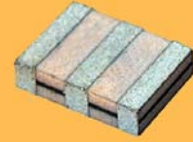


## ZTTCV SMD Resonators

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

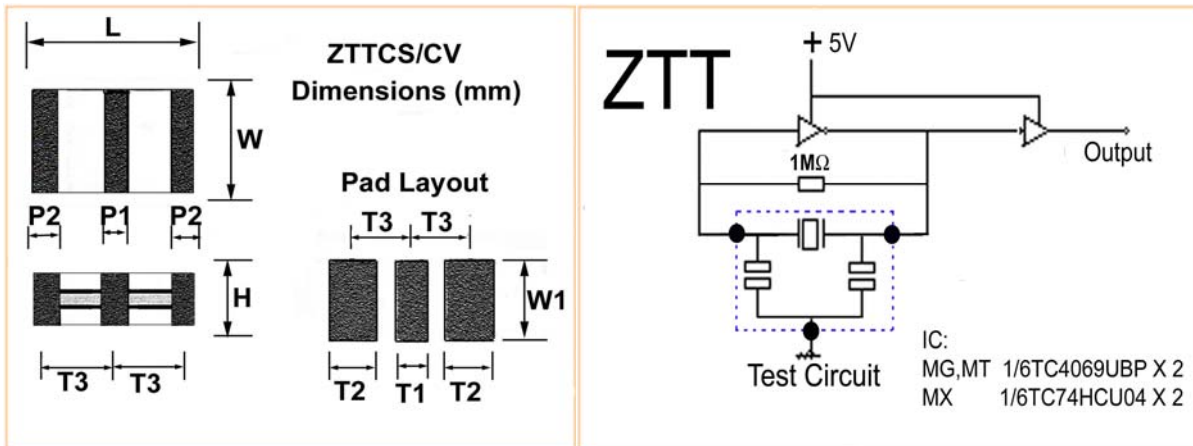


### Specification

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	8.00-13#	1/6TC4069UBPx2	± 0.5	±0.4%	± 0.3	22 internal
ZTTCV MX Mode Thickness expander 3rd O/T	16-50 50.01-60	74HCU04 x 2 Specification may vary from above please enquire	± 0.5	± 0.4%	± 0.3	22 Internal

Operable temperature range -25~+85°C

#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 can be 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: 8 C1r

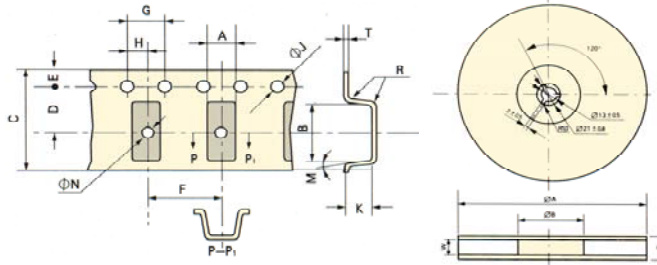
Date: 14/11/08

<http://www.actcrystals.com>

## ZTTCV SMD TAPE AND REEL / SOLDERING INFORMATION

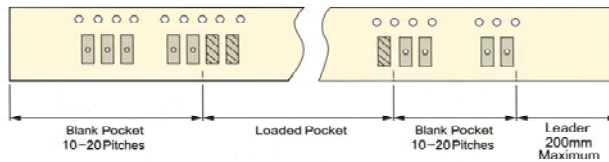
Tape and reel dimensions (mm)

	A	B	C	D	E	F	G	H	J Ø	N Ø	M	R	K	T
ACT ZTACC MG	±0.2	±0.2	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	max	max	±0.2	±0.2
ACT ZTCC MG	3.8	7.8	16.0	7.5	1.8	8.0	4.0	2.0	1.5	1.6	10°	0.3	2.1	0.3
ACT ZTACR MG														
ACT ZTTCR MG	2.2	4.7	12.0	5.5	1.8	4.0	4.0	2.0	1.6	1.6	3°	0.3	1.3	0.3
ACT ZTA CS MT/MX														
ACT ZTT CS MT/MX	5.0	4.4	12.0	5.5	1.8	8.0	4.0	2.0	1.5	1.6	10°	0.3	1.8	0.3
ACT ZTACV MT/MX														
ACT ZTTCV MT/MX	3.4	4.0	12.0	5.5	1.8	8.0	4.0	2.0	1.5	1.6	10°	0.3	1.3	0.3
ACT ZTACW MX														
ACT ZTTCW MX	2.2	2.8	8.0	3.5	1.8	4.0	4.0	2.0	1.6	1.1	3°	0.3	1.3	0.2

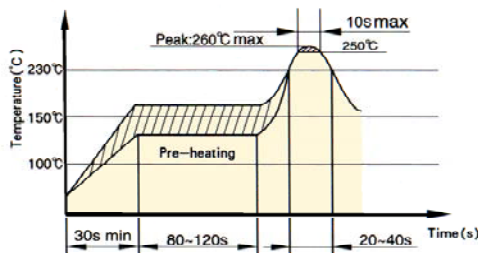
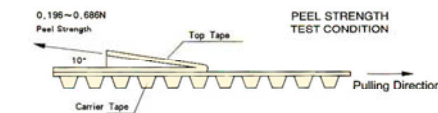


ØA	ØB	W	T	Pieces per reel	Carrier tape width
179 ±2	60 typ	8.4 min	14.0 max	3000 typ	8
179 ±2	60 typ	12.4 min	19.4 max	3000 typ	12
179 ±2	60 typ	12.4 min	19.4 max	1000 typ	12
179 ±2	60 typ	16.4 min	22.4 max	1000 typ	16
330 ±3	80 min	12.4 min	19.4 max	4000 typ	12
330 ±3	80 min	16.4 min	22.4 max	4000 typ	16

Leader tape



Tape peel strength



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  
<http://www.actcrystals.com>

Issue: 8 C1r  
 Date: 14/10/08