

ACT631SMX-4

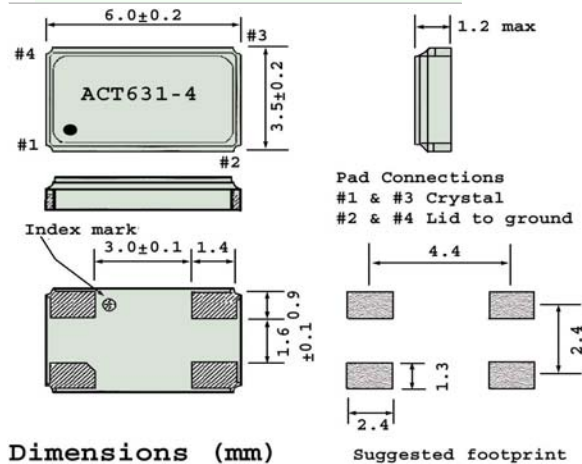
The **ACT631SMX-4** is a 4 pad, high quality, low aging, metal seam, packaged crystal suitable for automatic placement on printed circuit boards. It utilises a ceramic base and metal lid for durability. the lid is grounded through the package and the pads are gold plated. With a wide frequency range, and tight stability it has become one of the optimum choices for design engineers. **Applications** include Communications, Microprocessor Systems, Instrumentation and many more.

Specification

Parameter	Symbol	Specification	Condition
Frequency Range	f_0	10.00 ~ 120.00 MHz	Please specify
Frequency Tolerance (@25°C)	$\Delta f/f_0$	$\pm 10, \pm 15, \pm 30, \pm 50$ & ± 100 ppm	(± 7.5 ppm available to 24.999MHz)
Stability over Temp Range	T_c	See Table 2	Please specify
Temp Operating Range	T_{opr}	-10~+60°C, -20~+70°C, -40~+85°C	Please specify
Temp Storage Range	T_{stg}	-40 ~ +85°C	
Equivalent Series Resistance	ESR	See Table 1	
Load Capacitance	CL	8 ~ 50pF or Series	Please specify
Shunt Capacitance	C0	7pF max	
Drive Level	DL	100 μ W Typical	(100 μ W ~ 1.0mW options available)
Insulation Resistance	IR	500M Ω min	@100V DC
Aging	Fa	± 5 ppm / year max	@25°C

Table 2

Frequency Range (MHz)	ESR (Ω) max	Mode
10.000~11.999	70	Fundamental
12.000~19.999	60	Fundamental
20.000~34.999	50	Fundamental
35.000~43.999	40	Fundamental
44.000~120.000	80	3 rd Overtone



Pad Surface Material Gold (Au)

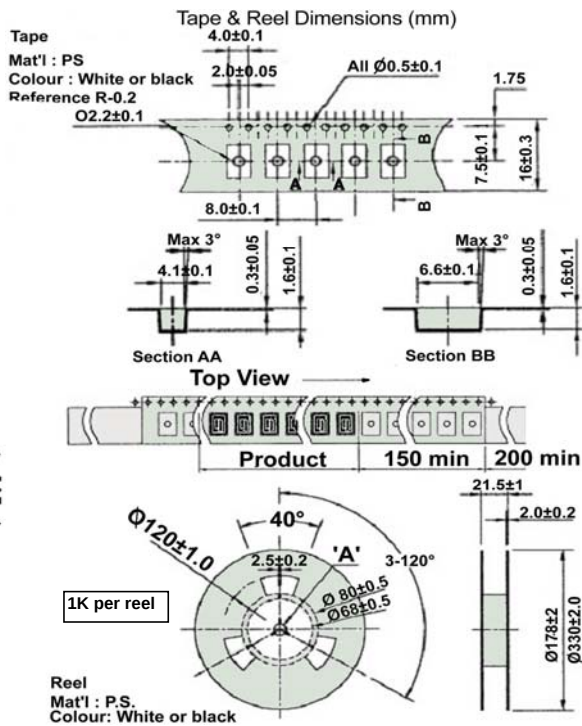
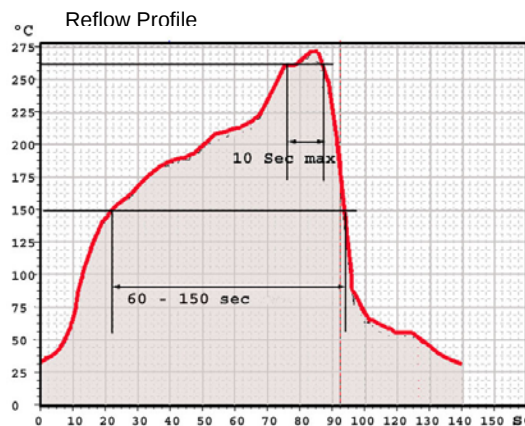


