

STMicroelectronics Community > Product forums > ST25 NFC/RFID tags and readers
> Re: ST25R3916-DISCO unknown crystal oscillator par...



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2020-10-21 06:37 AM

Hello Gaston,

Lets maybe focus on a actual example:

Looking at the NDK hompage i have identified a suiteable crystal: NX2016-STD-CZS-6. It has the following specification:

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Specifications		
Standard	Standard	
Nominal Frequency (MHz)	$16 \leq F \leq 80$	
Package Size (L×W×H : mm)	2.0×1.6×0.45	
Overtone Order	Fundamental	
Frequency Tolerance (+25±3°C)	$\pm 10 \times 10^{-6}$	
Frequency versus Temperature Characteristics (with reference to 25°C)	$\pm 25 \times 10^{-6}$	$\pm 15 \times 10^{-6}$
Operating Temperature Range (°C)	-40 to +85	-10 to +75
Storage Temperature Range (°C)	-40 to +85	
Equivalent Series Resistance (Ω)	Max. 200 (16 ≤ F < 18MHz) Max. 150 (18 ≤ F < 20MHz) Max. 100 (20 ≤ F < 24MHz) Max. 80 (24 ≤ F < 26MHz) Max. 60 (26 ≤ F < 40MHz) Max. 50 (40 ≤ F ≤ 80MHz)	
Level of Drive (μW)	10 (Max. 100)	
Load Capacitance (pF)	8	
Frequency Aging (+25°C)	---	
Specification Number	STD-CZS-7	STD-CZS-6

For calculating the load cap it would mean:

$$CL = [(C1 \cdot C2) / (C1 + C2)] + CS + CIC \Rightarrow C_{1,2} = 2 \cdot (CL - CS - CIC)$$

Where CL = 8pF, CS = 1pF, CIC = 2pF

$$C_{1,2} = 2 \cdot (8 - 1 - 2) = 10pF$$

The crystal we used has the same load capacitance specifications.

BR Travis

[View solution in original post](#)

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0 Kudos

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