

The ECS-CTP Series SMD ceramic resonator includes built in capacitors for reduced component count. The SMD Ceramic resonator is a low cost frequency control solution when absolute frequency accuracy is not important.

[Request a Sample](#)

## ECS-CTP SMD RESONATOR



- 6.0 x 3.0 mm package
- Industry Standard footprint
- Extended Temp. Range
- Built-in Caps

## DIMENSIONS (mm)

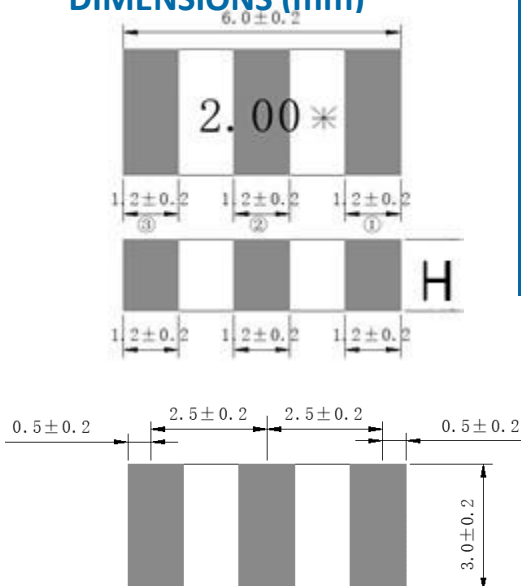


Figure 1) Top, Side, and Bottom views

## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS	ECS-CTP			UNITS
		MIN	TYP	MAX	
Frequency		1.84		20.00	MHz
Frequency Tolerance	@ +25°C			± 0.5	%
Frequency Stability Over -40 ~ +85°C	1.84 ~ 8.00 MHz			± 0.3	%
	8.01 ~ 12.00 MHz			± 0.2	%
	12.1 ~ 20.00 MHz			± 0.3	%
Equivalent Series Resistance (ESR)	1.84 ~ 2.99 MHz			100	Ω
	3.0 ~ 3.49 MHz			50	Ω
	3.5 ~ 12.00 MHz			30	Ω
	12.1 ~ 20.0 MHz			60	Ω
Withstanding Voltage	DC, 5 s Max.			100	V
Voltage Rating	DC Voltage			6	V
	AC Voltage			15	Vp-p
Insulation Resistance	10V, 1 Min.	500			MΩ
Operating Temperature	Topr	-40		+85	°C
Storage Temperature	Tstg	-55		+85	°C
Aging (First Year)	@ +25°C ±3°C			±0.1	%
Aging (10 Year)	@ +25°C ±3°C			±0.3	%

Height  
 1.8 ± 0.2 (1.84~3.5 MHz)  
 1.5 ± 0.2 (3.51 ~ 12 MHz)  
 1.6 ± 0.2 (12.1 ~ 20 MHz)

### PAD CONNECTIONS

1	In/Out
2	Gnd
3	Out/In

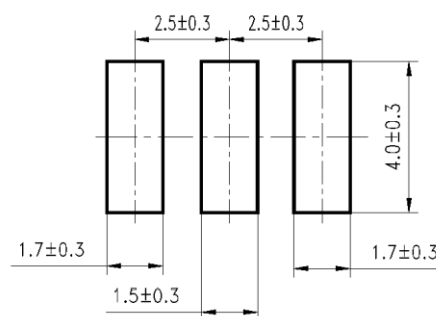


Figure 2) Suggested Land Pattern

## PART NUMBERING GUIDE: Example ECS-CTP-8.00-30-TR

ECS -CTP	FREQUENCY	Built In CAPACITANCE	PACKAGING
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8.00 = 8.000 MHz  
 \*See Developed Frequencies Pg. 2