Table 2		Frequency Stability v Temperature (ppm)							
Temp	Stability ppm	+/- 5	+/- 7.5	+/- 10	+/- 15	+/- 20	+/- 30	+/- 50	+/- 100
0~+60°C	✓	✓	✓	✓	✓	✓	✓	✓	✓
-10~+60°C		✓	✓	✓	✓	✓	✓	✓	✓
-10~+70°C		✓	✓	✓	✓	✓	✓	✓	✓
-20~+70°C		✓	✓	✓	✓	✓	✓	✓	✓
-30~+65°C		✓	✓	✓	✓	✓	✓	✓	✓
-30~+70°C			✓	✓	✓	✓	✓	✓	✓
-20~+85°C				✓	✓	✓	✓	✓	✓
-30~+85°C				✓	✓	✓	✓	✓	✓
-40~+85°C				✓	✓	✓	✓	✓	✓
-40~+90°C						✓	✓	✓	✓
-40~+105°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 evolution and improvement, the above specification may be 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>

SERIES : ACT631SMX-4 Part numbering code is PA

Example :

PA 1200 I K G RO F C - PF
631SMX-4 (12.000MHz) (±30ppm) (±30ppm) (-20+70) (16pF) (Fund') (1K Reel) (RoHS)

Frequency
6-9.999MHz 0 and 1st 3 digits of frequency
10-99.999MHz 1st four digits of Frequency. See note 4. 100-120MHz first five digits of frequency.

Examples
0983 = 9.8304MHz
1200 = 12.000MHz
7999 = 79.9999MHz
12525 = 125.250MHz

NB:
It is important to suffix the above part number with the full frequency required to give a completed part number as illustrated below

Tolerance (±ppm) @ 25°C
C 7.5 *
E 10
F 15
G 20
H 25
I 30
L 50
N 100

* Only available for fo <25MHz

Stability Over Operating Temperature (°C)
B 5
B 7.5
F 10
G 15
I 20
K 30
O 50
V 100

Operating Temperature Range (°C)
E -10+60
B -0+60
F -10+70
G -20+70
W -30+65
T -30+70
H -20+85
L -30+85
M -40+85
N -40+90
Y -40+105

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

Package
L = Loose
C = 1K Reels

Full Example Part Number
PA1200IKGROFC - PF 12.0000MHz

Table 2 Frequency Stability v Temperature (ppm)								
Temp	Stability ppm	+/- 5	+/- 7.5	+/- 10	+/- 15	+/- 20	+/- 30	+/- 50
0-+60°C	✓	✓	✓	✓	✓	✓	✓	✓
-10+60°C			✓	✓	✓	✓	✓	✓
-10-+70°C			✓	✓	✓	✓	✓	✓
-20-+70°C			✓	✓	✓	✓	✓	✓
-30-+65°C			✓	✓	✓	✓	✓	✓
-30-+70°C				✓	✓	✓	✓	✓
-20-+85°C				✓	✓	✓	✓	✓
-30-+85°C					✓	✓	✓	✓
-40-+85°C					✓	✓	✓	✓
-40-+90°C						✓	✓	✓
-40-+105°C							✓	✓

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 12.00MHz custom ACT631SMX-4 device may have a part number such as PA1200C- C1122-PF)
- 3) A guide to availability of tighter stabilities appears on page one of this data sheet and above 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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