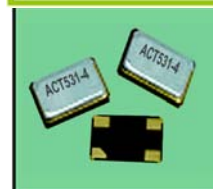


## ACT531SMX-4

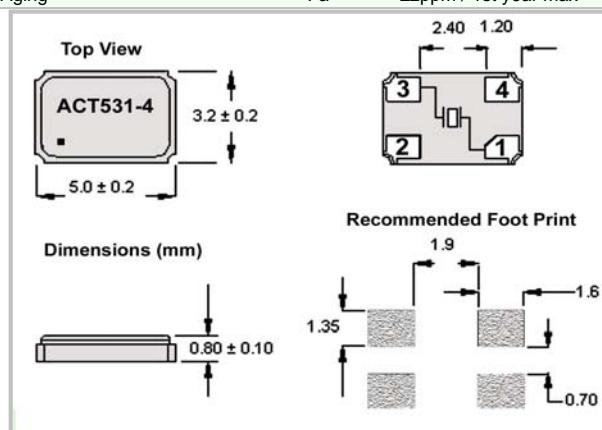
The **ACT531SMX-4** is a 4 pad, high quality, low aging, seam welded packaged crystal. Utilising a ceramic base with a metal lid, it provides for the durability and reliability, necessary for strenuous processes like infrared and vapour reflow. The lid is grounded through the package and the pads are gold plated. The device is very suitable for automatic placement on PCB's. With an excellent range of frequencies and stabilities it has become one of the optimum choices for design engineers. **Applications** include Communications, Microprocessor Systems, Instrumentation and particularly Wireless Communications applications. Available loose or on 1,000pc reels.

Compatible with Eu Directive  
2002/EC - RoHS



### Specification

Parameter	Symbol	Specification	Condition
Frequency Range	fo	12.00 ~ 48.00 MHz	Please specify
Frequency Range	fo	9.8304 ~ 11.99 MHz For availability please enquire.	
Frequency Tolerance	$\Delta f/fo$	$\pm 10\text{ppm} \sim 50\text{ppm}$ (@25°C $\pm 3^\circ\text{C}$ ) refer to table 2	Please Specify
Stability over Temp Range	Tc	$\pm 10\text{ppm} \sim 50\text{ppm}$ refer to table 2	Please specify
Temp Operating Range	Topr	-20 ~ +70°C	Please specify
Temp Storage Range	Tstg	-40 ~ +85°C	
Equivalent Series Resistance	ESR	Please refer to Table 1	
Load Capacitance	CL	8 ~ 30pF or Series Resonance	Please specify
Shunt Capacitance	C0	7pF max	
Drive Level	DL	10 $\mu\text{W}$ ~ 300 $\mu\text{W}$ max. (100 $\mu\text{W}$ Typical)	
Drive level dependency	DLD2	$\leq 30\%$ ESR	20 points
	FOLD	$\leq \pm 10\text{ppm}$	
Insulation Resistance	IR	500M $\Omega$ min	@100V DC
Reflow Process		10 Seconds ( max ) @260°C	
Aging	Fa	$\pm 2\text{ppm} / 1\text{st year max}$	@25°C



Pad surface material Au

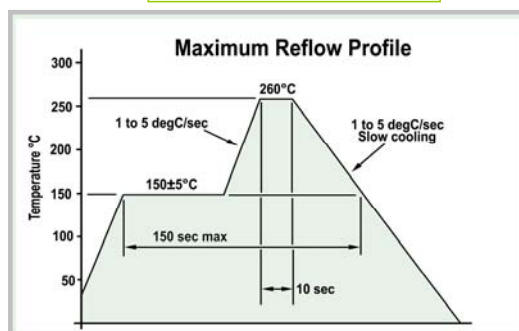


Table 1

Frequency(MHz)	ESR $\Omega$ max	Mode
10.0~19.999	100	Fundamental
20.0~29.999	70	Fundamental
30.0~48.0	50	Fundamental

Table 2

		$\pm 10\text{ppm}$	$\pm 15\text{ppm}$	$\pm 20\text{ppm}$	$\pm 30\text{ppm}$	$\pm 50\text{ppm}$
<b>Tolerance</b>	25°C	☑	☑	☑	☑	☑
	-20~+70°C	☑	☑	☑	☑	☑
<b>Stability</b>	-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 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

