

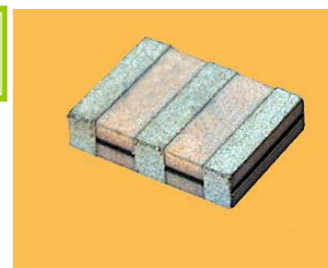
ACT Series: ZTTCS

Surface Mount Ceramic Resonator (Three pad, With built in Capacitor)

Features

- Three pad surface mount Ceramic resonator
- With built in capacitors
- Small size and wide temperature range available.
- Excellent temperature range
- Resonator vibrating mode: MT = Thickness expander mode
MX = Thickness expander mode (3rd Overtone)

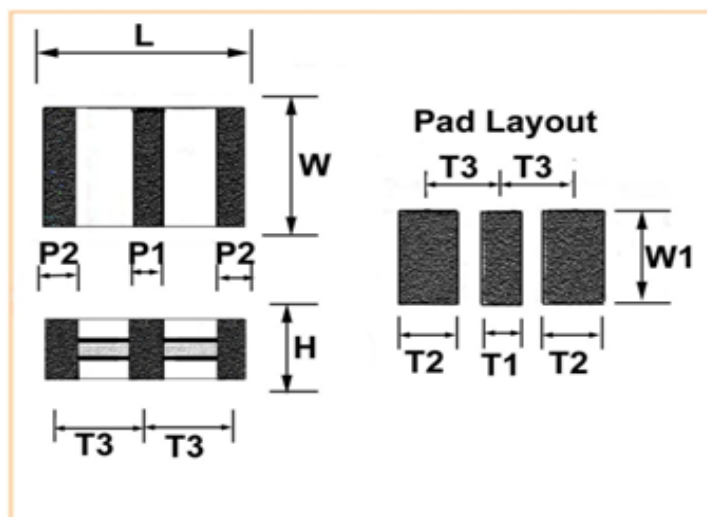
Compatible with Eu Directive
2002/95/EC - RoHS
Contains Pb in ceramic parts
exempted from article 4(1)
of the directive



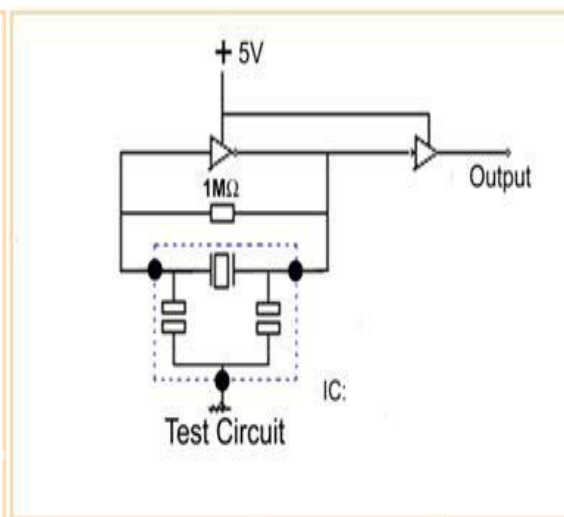
Specification

Type	Frequency Range (MHz)	Frequency Tolerance (25°C) (%)	Stability over Temp. Range (-25 ~ +85°C) (%)	Operating Temperature (°C)	Aging over 10 Years (%)	Notes
ZTTCS_MT	6.0 ~ 13.0	±0.5	±0.4	-25 ~ +85°C	±0.3	Fundamental mode
ZTTCS_MX	13.01 ~ 60.0	±0.5	±0.3	-25 ~ +85°C	±0.3	3rd Overtone mode

Dimensions



Test Circuit



Dimension Table (Unit: mm)										Test Circuit Parameters:	
Part Type	L	W	H	P1	P2	T1	T2	T3	W1	IC (MT) 1/6TC4069UBP x 2	
	±0.2	±0.2	±0.3	±0.4	±0.4	±0.2	±0.2	±0.2	±0.2	IC (MX) 1/6TC74HCU04 x 2	
ZTTCS_MT	4.7	4.1	1.6	1.0	0.8	1.3	0.8	1.95	5.1	C1=C2(MT): 22pF	
ZTTCS_MX										C1=C2(MX): 22pF (13.01~16.0MHz)	
										C1=C2(MX): 10pF (16.01~25.99MHz)	
										C1=C2(MX): 5pF (26.0~60.0MHz)	
										VDD = +5V	

Important note when using Ceramic resonators with microcontrollers

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 microcontrollers. 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 microcontrollers 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.

