Specification of Temperature Compensated Crystal Oscillators

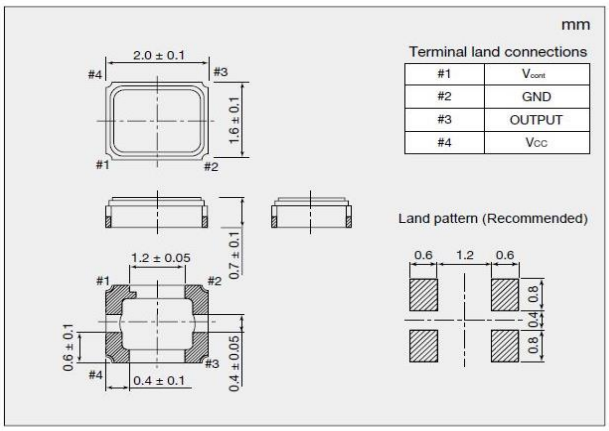
1. NDK Part Number NT2016SA-40M-ENA4203A
2. NDK Specification Number ENA4203A
3. Type NT2016SA
4. Absolute Maximum ratings

	Item	Ratings			Notes
		Min.	Max.	Units	
1	Supply Voltage	-0.6	+4.6	V	-
2	Control voltage (Vcont)	-0.6 to Vcc +0.6,	+4.6 max.	V	-
3	Storage temp. range	-40	+125	℃	-

5. Electrical Specification

	Parameters	SYM.	Electrical Spec.				Notes
			Min.	Typ.	Max.	Units	
1	Nominal frequency	fnom		40		MHz	-
2	Supply voltage	Vcc	+3.13	+3.3	+3.47	V	(-Earth)
3	Current consumption	-	-	-	1.7	mA	-
4	Output voltage	-	0.8	-	-	Vp-p	Clipped sine wave (DC-Coupling)
5	Operating temp. rage	-	-40	-	+85	℃	-
6	Load impedance (resistance part)	-	9	10	11	kΩ	-
7	Load impedance (parallel capacitance)	-	9	10	11	pF	-
8	DC-cut capacitor	-	-	-	-	-	DC-cut capacitor of output is not put in TCXO.Please add DC-cut capacitor(1,000pF)in output line.
9	1. Frequency/ temperature characteristics	-	-2.0	-	+2.0	ppm	-40 to +85℃(Based on frequency at +25+/-2℃) at control voltage (Vcont)=+1.65 V DC
	2. Frequency/Temperature slope	-	-0.3	-	+0.3	ppm	-30 to +85 °C
		-	-0.8	-	+0.8	ppm	-40 to -30 °C
		-					Minimum of one measurement every 2 °C
	3. Frequency/Voltage coefficient	-	-0.1	-	+0.1	ppm	+3.3V+/-5%
	4. Frequency/Load coefficient	-	-0.1	-	+0.1	ppm	(10kΩ//10pF)+/-10%
	5.Frequency tolerance	-	-2.0	-	+2.0	ppm	at +/-25℃+/-2℃, after 2times reflow soldering, based on nominal frequency at control voltage (Vcont)=+1.65 V DC
	6.Long-term frequency stabillity	-	-1.0	-	+1.0	ppm	year
		-	-5.0	-	+5.0	ppm	10 years
10	External adjustment						
	1.Control voltage (Vcont)	-	+0.15	+1.65	+3.15	ppm	
	2.Frequency control range	-	-13.0	-	-0.8	ppm	Vcont=+0.15 V based on frequency
		-					Vcont=+3.15 V at (Vcont) = +1.65 V DC
	3. Typical slope	-		7.0		ppm/V	
	4. Input impedance	-	500			kΩ	
	5.Frequency change polarity	-					Positive
11	Start-up time	-			5.0	ms	More than 90% of final output voltage
12	Harmonic distortion	-			-10	dBc	
13	Spurious oscillations	-			-70	dBc	
14	Short-term frequency stability	-			1.0	ppb/G	τ=1 s
15	G Sensitivity(at +25°C)	-		0.2	1.5	ppb/G	10 Hz to 1500 Hz random vibration in each of 3-axis
16	Phase noise (Non-Vibration)(at +25°C)	-	-	-86		dBc/Hz	@10 Hz offset
		-	-	-110		dBc/Hz	@100 Hz offset
		-	-	-133		dBc/Hz	@1 kHz offset
		-	-	-147		dBc/Hz	@10 kHz offset
		-	-	-150		dBc/Hz	@100 kHz offset
17	Phase noise (Vibration)(at +25°C) (10 Hz to 1500 Hz random vibration in each of 3-axis)	-	-	-82		dBc/Hz	@10 Hz offset
		-	-	-98		dBc/Hz	@100 Hz offset
		-	-	-119		dBc/Hz	@1 kHz offset
		-	-	-144		dBc/Hz	@10 kHz offset
		-	-	-147		dBc/Hz	@100 kHz offset

6. Dimension



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