

## Specification of Simple Packaged Crystal Oscillators

- 1. NDK Part Number** NZ2520SB-133M-END4825A  
**2. NDK Specification Number** END4825A  
**3. Type** NZ2520SB  
**4. Absolute Maximum ratings**

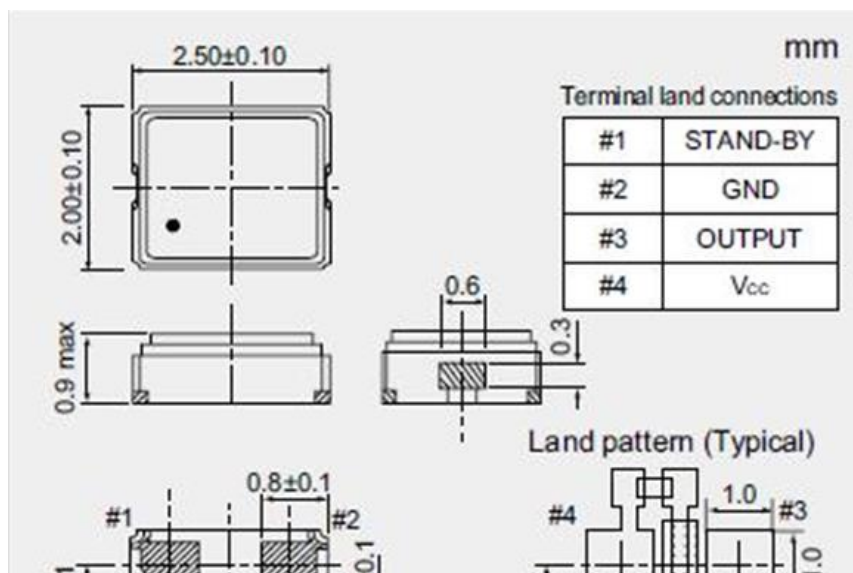
	Item	Ratings			Notes
		Min.	Max.	Units	
1	Supply voltage	-0.3	+4.0	V	-
2	Storage temp. rage	-55	+125	°C	-

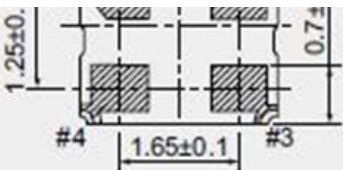
### 4. Electrical Specification

	Parameters	SYM.	Electrical Spec.				Notes
			Min.	Typ.	Max.	Units	
1	Nominal frequency	f <sub>nom</sub>		##		MHz	-
2	Supply voltage	V <sub>cc</sub>	3.0	3.3	3.6	V	-
3	Current consumption (Operating)	I <sub>CC</sub>	-	-	60	mA	at 3.3V, 25°C
4	Current consumption (Stand-by)	I <sub>ST</sub>	-	-	10	µA	at 3.3V, 25°C
5	Output level	-	CMOS				-
6	Load capacitance	CL			15	pF	-
7	Operating temp. rage	T <sub>opr</sub>	-40	-	+85	°C	-
8	Overall frequency tolerance	Δf/f <sub>nom</sub>	-100	-	+100	ppm	*1
9	Output voltage	V <sub>OL</sub>	-	-	0.2 V <sub>CC</sub>	V	-
		V <sub>OH</sub>	0.8 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>	-	-	3	ns	0.2V <sub>CC</sub> to 0.8V <sub>CC</sub>
11	Symmetry	SYM	45	-	55	%	at 0.5V <sub>CC</sub>
12	Start-up time	T <sub>su</sub>	-	-	10	ms	
13	Output wave form	-	Rectangular				-
14	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				

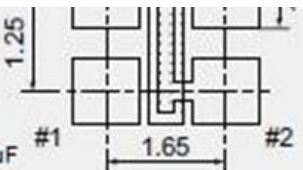
\*1 'Inclusive of frequency. tolerance (at 25 °C), requency/temperature characteristics, frequency/voltage coefficient.

### 5. Dimension





$C_{by}=0.01\mu F$



Mount an approx. 0.01  $\mu F$  bypass capacitor between Vcc and GND  
(close to the product)