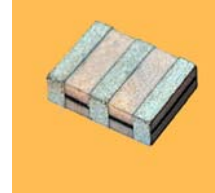


## ZTTCV SMD Resonators

The ACT ZTTCV families comprise of a range of surface mount, ceramic resonators ("chip" type) in both two and three pad format. Three pad versions have built in capacitors. This family offers a cost effective solution for applications requiring good stability over a wide temperature range, together with accuracy.

Compatible with Eu Directive 2002/95/EC - RoHS  
 Contains Pb in ceramic parts exempted from article 4(1) of the directive

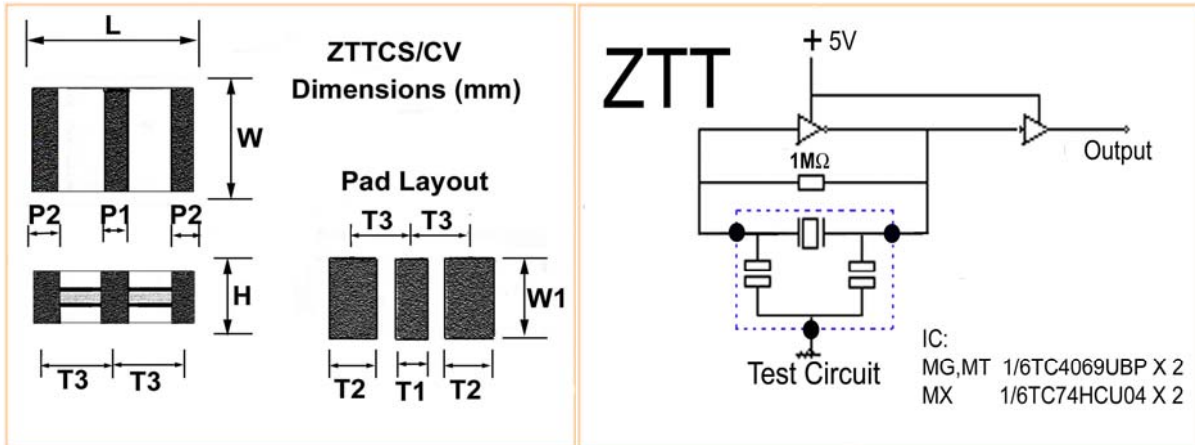


### Specification

Part Type/ Number	Frequency Range (MHz)	Test IC	Frequency Accuracy % (-20 ~ +80 °C)	Stability over temp. range (-20 ~ +80°C)	Aging over Ten Year (%)	Capacitors (pF) Internal C1 & C2
ZTTCV MT Mode Thickness expander	7.68-13#	1/6TC4069UBPx2	± 0.5	±0.4%	± 0.3	22 internal
ZTTCV MX Mode Thickness expander 3rd O/T	13.01-50 50.01-60	74HCU04 x 2	± 0.5	± 0.4%	± 0.3	22 Internal

Specification may vary from above please enquire

#For frequencies from 7.68 to 8.0MHz ACT CC MG series is recommended as the characteristics are better.



	L	W	H	P1	P2	T1	T2	T3	W1
	±0.2	±0.2	±0.3	±0.3	±0.3	±0.2	±0.2	±0.2	±0.2
ZTTCV MT/MX	3.7	3.1	1.2	0.9	0.7	1.0	0.7	1.5	4.1

#### Important note when using Ceramic resonators with micro controllers:

Some resonator parameters vary considerably with frequency and physical construction/size . These differences are too great to be able to be practically shown in a data sheet.

However, these parameters are critical when the resonators are used with micro controllers. Even if two different resonators appear to have the same specification the typical values of these critical parameters can be considerably different. When enquiring about resonators for use with micro controllers it is important to supply the make and part number of the IC to be used and/or the list of recommended resonators, if this is given.

