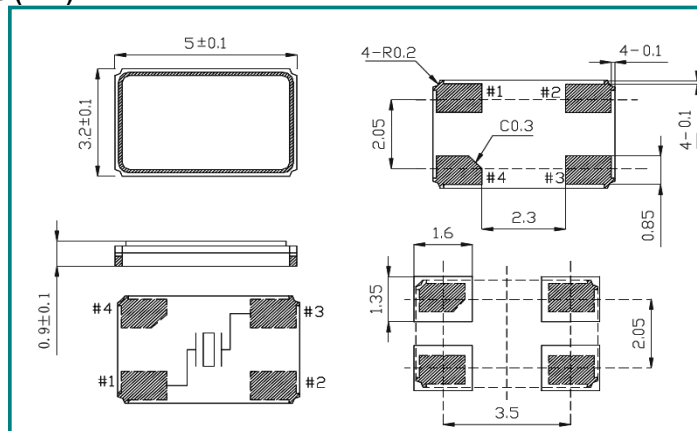
Bluetooth, WLAN, Audio-visual, Pagers, Card readers, Cellular, PC & Accessories, Notebook, Audio-visual, Process Control, Consumer & Communications



Specification

Parameter	Symbol	Specification	Condition
Frequency Range	f_0	10.0 ~ 150.0MHz (Standard Range)	Please specify
Frequency Tolerance (@25°C)	$\Delta f/f_0$	$\pm 5, \pm 10, \pm 15, \pm 20, \pm 30$ & ± 50 ppm(Std)	T_{at} Please specify
Stability over temp range	T_c	± 5 ppm ~ 50ppm (See table1, 2)	Please specify
Temp Operating Range	T_{opr}	0~+50°C ~ -40~+85°C (See table1, 2)	Please specify
Temp Storage Range	T_{stg}	-40 ~+85°C	
Equivalent Series Resistance	ESR	See table 2	
Load Capacitance	CL	10pF ~ 50pF & Series	(16,20 & 30pF Std. Please specify)
Shunt Capacitance	C0	5pF max	
Drive Level	DL	10 μ W typical (100 μ W max)	(Custom to 200 μ W available - Enquire)
Drive Level Dependency	DLD	ESR min to max <1.3 FL min to max <1.3	0.01, 0.1,1,10,50,100 μ W steps
Insulation Resistance	IR	500M Ω min	@100V DC
Aging	Fa	± 3 ppm p/year	(First year max @ 25°C)

Dimensions (mm)

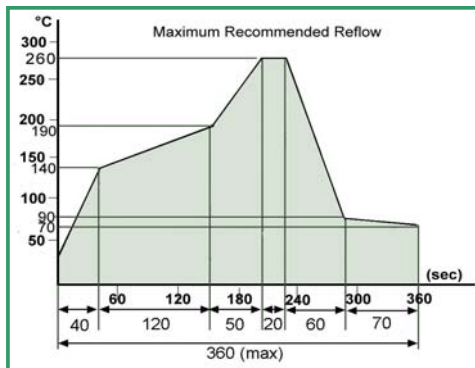


Pad Surface Material: Gold
(Au)

Connections

- #1. Crystal
- #2. Grounded to lid
- #3. Crystal
- #4. Grounded to lid

Reflow



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>

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Date: 25/11/10

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Table 1

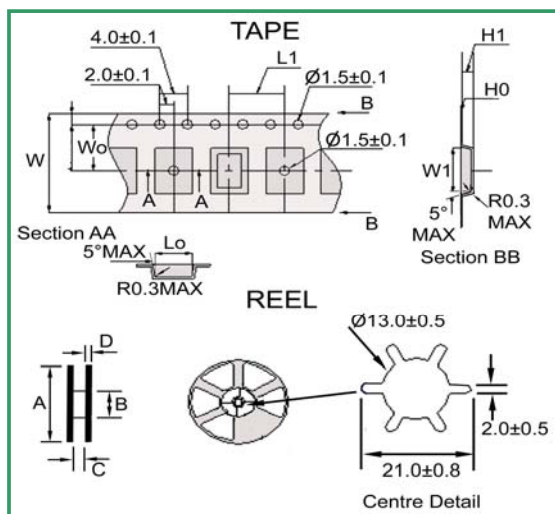
Stability Temp	+/- 5ppm	+/- 10ppm	+/- 20ppm	+/- 30ppm	+/- 50ppm	+
0~+50°C	+	+	+	+	+	See Table 2
-10~+60°C	+	+	+	+	+	+
-20~+70°C		+	+	+	+	Available stabilities
-30~+80°C		+	+	+	+	
-40~+85°C		+	+	+	+	Standard stabilities

Table 2

Frequency MHz	MAX ESR Ω	Tightest Tolerance ppm	Tightest stability ppm	Frequency MHz	MAX ESR Ω	Tightest Tolerance ppm	Tightest stability ppm
Fundamental				3rd Overtone			
F < 10Mhz	70	±10 ppm	-40~+85C ±30ppm -20~ 70C ±10ppm	F < 50Mhz	100	±15 ppm	-40~+85C ±20ppm -20~ 70C ±10ppm
10Mhz ≤ F < 12Mhz	60	±10 ppm	-40~+85C ±30ppm -20~ 70C ±10ppm	50Mhz ≤ F < 80Mhz	80	±15 ppm	-40~+85C ±20ppm -20~ 70C ±10ppm
12Mhz ≤ F < 14Mhz	50	±10 ppm	-40~+85C ±20ppm -20~ 70C ±10ppm	80Mhz ≤ F < 100Mhz	60	±15 ppm	-40~+85C ±15ppm -20~ 70C ±10ppm
14Mhz ≤ F < 19Mhz	40	±10 ppm	-40~+85C ±20ppm -20~ 70C ±10ppm	F ≥ 100Mhz	50	±15 ppm	-40~+85C ±15ppm -20~ 70C ±10ppm
19Mhz ≤ F < 24Mhz	35	±10 ppm	-40~+85C ±15ppm -20~ 70C ±10ppm				
24Mhz ≤ F < 32Mhz	25	±10 ppm	-40~+85C ±15ppm -20~ 70C ±10ppm				
F ≥ 32Mhz	20	±10 ppm	-40~+85C ±15ppm -20~ 70C ±10ppm				