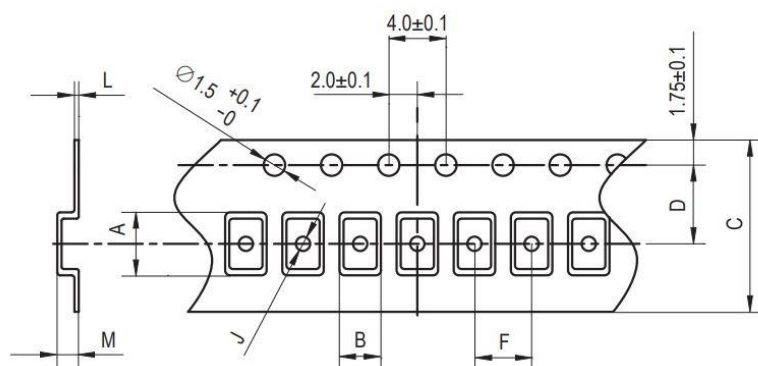
Standard  
 30 = 30 pF  
 10 = 10 pF  
 15 = 15 pF  
 22 = 22 pF  
 33 = 33 pF  
 39 = 39 pF

TR =  
 Tape  
 & Reel  
 4K/Reel

\*Contact ECS for availability of non-developed frequencies/non standard cap values.

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**POCKET TAPE DIMENSIONS (mm)**



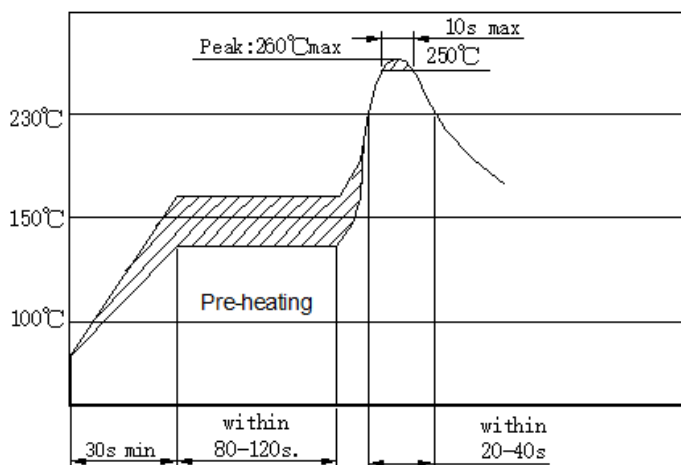
A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
6.4	3.4	16.0	7.5	8.0	1.6	0.3	2.1	330 mm	4000

**SOLDER PROFILE**

Peak solder Temp +260°C Max 10 sec Max.
2 Cycles Max.
MSL 1, Lead Finish Sn/Ag

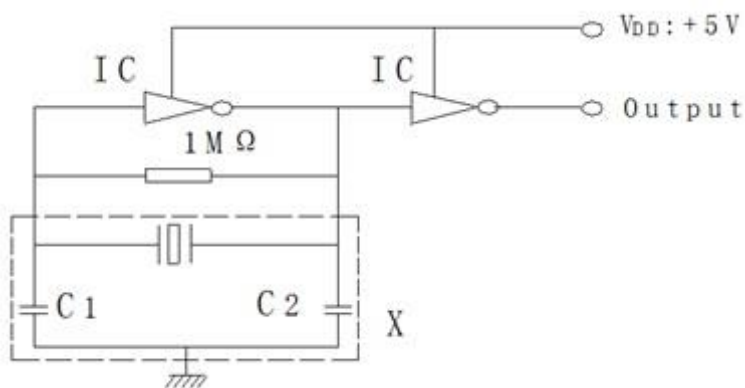
**DEVELOPED FREQUENCIES**

2.00 MHz
3.58 MHz
3.68 MHz
4.00 MHz
4.19 MHz
6.00 MHz
8.00 MHz
10.00 MHz
12.00 MHz
16.00 MHz
20.00 MHz



**Figure3) Suggested Reflow Profile**

## ECS-CTP SMD Ceramic Resonator



**Figure4)** Test Circuit

IC: 1/6TC4069UBP x 2

C1,C2: 30 (1±20%) pF (1.84 ~ 8.00 MHz)

other (10/15/22/33/39/47 pF)

15(1±20%) pF (8.01~12 MHz)

Other (10/22/30/33/39/47 pF)

10 (1±20%) pF (12.01 ~ 20 MHz)

*Note: ECS does not approve the use of it's products in Automotive, Military, Avionics, Life Sustaining or Life Support systems or any other related medical applications without written approval from ECS Inc.*