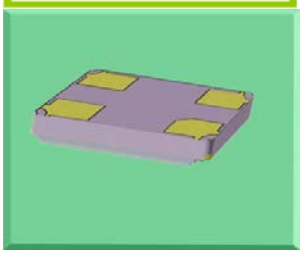
Tel : 0044 (0)118 979 1238
Fax : 0044 (0)118 979 1283
email : info@actcrystals.com

ACT2016SMX-4

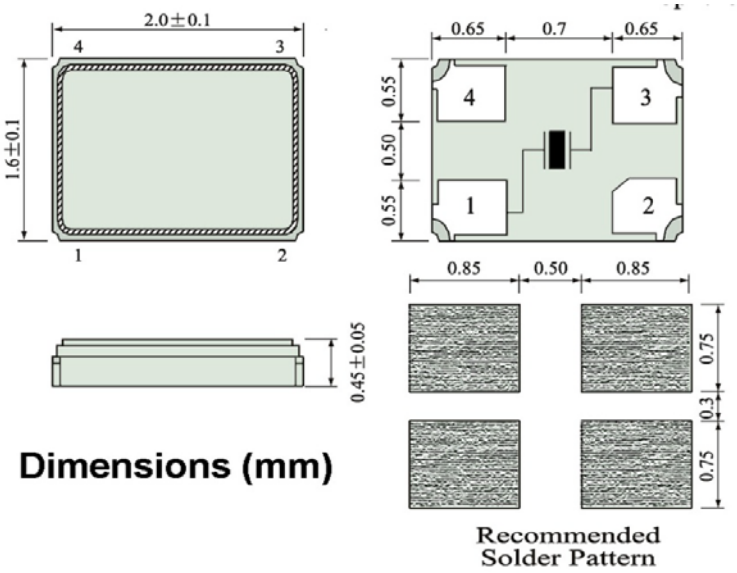
Compatible with Eu Directive 2002/EC - RoHS



The **ACT2016SMX-4** is an extremely compact, high quality, low aging, seam welded crystal. Utilising a ceramic base with a metal lid, it provides for the durability and reliability, necessary for strenuous processes like infrared and vapour reflow. The lid is grounded through the package, to assist with EMC Issues, and the pads are gold plated. The device is very suitable for automatic placement on PCB's. With an excellent range of frequencies and stabilities it is an optimum choice for designs where PCB space is at a premium. **Applications** include: PDA, Cellular, MPU Clocks, ISM, Bluetooth, WLan, and consummer electronics. Available loose or on reels (Standard 3,000 pieces / reel.).

Specification

Parameter	Symbol	Specification	Condition
Frequency Range	fo	24.00 ~ 54.00 MHz AT Fundamental	Please specify
Frequency Tolerance	Δf/fo	±10ppm ~ 30ppm @25°C±3°C (refer to table 2)	Please Specify
Stability over Temp Range	Tc	±10ppm ~ 30ppm (refer to table 2)	Please specify
Temp Operating Range	Topr	-20 ~ +70°C Standard (refer to table 2)	Please specify
Temp Storage Range	Tstg	-40 ~ +85°C	
Equivalent Series Resistance	ESR	Please refer to Table 1	
Load Capacitance	CL	8 ~ 16pF	Please specify
Shunt Capacitance	C0	3pF max	
Drive Level	DL	50μW typical (100μW max)	
FDLD		d+/-30% ESR	20 steps
RDLD		d+/-10ppm	20 steps
Insulation Resistance	IR	500MΩ min	@100V DC
Reflow Process		10 Seconds @ 260°C (max)	
Aging	Fa	±2ppm / 1st year max	@25°C



Dimensions (mm)

Recommended Solder Pattern

Table 1

Frequency(MHz)	ESR Ω max	Mode
24.0~24.999	100	Fundamental
25.0~35.999	80	Fundamental
36.0~60.000	60	Fundamental

Pad surface material
Au

Standard frequencies (MHz) :

24.000, 26.000, 32.000, 38.400, 40.000, 48.000

Table 2

		±10ppm	±20ppm	±30ppm
Tolerance	25°C	☑	☑	☑
Stability	-20~+70°C	☑	☑	☑
	-30~+85°C	☑	☑	☑
	-40~+85°C		**E**	**E**

E: Enquire

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 be subject to change without notice

ISO9001:2000 Registered

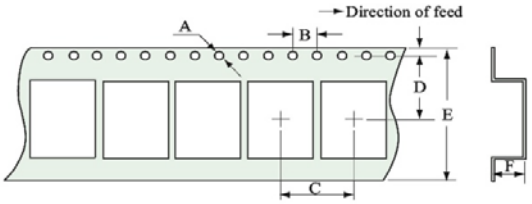
For quotations or further information please contact us at:
3 The Business Centre, Molly Millars Lane, Wokingham, Berkshire, RG41 2EY, UK
http://www.actcrystals.com

