

ACT421LCSMX-4 (Preferred type)

The **ACT421LCSMX-4** is a 4 pad, high quality, low aging SMD Crystal in a ceramic base / metal lid package, seam welded for good long term reliability. The lid is grounded through the package to assist with EMI issues and the pads are gold plated. Its wide frequency range and frequency tolerance / stability options with its small size make the device ideal for many applications including Bluetooth, Notebook, PCMCIA, Instrumentation, Microprocessor Systems and Wireless / Communications equipment. Available loose or on 2K reels to suit high/low volume requirements.



Specification

Parameter	Symbol	Specification	Condition
Frequency	fo	12 ~ 48MHz For frequencies not shown in table 1 please enquire for availability.	Fundamental
Frequency Tolerance	$\Delta f/fo$	$\pm 10\text{ppm} \sim \pm 30\text{ppm}$ @25°C	Refer to table 3 Please specify
Stability over temp range	Tc	$\pm 10\text{ppm} \sim \pm 30\text{ppm}$	Refer to table 3 Please specify
Temp Operating Range	Topr	-20 ~ +70°C STD(-40 ~ +85°C Option)	Please specify
Temp Storage Range	Tstg	-40 ~ +85°C	
Equivalent Series Resistance	ESR	See Table 2	
Load Capacitance	CL	8~16pF	Please specify
Shunt Capacitance	C0	5pF max	
Drive Level	DL	10 μ W (300 μ W max)	
Insulation Resistance	IR	500M Ω min	@100V DC
Aging	Fa	$\pm 2\text{ppm}$ / year max	@25°C
Shock		Drop test 3 times onto 2mm stainless steel from 75cm	
Reflow		260°C for 10 seconds max	

Pad termination 0.3 -1.0 μ m over 1.3-8.8 μ m Ni

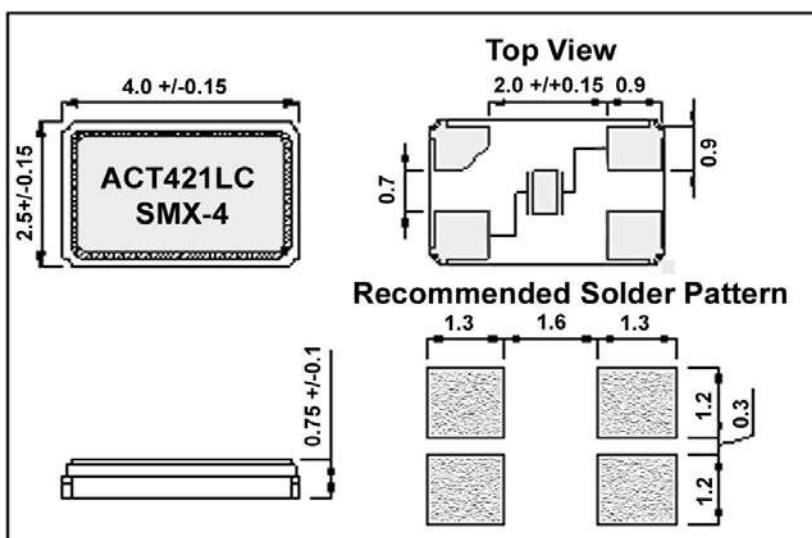


Table 1

Available Fundamental Frequencies

12.000MHz
 13.000MHz
 14.31818MHz
 16.000MHz
 20.000MHz
 24.576MHz
 25.000MHz
 26.000MHz
 27.000MHz
 30.000MHz
 32.000MHz
 35.328MHz
 40.000MHz
 48.000MHz

Table 2

ESR (Max)	
12MHz to 19.999MHz	80 Ω
20MHz to 25.99MHz	70 Ω
26MHz to 48MHz	50 Ω

Table 3

		$\pm 10\text{ppm}$	$\pm 15\text{ppm}$	$\pm 20\text{ppm}$	$\pm 30\text{ppm}$
Tolerance	25°C	☒	☒	☒	☒
Stability	-20 ~ +70°C	Enquire	☒	☒	☒
	-40 ~ +85°C	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

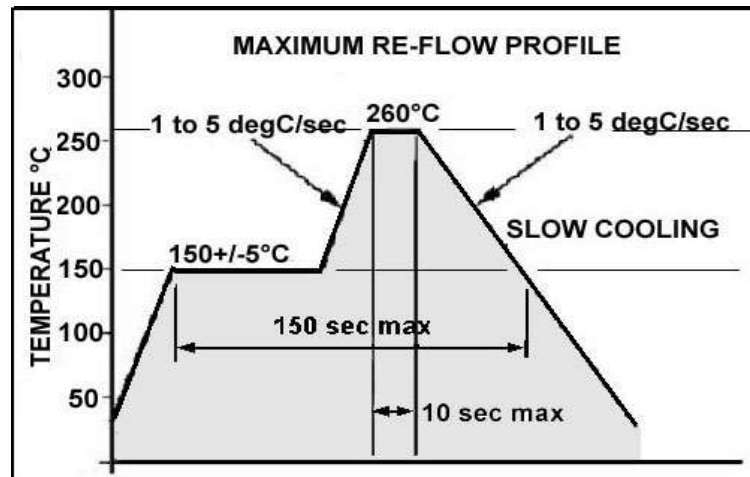
In line with our ongoing policy of product evolution and improvement, the above specification may subject to change without notice

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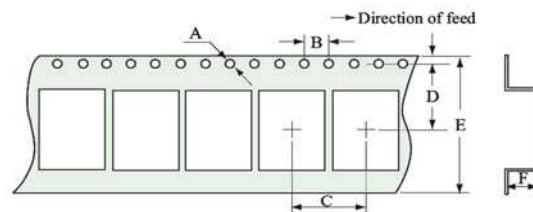
For quotations or further information please contact us at:

3 The Business Centre, Molly Millars Lane, Wokingham, Berkshire, RG41 2EY, UK

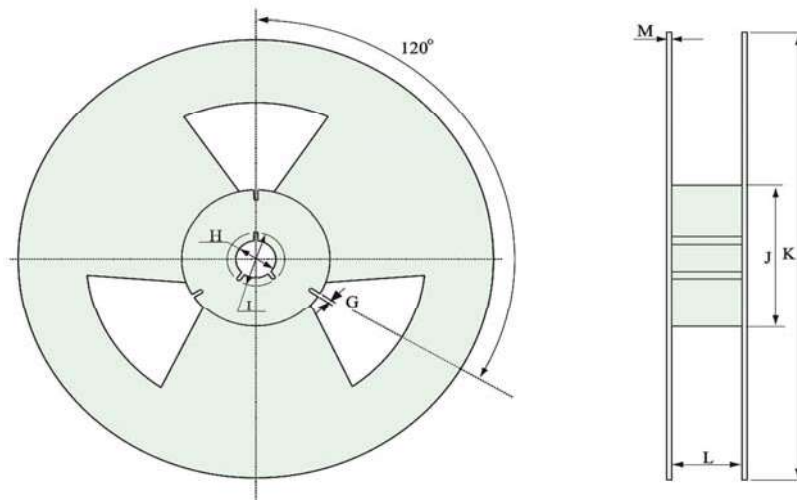
<http://www.actcrystals.com>



Tape and Reel Minimum Reel size = 3K pieces



Tape and Reel Dimensions (mm)



A	B	C	D	E	F	G	H	I	J	K	L	M
1.5	4.0	4.0	3.5	12.0	1.0	2.5	13.5	21.6	60	178	13	1.2

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SERIES : ACT421LCSMX-4 Part numbering code is BW

NOT RECOMMENDED FOR NEW DESIGNS

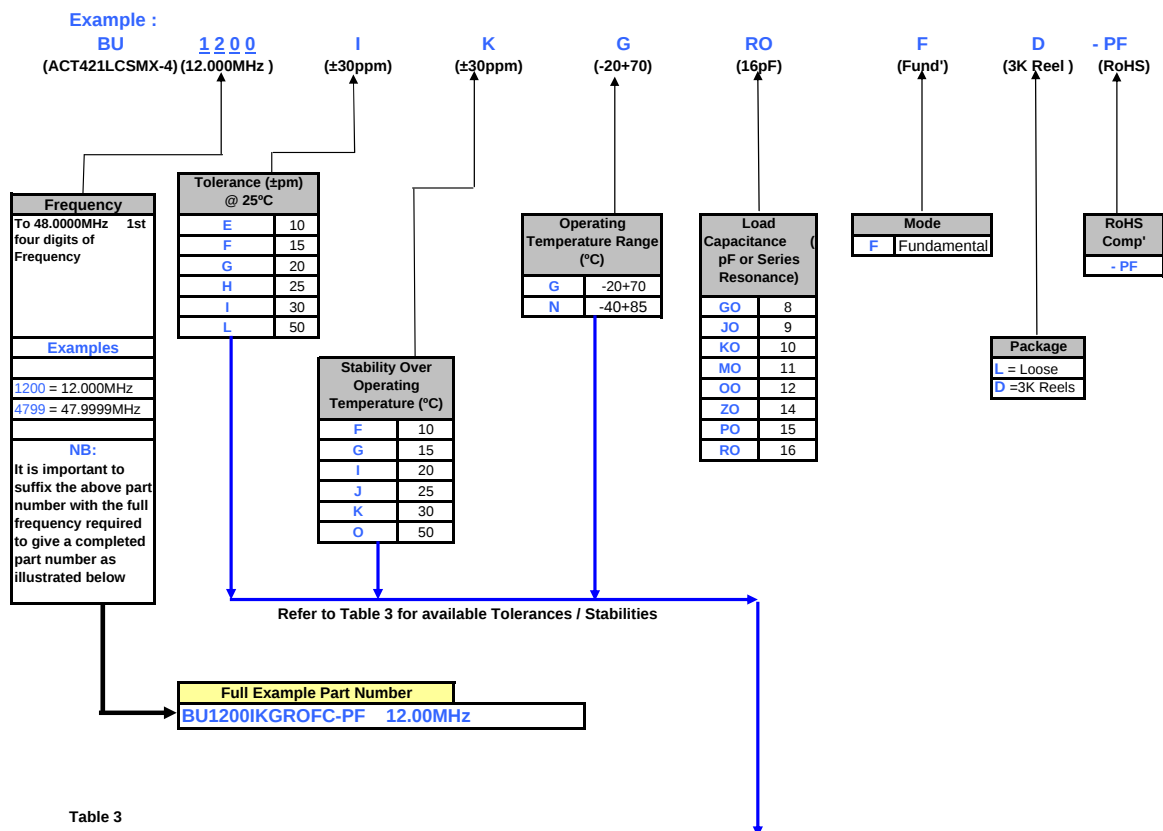


Table 3

		±10ppm	±15ppm	±20ppm	±30ppm
Tolerance	25°C	☑	☑	☑	☑
Stability	-20 ~ +70°C	Enquire	☑	☑	☑
	-40 ~ +85°C	Enquire	☑	☑	☑

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 ACT421LCSMX-4 device may have a part number such as BU1200C- C1122-PF)
- 3) A guide to availability of tighter stabilities appears on page one of this data sheet in Table 3
- 4) Frequencies below 10.000MHz are prefixed with a "0" (eg: 0900 = 9MHz. Whereas 10.000MHz is 1000)

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