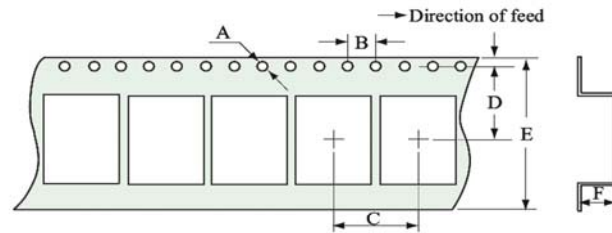
<http://www.actcrystals.com>

Issue 11 H2

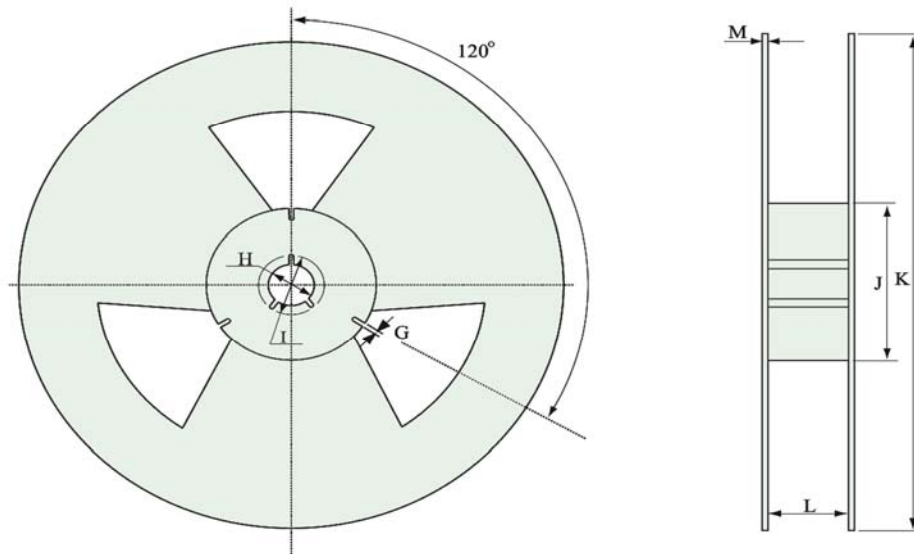
Date: 16-02-2011

**ACT531SMX-4 Series Tape Dimensions ( Units in mm )**

**\* 1,000 piece reels**



**Tape and Reel Dimensions (mm)**



A	B	C	D	E	F	G	H	I	J	K	L	M
1.5	4.0	8.0	5.5	12.0	1.5	2.5	13.5	21.6	60.0	178.0	13.5	1.6

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

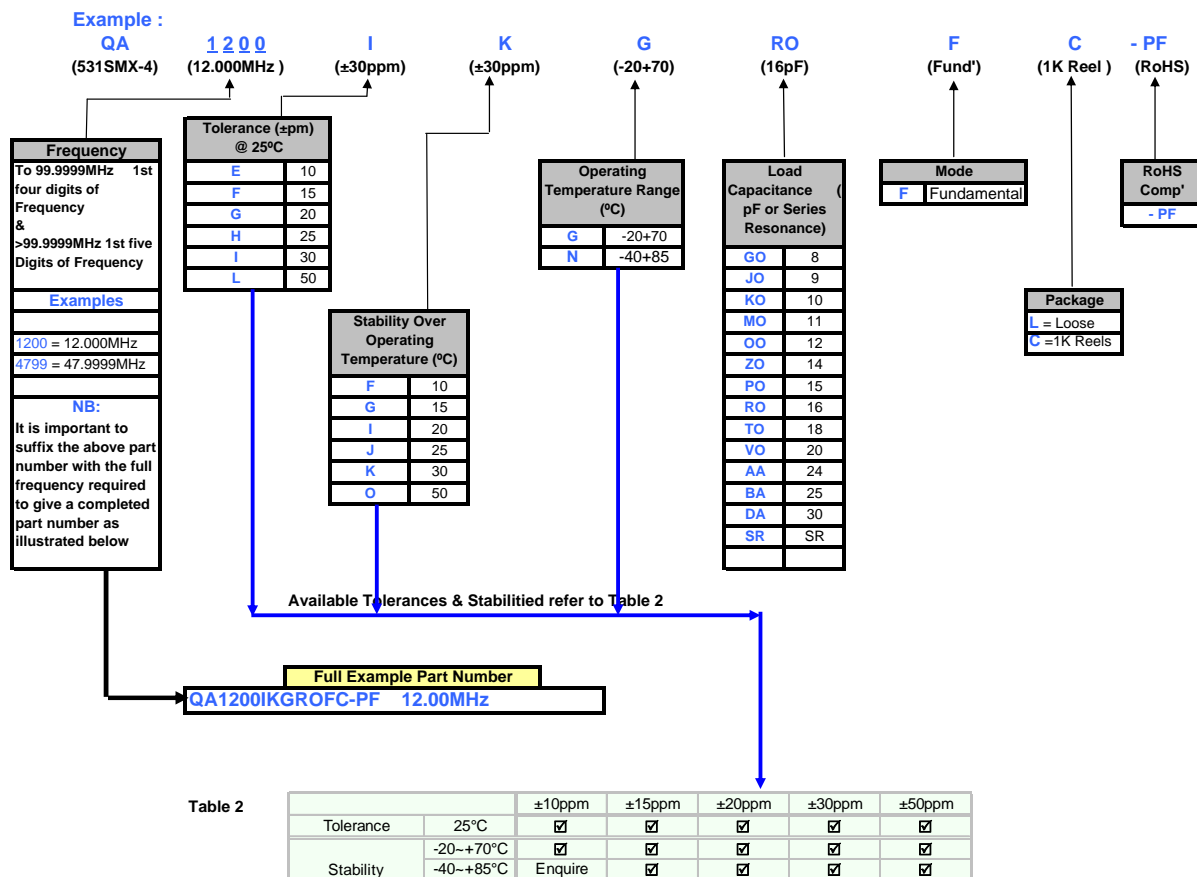
**ISO9001:2000 Registered**

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 : ACT531MX-4 Part numbering code is QA



## NOTES :

- 1) Tighter Tolerances and Stabilities to ±5 & ±8ppm & 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 12.00MHz custom ACT531SMX-4 device may have a part number such as QA1200C- 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 )