

SMD Quartz Crystal Unit

4D Series

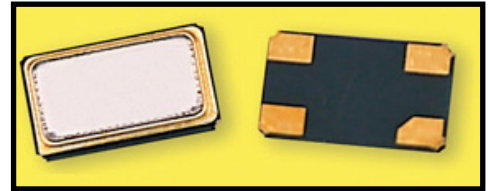
MEC Crystals

Seam Sealed Ceramic SMD Package (2.0 x 1.6mm)

(4 Pads)

Features:

- Ultra thin, thickness 0.50mm
- High precision and high frequency stability
- Applications in PAD, DSC, DVC, and PC
- **RoHs Compliant (Pb Free)**



Electrical Specifications:

Frequency Range	20.000MHz ~ 54.000MHz
Frequency Tolerance at 25°C	±10ppm, ±30ppm or specify
Frequency Stability over Operating Temperature Characteristic	±10ppm, ±30ppm or specify
Operating Temperature Range	-10°C ~ +60°C -20°C ~ +70°C -40°C ~ +85°C
Storage Temperature Range	-40°C ~ +85°C
Shunt Capacitance (C ₀)	3.0 pF max
Drive Level	10µW ~ 100µW
Load Capacitance (C _L)	Series, 12pF, 16pF, 20pF, 30pF, 32pF or specify
Aging at 25°C 1st year (max)	±3ppm / year
Shock Resistance	Drop test of 3 times on 2mm stainless plate from 75cm height

Typical Frequencies, ESR & Operating Modes:

Frequency	E.S.R. (ohm)	Mode
20.000MHz ~ 29.999MHz	100 Max.	Fundamental / AT
30.000MHz ~ 54.000MHz	80 Max.	Fundamental / AT

Part Numbering System:

4D 24.000 F 16 X 1 3
① ② ③ ④ ⑤ ⑥ ⑦

① Series

4D

② Frequency

Frequency
ex. 24.000

③ Mode of Vibration

Code	Cut-Mode
F	AT Fund

④ Load Capacitance CL

Code	Load Capacitance
S	Series
12	12pF
16	16pF
20	20pF
30	30pF
32	32pF

⑤ Operating Temperature

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

⑥ Frequency Tolerance

Code	Tolerance
1	± 10 ppm
1A	± 15 ppm
2	± 20 ppm
2A	± 25 ppm
3	± 30 ppm
4	± 40 ppm
5	± 50 ppm

⑦ Frequency Stability

Code	Stability
1	± 10 ppm
1A	± 15 ppm
2	± 20 ppm
2A	± 25 ppm
3	± 30 ppm
4	± 40 ppm
5	± 50 ppm

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

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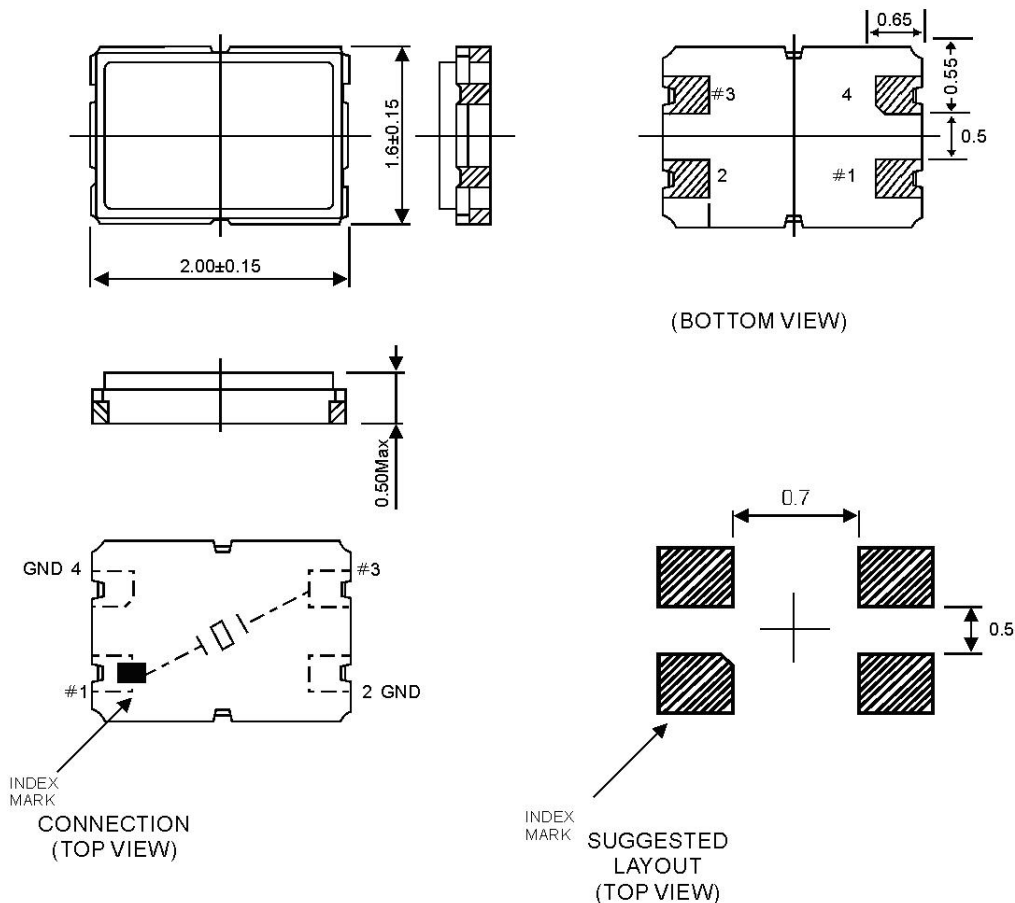
4D Series



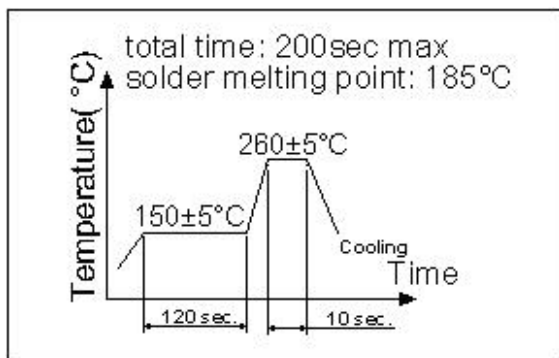
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(4 Pads)

Dimensions:



Reflow Condition:



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