Crystal Units

NDK Crystal Bridge to the Future

AT-41 / AT-41CD2

For OA / AV

■ Features

A highly stable and reliable low-height crystal unit with a metallic package, also suitable for surface mounting.

- Compatible with surface mounting.
- Airtight metal package ensures high-reliability.
- Taping package is for customer automatic loading operation.
- AT-41CD2 meets the requirements for re-flow profiling using lead-free solder.

Pb Free

RoHS Compliant
Directive 2011/65/EU
Directive (EU) 2015/863

AT-41

AT-41CD2

■ Specifications

Item \ Model	AT-41			AT-41CD2			AT-41 ／ AT-41CD2	
Standard	Standard			Standard			Optional	
Nominal Frequency (MHz)	3 ≤ F ≤ 37	26 ≤ F < 60	60 ≤ F ≤ 75	3 ≤ F ≤ 37	26 ≤ F < 60	60 ≤ F ≤ 75	4 ≤ F ≤ 37	26 ≤ F ≤ 40
Overtone Order	Fundamental	3rd overtone		Fundamental	3rd overtone		Fundamental	3rd overtone
Frequency Tolerance (25 ±3 °C)	±20 × 10^{-6}			±20 × 10^{-6}			±20 × 10^{-6}	
Frequency versus Temperature Characteristics (with reference to +25 °C)	±30 × 10^{-6}			±30 × 10^{-6}			±30 × 10^{-6}	
Operating Temperature Range (°C)	−10 to +70			−10 to +70			−40 to +85	
Storage Temperature Range (°C)	−40 to +85			−40 to +85			−40 to +85	
Equivalent Series Resistance	Refer to *1			Refer to *1			Refer to *1	
Level of Drive (μW)	Refer to *2 (Max. 1000)			Refer to *2 (Max. 1000)			Refer to *2	
Load Capacitance (pF)	16	Series resonance		16	Series resonance		6 to 32	
Frequency Aging (+25 °C)	---			---			Max. ±5 × 10^{-6} / year *3	
Specifications Number	STD-LPH-9	STD-LPH-10	STD-LPH-11	LN-L-0002	STD-LPH-3	STD-LPH-5	Refer to *4	

*1 Equivalent Series Resistance

Overtone Order	Nominal Frequency (MHz)	ESR Max. (Ω)
Fundamental	3 ≤ F < 3.2	400
	3.2 ≤ F < 3.5	200
	3.5 ≤ F < 4	150
	4 ≤ F < 4.5	120
	4.5 ≤ F < 5	100
	5 ≤ F < 6	80
	6 ≤ F < 8	70
	8 ≤ F < 10	60
	10 ≤ F < 12	50
	12 ≤ F ≤ 37	40
3rd overtone	26 ≤ F < 35	140
	35 ≤ F < 48	100
	48 ≤ F ≤ 75	80

*2 Level of Drive

Overtone Order	Nominal Frequency (MHz)	Level of Drive (μW)
Fundamental	3 ≤ F < 5	500
	5 ≤ F ≤ 37	50

Overtone Order	Nominal Frequency (MHz)	Level of Drive (μW)
3rd overtone	26 ≤ F < 60	500
	60 ≤ F ≤ 75	10

Please specify the model name, frequency, and specification number when you order products.
For further questions regarding specifications, please feel free to contact us.
*3 If you have any other requests, NDK will study it.
*4 Ordering information: Overtone Order Fundamental / 3rd Overtone, the Operating Temperature Range, Frequency versus Temperature Characteristics, Frequency Tolerance, and Load Capacitance.

Ex. Model, Frequency (24.000000MHz 6digits), S1: Fundamental or S3 : 3rd overtone
– Operating Temperature Range (−40 to +85°C) − Frequency versus Temperature Characteristics (±30 × 10^{-6})− Frequency Tolerance (±20 × 10^{-6}) − Load Capacitance (10pF)
AT-41
24.000000MHz
S1-4085-30-20-10

■ Dimensions