ACT Series: ZTTCS

Surface Mount Ceramic Resonator (Three pad, With built in Capacitor)

COMMODITY CODE
854160 00 00

PART NUMBERING & COMMODITY CODE

Standard (Popular) Specifications Highlighted in Yellow - Others available please check Note.3

ZTTCS	8.00	M	N	F	L	PF
ZTTCS_MT	Frequency	MHz	Freq.Tol. 0.5%	Stability:±0.3%,-25~+85°C	Loose	RoHS v
①	②	③	④	⑤	⑥	⑦

①	ACT Series	Code
	ZTTCS_MT	ZTTCS
	ZTTCS_MX	

② Frequency
Use full frequency including decimal point.

③	Unit	Code
	MHz	M

④	Freq. Tolerance	Code
	2kHz	R
	1kHz	P
	0.70%	T
	0.50%	N
	0.40%	S
	0.30%	O
	0.25%	Q
	Note 3	

⑤	Stability	Code
	±0.5%, -20~+85°C	A
	±0.4%, -20~+85°C	B
	±0.3%, -20~+85°C	C
	±0.2%, -20~+85°C	D
	±0.1%, -20~+85°C	E
	±0.2%, -25~+85°C	H
	±0.3%, -25~+85°C	F
	±0.4%, -25~+85°C	M
	±0.3%, -40~+70°C	G
	±0.5%, -40~+85°C	I
	±0.4%, -40~+85°C	J
	±0.3%, -40~+85°C	K
	±0.25%, -40~+85°C	L
	±0.5%, -40~+105°C	P
	±0.4%, -40~+105°C	Q
	±0.3%, -40~+105°C	R
	±0.2%, -40~+105°C	S
	±0.5%, -40~+125°C	V
	±0.4%, -40~+125°C	W
	±0.3%, -40~+125°C	X
	±0.2%, -40~+125°C	Y
	Note 3	

⑥	Tape & Reel	Code
	4000	F
	3000	D
	1000	C
	Loose	L

⑦	RoHS	Code
	Approved v	PF

Example Full Part Number
For 6.00MHz Order ZTTCS6.00MNFL-PF

Notes:

- 1) Tighter Stabilities, tolerances, Output Loads and Operating Temperature Ranges may be available. As each of these specification parameters may 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 assistance.
- 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. (MOQ DEPENDENT) Such devices would normally be allocated a custom specification

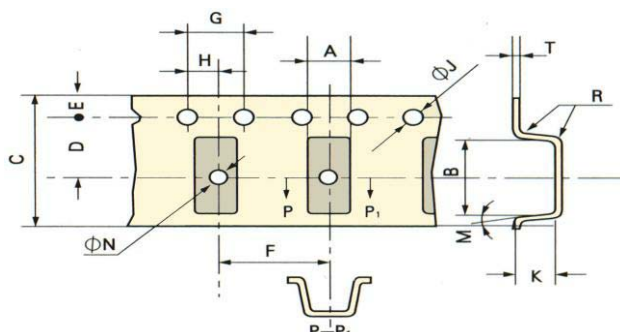
(An 'ACT ZTTCS_MT' type device may have part number such as ZTTCS6.00-C1501-PF).

- 3) Enquire if a stability and / or tolerance other than the standard(s) highlighted in yellow is required.