Tape & Reel Specification (mm)

(1K pcs each reel)



Tolerance Dimension	TAPE							REEL			
	W	Wo	W1	Lo	L1	Ho	H1	A	B	C	D
	±0.2	±0.1	±0.1	±0.1	±0.1	±0.05	±0.1	+0/-3	±1	±1.5	±0.5
	12.0	5.5	5.4	3.5	8.0	0.3	1.1	178	80	13.5	2.0

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SERIES : ACT530MX-4 Part numbering code is BS

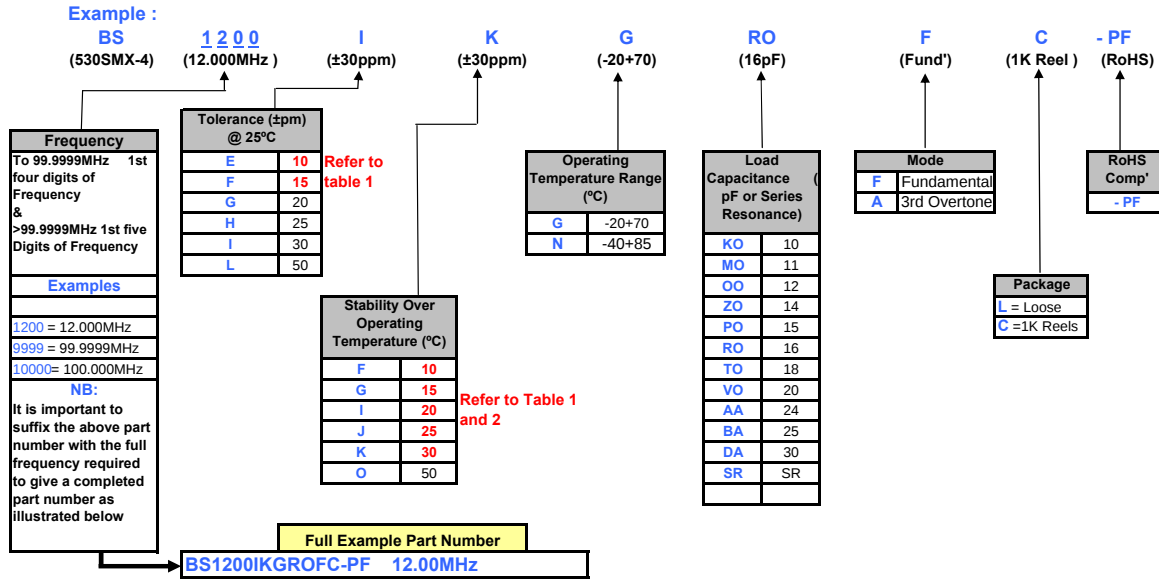


Table 1

Stability Temp	+/- 5ppm	+/- 10ppm	+/- 20ppm	+/- 30ppm	+/- 50ppm	
0~+50°C	+	+	+	+	+	See Table 2
-10~+60°C	+	+	+	+	+	Available stabilities
-20~+70°C		+	+	+	+	+
-30~+80°C		+	+	+	+	Standard stabilities
-40~+85°C		+	+	+	+	

Table 2

Frequency MHz	MAX ESR Ω	Tightest Tolerance ppm	Tightest stability ppm	Frequency MHz	MAX ESR Ω	Tightest Tolerance ppm	Tightest stability ppm
Fundamental				3rd Overtone			
F < 10MHz	70	±10 ppm	-40~+85C ±30ppm -20~ 70C ±10ppm	F < 50MHz	100	±15 ppm	-40~+85C ±20ppm -20~ 70C ±10ppm
10MHz ≤ F < 12MHz	60	±10 ppm	-40~+85C ±30ppm -20~ 70C ±10ppm	50MHz ≤ F < 80MHz	80	±15 ppm	-40~+85C ±20ppm -20~ 70C ±10ppm
12MHz ≤ F < 14MHz	50	±10 ppm	-40~+85C ±20ppm -20~ 70C ±10ppm	80MHz ≤ F < 100MHz	60	±15 ppm	-40~+85C ±15ppm -20~ 70C ±10ppm
14MHz ≤ F < 19MHz	40	±10 ppm	-40~+85C ±20ppm -20~ 70C ±10ppm	F ≥ 100MHz	50	±15 ppm	-40~+85C ±15ppm -20~ 70C ±10ppm
19MHz ≤ F < 24MHz	35	±10 ppm	-40~+85C ±15ppm -20~ 70C ±10ppm				
24MHz ≤ F < 32MHz	25	±10 ppm	-40~+85C ±15ppm -20~ 70C ±10ppm				
F ≥ 32MHz	20	±10 ppm	-40~+85C ±15ppm -20~ 70C ±10ppm				

NOTES :

- 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).
- 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 ACT530SMX-2 device may have a part number such as BS1200C- C1500-PF)
- A guide to availability of tighter stabilities appears in the tables above.
- Frequencies below 10.000MHz are prefixed with a "0" (eg: 0900 = 9MHz. Whereas 10.000MHz is 1000)