

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.

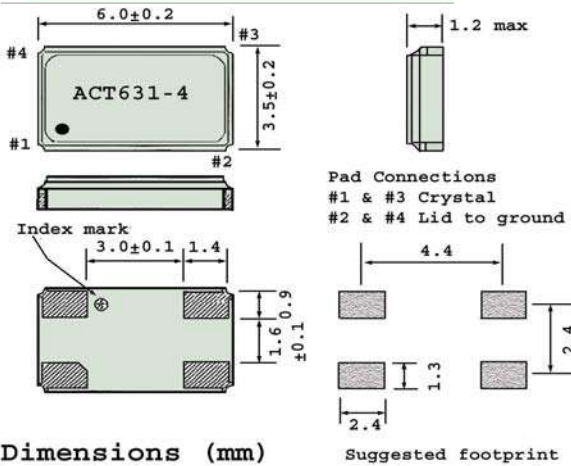


Specification

Parameter	Symbol	Specification	Condition
Frequency Range	fo	10.00 ~ 120.00 MHz	Please specify
Frequency Tolerance (@25°C)	Δf/fo	±10,±15,±30,±50 & ±100ppm	(±7.5ppm available to 24.999MHz)
Stability over Temp Range	Tc	See Table 2	Please specify
Temp Operating Range	Topr	-10~+60°C,-20~+70°C,-40~+85°C	Please specify
Temp Storage Range	Tstg	-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	100µW Typical	(100µW ~ 1.0mW options available)
Insulation Resistance	IR	500MΩ min	@100V DC
Aging	Fa	±5ppm / 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)

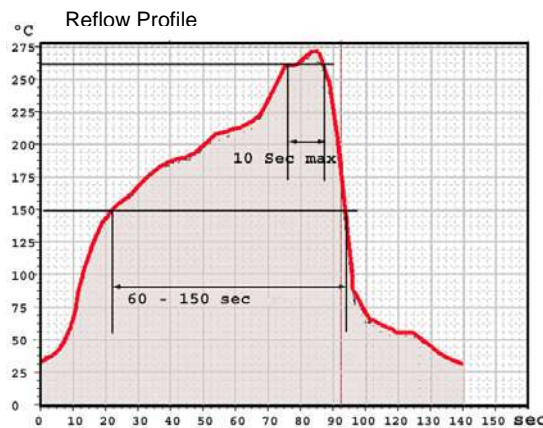
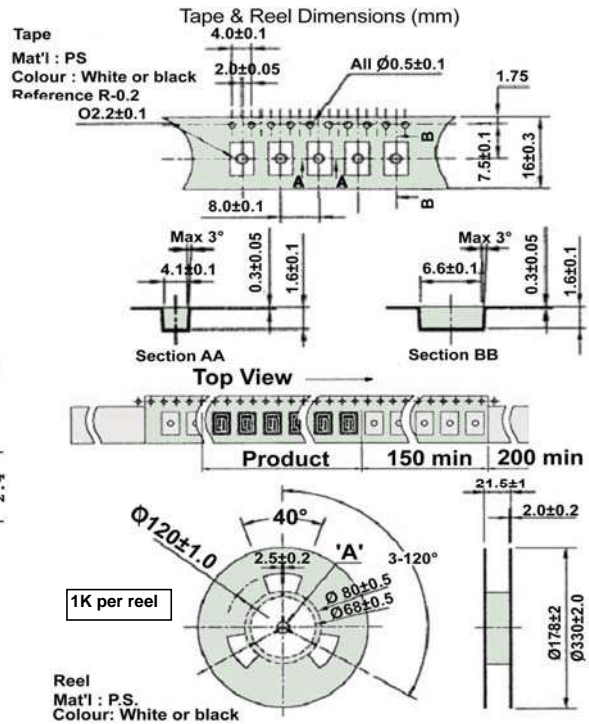


Table 2		Frequency Stability v Temperature (ppm)							
Temp	Stability ppm	+/- 5	+/- 7.5	+/- 10	+/- 15	+/- 20	+/- 30	+/- 50	+/- 100
0~+60°C	✓	✓	✓	✓	✓	✓	✓	✓	✓
-10~+60°C		✓	✓	✓	✓	✓	✓	✓	✓
-10~+70°C			✓	✓	✓	✓	✓	✓	✓
-20~+70°C			✓	✓	✓	✓	✓	✓	✓
-30~+65°C			✓	✓	✓	✓	✓	✓	✓
-30~+70°C				✓	✓	✓	✓	✓	✓
-20~+85°C					✓	✓	✓	✓	✓
-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:

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<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) (± 30 ppm) (± 30 ppm) (-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 (\pm 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

Package	
L	Loose
C	1K Reels

RoHS Comp'	
	- PF

Full Example Part Number
PA1200IKGROFC - PF 12.000MHz

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							✓	✓	✓

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)