Miniature AT Strip Crystal Units — T Series

Cylindrical Type (3 x 8) (3 x 9) (3 x 10) *(AT Strip)*

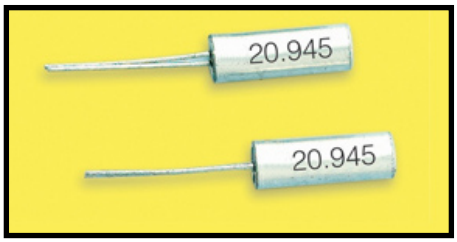
MEC Crystals

Features:

- Wide frequency range
- High stability assured through vacuum sealing
- Extended temperature range
- High shock tolerance
- Small size
- Reliable frequency stability
- **RoHs Compliant (Pb Free)**

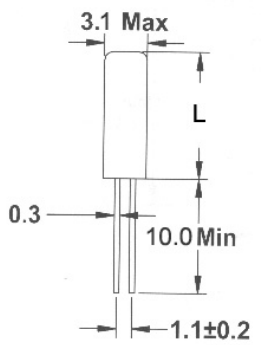
Applications:

- Microprocessor systems
- Consumer electronics
- Instrument
- Automotive electronics



Electrical Specifications:

Frequency Range		**3.5795MHz ~ 50.0000MHz**	
Frequency Tolerance		±10ppm, ±20ppm, ±30ppm, ±50ppm or specify	
Mode of Vibration	AT Fund	3.579545MHz ~ 4.000MHz	3 x 10mm
		4.000MHz ~ 29.999MHz	3 x 8mm / 3 x 9mm
	AT 3rd Overtone	30.000MHz ~ 50.000MHz	
Frequency Stability		see chart	
ESR		see chart	
Load Capacitance		12pF / 16pF / 18pF / 20pF / 32pF or specify	
Drive Level		10μW ~ 100μW max	
Shunt Capacitance		5pF Typ.	
Aging at 25°C 1st year (max)		±3ppm / year max	
Insulation Resistance		500 MΩ at (DC 100V) min	
Operating Temperature		-10°C ~ +60°C / -20°C ~ +70°C / -40°C ~ +85°C	
Storage Temperature		-40°C ~ +85°C	



L (max)	Frequency Range
8.3 - 9.3	> 4MHz
10.1	≤ 4MHz

All dimensions are in mm.

Part Numbering System:

Example:
Frequency = 4.5000MHz, Holder = AT Strip,
CL = 18pF, Mode = Fundamental,
Oper. Temp. = -20°C to +70°C

4T5000 — **18** **F** **X** **30** **50** __
① ② ③ ④ ⑤ ⑥ ⑦

①
- First five digits of the frequency or all significant digit if frequency contains more than 5 digits.
- Holder code represented by letter "T" for holder type & indicating decimal point.

② Load Capacitance CL

Code	Load Capacitance
S	Series
12	12pF
16	16pF
20	20pF
32	32pF
Specify	

③ Mode of Vibration

Code	Cut-Mode
F	AT Fund
3	AT 3rd OT

④ Operating Temperature

Code	Ranges
A	-10°C ~ +60°C
B	-20°C ~ +70°C
X	-40°C ~ +85°C

⑤ Frequency Tolerance

Code	Tolerance
10	± 10 ppm
15	± 15 ppm
20	± 20 ppm
25	± 25 ppm
30	± 30 ppm
50	± 50 ppm
or specify	

⑥ Frequency Stability

Code	Stability
10	± 10 ppm
15	± 15 ppm
20	± 20 ppm
25	± 25 ppm
30	± 30 ppm
50	± 50 ppm
or specify	

⑦ Package

Code	Description
Nil	Bulk
T	Tape & reel

** If any option is not applicable (ex. Code=Nil) simply continue building the part number omitting spaces.*

Remark: Specifications are subject to change without prior notice. Please confirm with our sales engineer.

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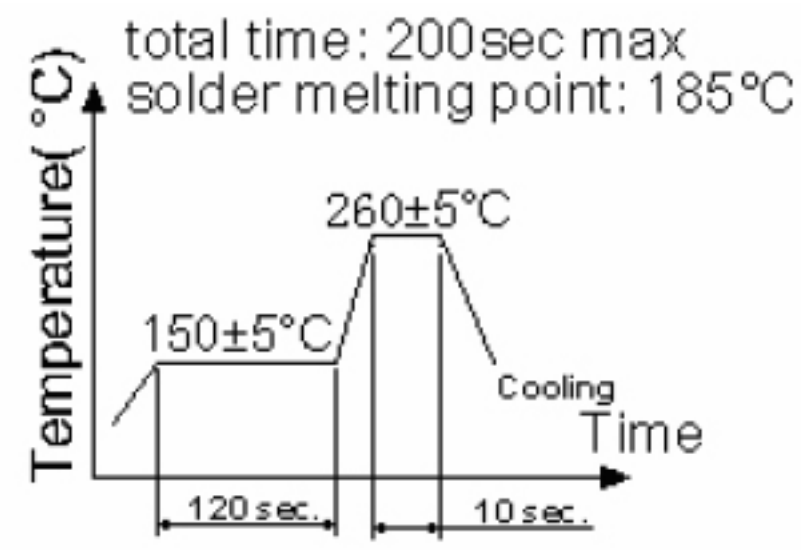
Equivalent Series Resistance (ESR) and Oscillation Mode:

Frequency	E.S.R. (ohm)	Mode
3.579MHz ~ 3.999MHz	180 max	Fundamental / AT
4.000MHz ~ 4.499MHz	150 max	Fundamental / AT
4.500MHz ~ 4.999MHz	120 max	Fundamental / AT
5.000MHz ~ 6.999MHz	100 max	Fundamental / AT
7.000MHz ~ 9.999MHz	80 max	Fundamental / AT
10.000MHz ~ 11.999MHz	60 max	Fundamental / AT
12.000MHz ~ 29.999MHz	40 max	Fundamental / AT
30.000MHz ~ 50.000MHz	80 max	3rd Overtone / AT

Frequency Stability vs. Operating Temperature Range:

Temperature Range	Frequency Stability					
	± 10ppm	± 15ppm	± 20ppm	± 25ppm	± 30ppm	± 50ppm
-10°C ~ +60°C	•	•	•	•	•	•
-20°C ~ +70°C			•	•	•	•
-40°C ~ +85°C						•

Recommended Soldering Condition:



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