

# ACT630SMX-4

The **ACT630SMX-4 family** is a low cost, 4 pad, high quality, low aging 6x3.5mm 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 applications.

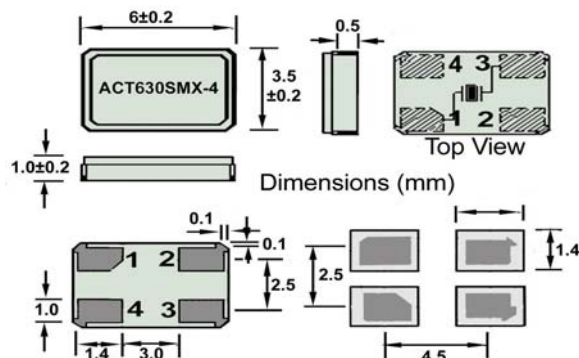
**APPLICATIONS:** Wireless, Audio-visual, ATM, Cordless Phones, Pagers, Micro clock, Notebook, Instrumentation, Office automation, Audio-visual, Process Control, Consumer & Communications.

## Specification

Parameter	Symbol	Specification	Condition
Frequency Range	f0	10.0 ~ 150.0MHz ( Standard Range)	Please specify
Frequency Tolerance (@25°C)	$\Delta f/f_0$	$\pm 5, \pm 10, \pm 15, \pm 20, \pm 30$ & $\pm 50$ ppm(Std)	Please specify
Stability over temp range	Tc	$\pm 5$ ppm ~ $50$ ppm (See table 2)	Please specify
Temp Operating Range	Topr	0~+50°C ~ -40~-+85°C ( See table 2)	Please specify
Temp Storage Range	Tstg	-40 ~+85°C	
Equivalent Series Resistance	ESR	See table 1	
Load Capacitance	CL	10pF ~ 50pF & Series	(16,20 & 30pF Std ) Please specify
Shunt Capacitance	C0	5pF max	
Drive Level	DL	0.01 ~ 100 $\mu$ W	(Custom to 200 $\mu$ W available - Enquire)
Drive Level Dependency	DLD	ESR min to max FL min to max <1.3	0.01, 0.1,1,10,50,100 $\mu$ W steps
Insulation Resistance	IR	500M $\Omega$ min	@100V DC
Aging	Fa	$\pm 3$ ppm p/year	(First year max @ 25°C)

Table 1

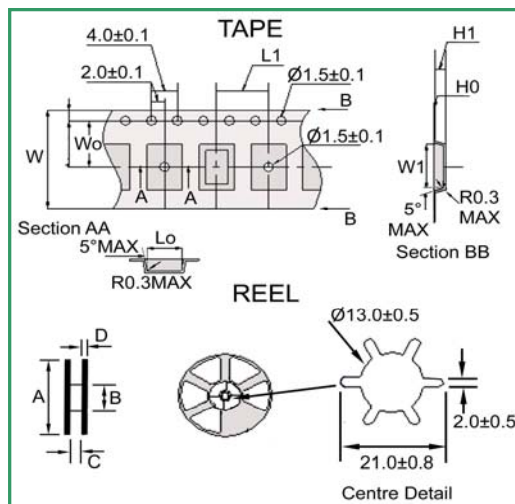
Freq. Range (MHz)	ESR ( $\Omega$ ) max	Mode / Cut
10.000 ~ 11.999	60	Fundamental / AT
12.000 ~ 14.999	50	Fundamental / AT
15.000 ~ 49.099	40	Fundamental / AT
45.000 ~ 79.999	90	3 <sup>RD</sup> Overtone / AT
80.000 ~ 90.000	90	3 <sup>RD</sup> Overtone / AT
90.001 ~ 150.000	150	3 <sup>RD</sup> Overtone / AT



## Connections

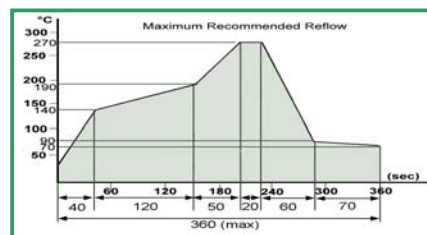
- #1. Crystal**  
**#2. Grounded to lid**  
**#3. Crystal**  
**#4. Grounded to lid**

Pad Surface Material: Gold (Au)



(mm)	TAPE							REEL			
	W	Wo	W1	Lo	L1	Ho	H1	A	B	C	D
Tolerance	±0.3	±0.05	±0.1	±0.1	±0.1	±0.05	±0.1	±1	±1	±0.5	±0.2
Dimension	12.0	5.5	6.5	4.0	8.0	0.3	1.4	178	80	13.5	2.0

Stability Temp	+/- 5ppm	+/- 10ppm	+/- 20ppm	+/- 30ppm	+/- 50ppm	<div> <div>+</div> <div>Available stabilities</div> </div> <div> <div>+</div> <div>Standard stabilities</div> </div>
0→+50°C	+	+	+	+	+	
-10→60°C	+	+	+	+	+	
-20→70°C		+	+	+	+	
-30→80°C		+	+	+	+	
-40→85°C		+	+	+	+	



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 evolvement and improvement, the above specification may subject to change without notice

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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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## SERIES : ACT630SMX-4 Part numbering code is CD

Example :

CD 1200 I K G RO F C - PF  
630SMX-4 (12.000MHz) ( $\pm 30$ ppm) ( $\pm 30$ ppm) (-20+70) (16pF) (Fund') (1K Reel) (RoHS)

Frequency
6-9.999MHz 0 and 1st 3 digits of frequency
10-99.9999MHz 1st four digits of Frequency.
100-150 1st five digits of Frequency.
<b>Examples</b>
0983 = 9.8304MHz
1200 = 12.000MHz
7999 = 79.9999MHz
11250 = 112.500MHz
<b>NB:</b>
It is important to suffix the above part number with the full frequency required to give a completed part number as illustrated below

Tolerance ( $\pm$ ppm) @ 25°C	
A	5
E	10
F	15
G	20
H	25
I	30
L	50

Stability Over Operating Temperature (°C)	
B	5
F	10
G	15
I	20
K	30
O	50
V	100

Operating Temperature Range (°C)	
E	-10+60
F	-0+50
G	-10+70
W	-30+65
T	-30+70
H	-20+85
K	-30+80
M	-40+85

Load Capacitance (pF or Series Resonance)	
GO	8
JO	9
KO	10
MO	11
OO	12
ZO	14
PO	15
RO	16
TO	18
VO	20
AA	24
BA	25
DA	30
SR	SR

Mode	
F	Fundamental
A	3rd Overtone

RoHS Comp'	
-PF	-PF

Package	
L	Loose
C	1K Reels

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

Full Example Part Number

CD1200IKGROFC - PF 12.0000MHz

### NOTES :

- 1) Tighter Tolerances and Stabilities and other Operating Temperature Ranges may be available.
- 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 12.000MHz custom ACT630SMX-4 device may have a part number such as CD1200C- C1122-PF)
- 3) A guide to availability of tighter stabilities appears on page one of this data sheet in Table 2
- 4) Frequencies below 10.000MHz are prefixed with a "0" (eg: 0900 = 9MHz. Whereas 10.000MHz is 1000 )

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