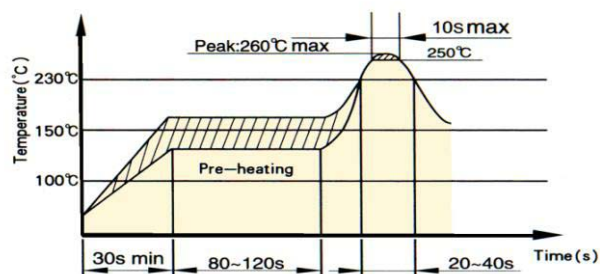
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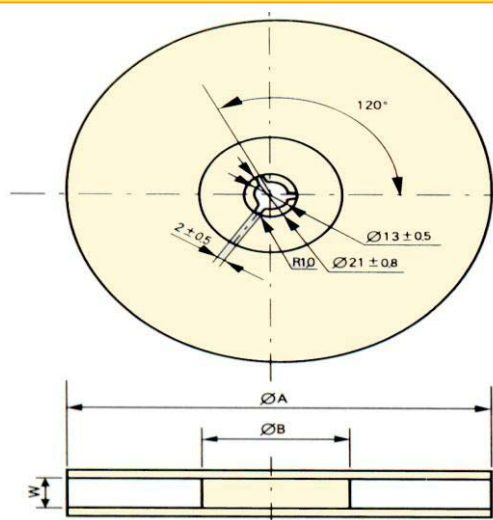
Tape and Reel Dimensions, Soldering Information:



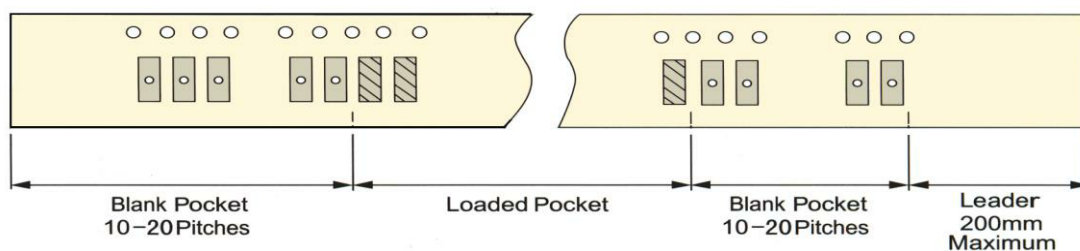
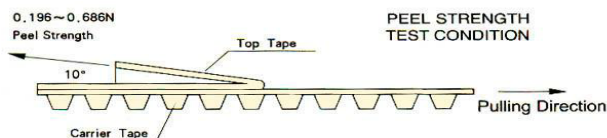
REFLOW PROFILE



TAPE DIMENSIONS (mm)	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	
ACT ZTACC MG	3.8	7.8	16	7.5	1.8	8	4	2	1.5	1.6	10°	0.3	2.1	0.3
ACT ZTTCC MG	3.8	7.8	16	7.5	1.8	8	4	2	1.5	1.6	10°	0.3	2.1	0.3
ACT ZTACR MG	2.2	4.7	12	5.5	1.8	4	4	2	1.6	1.6	3°	0.3	1.3	0.3
ACT ZTTCR MG	2.2	4.7	12	5.5	1.8	4	4	2	1.6	1.6	3°	0.3	1.3	0.3
ACT ZTACS MT/MX	5	4.4	12	5.5	1.8	8	4	2	1.5	1.6	10°	0.3	1.8	0.3
ACT ZTTCS MT/MX	5	4.4	12	5.5	1.8	8	4	2	1.5	1.6	10°	0.3	1.8	0.3
ACT ZTACV MT/MX	3.4	4	12	5.5	1.8	8	4	2	1.5	1.6	10°	0.3	1.3	0.3
ACT ZTTCV MT/MX	3.4	4	12	5.5	1.8	8	4	2	1.5	1.6	10°	0.3	1.3	0.3
ACT ZTACW MX	2.2	2.8	8	3.5	1.8	4	4	2	1.6	1.1	3°	0.3	1.3	0.2
ACT ZTTCW MX	2.2	2.8	8	3.5	1.8	4	4	2	1.6	1.1	3°	0.3	1.3	0.2
ACT ZTTCE MG	TBA	TBA	8	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA
ACT ZTTCC MG	TBA	TBA	16	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA
ACT ZTTCU MG	TBA	TBA	8	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	TBA



C (TAPE WIDTH)	ØA	Pcs / Reel	ØB	W	T
8	179	3K	60	8.4	14
12	179	3K / 1K	60	12.4	19.4
12	330	4K	80	12.4	19.4
16	179	1K/3K	60	16.4	22.4
16	330	3K/4K	80	16.4	22.4



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