Please note that all parameters can not necessarily be specified in the same device

Customer to specify : Frequency, Package Type and Size

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

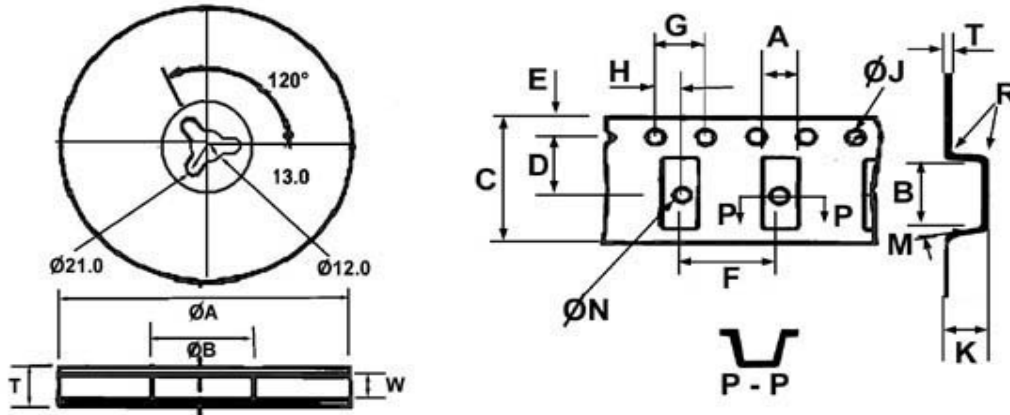
ISO9001:2000 Registered

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

Issue: 7 C1r  
 Date: 10/10/05

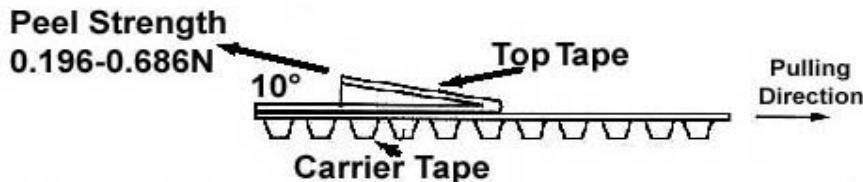
<http://www.actcrystals.com>

ZTTCV SMD TAPE AND REEL / SOLDERING INFORMATION

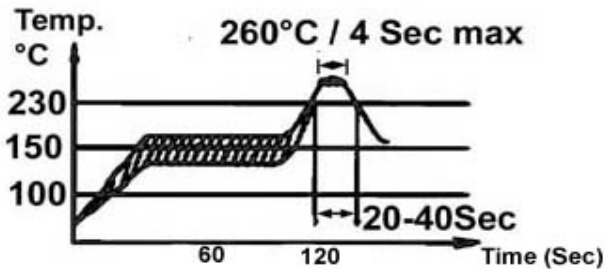


	ØA	ØB	W	T	Pieces / reel	Carrier Tape (mm)
CS/CV	179±2	60typ	12.4min	19.4max	1000typ	12
	179±2	60typ	16.4min	22.4max	1000typ	16
CC	330±3	80min	12.4min	19.4max	4000typ	12
	330±3	80min	22.4min	22.4max	4000typ	16

	A	B	C	D	E	F	G	H	JØ	NØ	M	R	K	T
	±0.2	±0.2	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	max	max	±0.2	±0.1
ZTACCMG ZTCCMG	3.8	7.5	16	7.5	1.75	4	4	2	1.6	1.6	3°	0.3	2.1	0.3
ZTACSMT/MX ZTCSMT/MX	5.0	4.4	12	6.5	1.75	4	4	2	1.6	1.6	3°	0.3	1.4	0.3
ZTACVMT/MX ZTTCVMT/MX	3.4	4.0	12	6.1	1.75	4	4	2	1.6	1.6	3°	0.3	1.3	0.3



**Maximum Reflow**



Please note that all parameters can not necessarily be specified in the same device

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