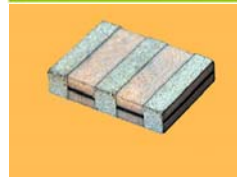




Tel : 0044 (0)118 979 1238  
 Fax : 0044 (0)118 979 1283  
 email : info@actcrystals.com

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



## ACT ZTTCS SMD Resonators

The ACT ZTTCS family comprises of a range of surface mount, ceramic resonators ("chip" type) in a three pad format, with a built in capacitors. This family offers a cost effective solution for applications requiring good stability over a wide temperature range, together with accuracy.

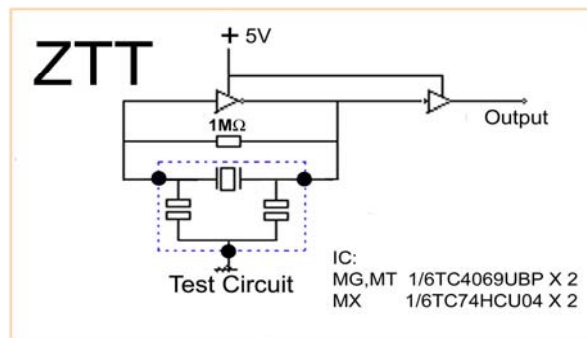
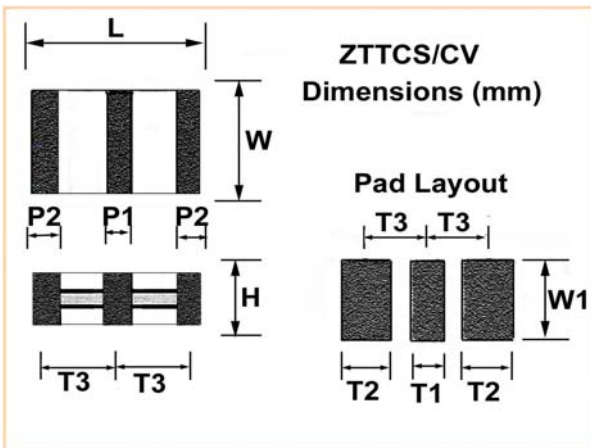
### Specification

Part Type/ Number	Frequency Range (MHz)	Test IC	Frequency Accuracy (%)	Stability over temp. range (-20 ~ +80°C)	Aging over Ten Year (%)	Capacitors (pF) (Ext. & Int.) C1 & C2
ZTTCS MT	6.00 ~ 13.00#	CD4069UBE x 2	± 0.5	± 0.3%	± 0.3	30 Internal Capacitor.
Mode Thickness Expander						
ZTTCS MX	13.01 ~ 20.00 13.01 ~ 20.00 20.01 ~ 50.00 50.01~60.00	74HCU04 x 2	± 0.5	± 0.3%	± 0.3	30 ) 22 ) Internal Capacitor. 5 )
Mode Thickness Expander 3rd O/T						

Specification may vary from above please enquire

Operable Temperature range -25~+85°C

# For frequencies between 5.0 and 8.0 it is recommended to use the ACT CV MG series as the characteristics are better.



	L	W	H	P1	P2	T1	T2	T3	W1
	±0.2	±0.2	±0.3	±0.4	±0.4	±0.2	±0.2	±0.2	±0.2
ZTTCS MT/MX	4.7	4.1	1.6	1.0	0.8	1.3	0.8	1.95	5.1

### 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

Issue :8 C1r

For quotations or further information please contact us at:

Date : 14/11/08

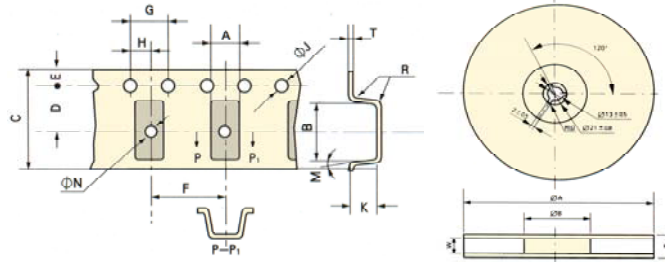
3 The Business Centre, Molly Millars Lane, Wokingham, Berkshire, RG41 2EY, UK

<http://www.actcrystals.com>

SM ZTTCS TAPE AND REEL / SOLDERING INFORMATION

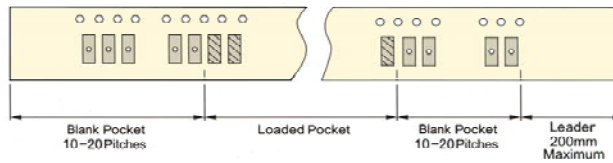
Tape and reel dimensions (mm)

	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 ZTTCC 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

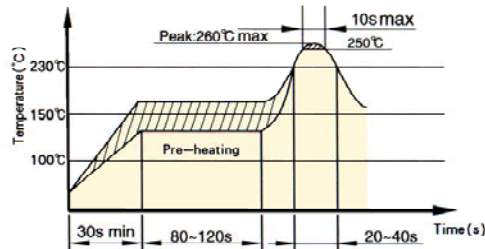
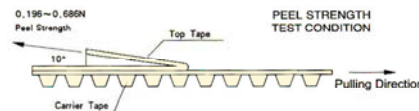


ØA	ØB	W	T	Pieces per reel	Carrier tape width
179 ±2	60 typ	8.4 min	14.0 max	3000 typ	8
179 ±2	60 typ	12.4 min	19.4 max	3000 typ	12
179 ±2	60 typ	12.4 min	19.4 max	1000 typ	12
179 ±2	60 typ	16.4 min	22.4 max	1000 typ	16
330±3	80 min	12.4 min	19.4 max	4000 typ	12
330±3	80 min	16.4 min	22.4 max	4000 typ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

Leader tape



Tape peel strength



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

ISO9001:2000 Registered

Issue : 8 C1r

For quotations or further information please contact us at:

Date : 14/11/08

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

<http://www.actcrystals.com>