

## Specification of Simple Packaged Crystal Oscillators

- 1. **NDK Part Number** NZ2520SHA-60M-END5301A
- 2. **NDK Specification Number** END5301A
- 3. **Type** NZ2520SHA
- 4. **Absolute Maximum ratings**

	Item	Ratings			Notes
		Min.	Max.	Units	
1	Supply voltage	-0.3	+4.0	V	-
2	Storage temp. rage	-55	+125	°C	-

### 4. Electrical Specification

	Parameters	SYM.	Electrical Spec.				Notes
			Min.	Typ.	Max.	Units	
1	Nominal frequency	f <sub>nom</sub>	-	60	-	MHz	-
2	Supply voltage	V <sub>CC</sub>	1.8	2.55	3.3	V	-
3	Current consumption (Operating)	I <sub>CC</sub>	-	-	7.5	mA	at 2.55V, 25°C
4	Current consumption (Stand-by)	I <sub>ST</sub>	-	-	20	µA	at 2.55V, 25°C
5	Output level	-	CMOS				-
6	Load capacitance	CL	-	-	15	pF	-
7	Operating temp. rage	T <sub>opr</sub>	-40	-	+125	°C	-
8	Overall frequency tolerance	Δf/f <sub>nom</sub>	-100	-	+100	ppm	*1
9	Output voltage	V <sub>OL</sub>	-	-	0.1 V <sub>CC</sub>	V	-
		V <sub>OH</sub>	0.9 V <sub>CC</sub>	-	-	V	-
10	Rise time (T <sub>r</sub> ), Fall time (T <sub>f</sub> )	T <sub>r</sub> /T <sub>f</sub>	-	-	6	ns	0.1V <sub>CC</sub> to 0.9V <sub>CC</sub>
11	Symmetry	SYM	45	-	55	%	at 1/2V <sub>CC</sub>
12	Start-up time	T <sub>su</sub>	-	-	4	ms	-
13	Phase Noise (at 2.55V, 25°C)	L(f)	-	-157	-	dBc/Hz	100 kHz offset frequency
			-	-160	-	dBc/Hz	1 MHz offset frequency
			-	-161	-	dBc/Hz	10 MHz offset frequency
14	Output wave form	-	Rectangular				-
15	Stand-by function						
	#1 PAD input			# 3 PAD output			
	H level (0.7 V <sub>CC</sub> to V <sub>CC</sub> ) or ppen			Operating			
	L level (0.3 V <sub>CC</sub> max.)			High impedance			

\*1 Inclusive of frequency. tolerance (at 25 °C), requency/temperature characteristics, frequency/voltage coefficient.

### 5. Dimension