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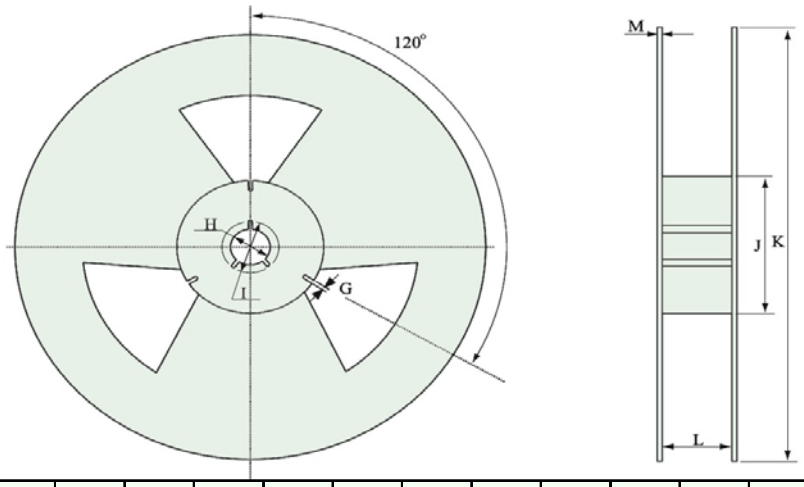
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ACT2016SMX-4 Series Tape Dimensions (Units in mm)

* Standard: 3,000 piece reels

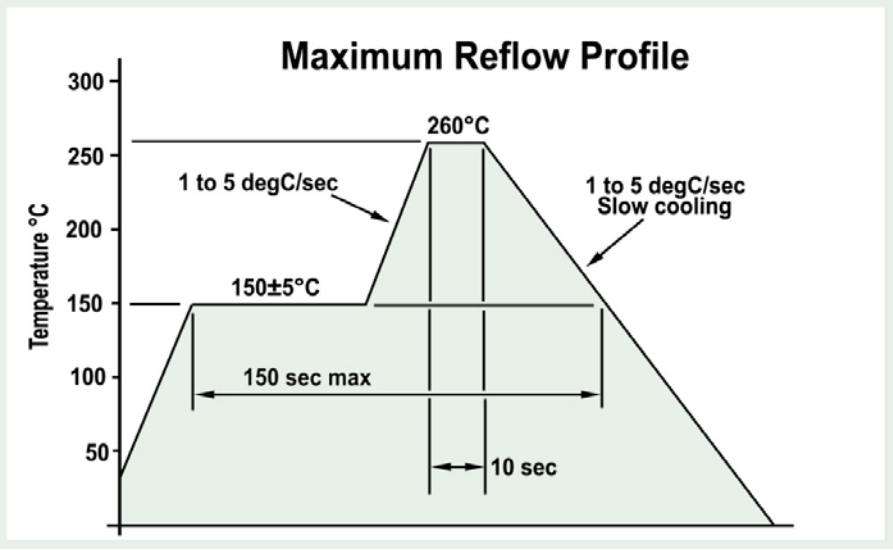


Tape and Reel Dimensions (mm)



A	B	C	D	E	F	G	H	I	J	K	L	M
Ø 1.5	4.0	4.0	1.75	8.0	1.0	2.5	Ø 13.5	Ø 21.6	Ø 60.0	Ø 180	9.5	1.6

Reflow Information



In line with our ongoing policy of product evolvement and improvement, the above specification may be subject to change without notice

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SERIES : ACT2016SMX-4 Part numbering code is CX

Example :

CX	2400	I	K	G	KO	F	D	(#)	- PF
(ACT2016SMX-4)	(24.00MHz)	(±30ppm)	(±30ppm)	(-20+70)	(10pF)	(Fund')	(3K Reel)		(RoHS)

Frequency
To 99.9999MHz 1st four digits of Frequency

Examples

12.000MHz = 1200
59.9999MHz = 5999

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) @ 25ºC

E	10
F	15
G	20
H	25
I	30
L	50

Stability Over Operating Temperature (ºC)

F	10
G	15
I	20
J	25
K	30
O	50

Operating Temperature Range (ºC)

G	-20+70
L	-30+85
M	-40+85

Load Capacitance (pF or Series Resonance)

GO	8
JO	9
KO	10
MO	11
OO	12

Mode

F	Fundamental

Package
L = Loose
D =3K Reels

RoHS Comp'
- PF

Full Example Part Number
CX2400IKGKOFD-PF 24.00MHz

Commodity Code
854160 00 00

Table 2

		±10ppm	±20ppm	±30ppm
Tolerance	25°C	☑	☑	☑
Stability	-20~+70°C	☑	☑	☑
	-30~+85°C	☑	☑	☑
	-40~+85°C		E	E

Tighter aging may be available please enquire. Leave blank for standard aging.

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 24.00MHz custom ACT2016MX-4 device may have a part number such as CX2400C- C1133-PF)

3) **A guide to availability of tighter stabilities appears in Table 2 of the data sheet**