

# Crystal Oscillator

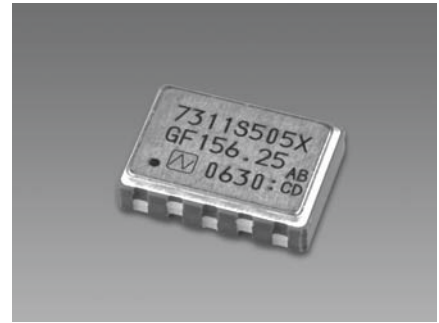
## Model Name 7311S-DF Simple Packaged Crystal Oscillator (SPXO) 7300 Series

### Main Application

For SONET-, SDH-, and GbEthernet-related equipment

### Features

- Power supply voltage is 2.5V, LV-PECL output level.
- Output frequency range are 62.5 to 313 MHz.
- Ultra-compact with dimensions of 7.0 x 5.0 x 1.7 mm.
- Surface-mount crystal oscillator.



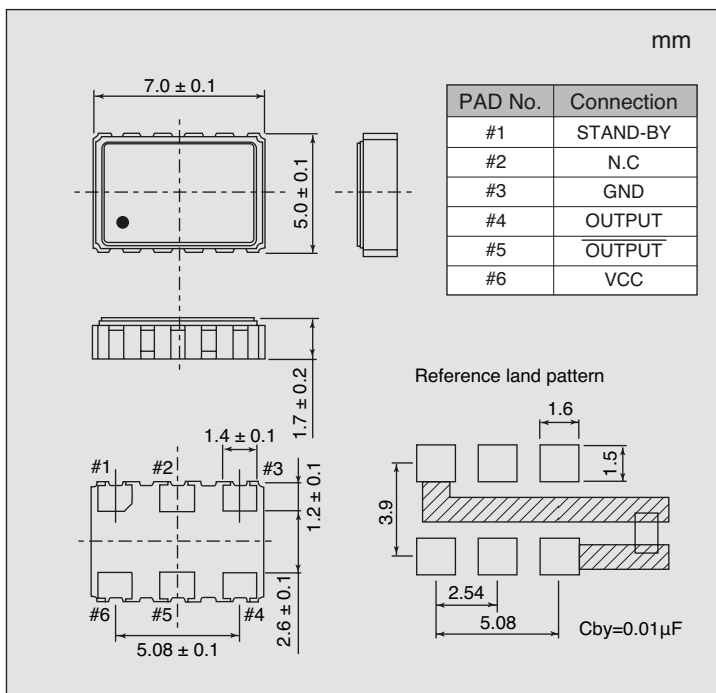
Pb Free

RoHS Compliant  
Directive 2002/95/EC

### Specifications

Item	Model Classification	7311S
		DF-XXXX (XXXX : 255R, 505X, 104X)
Nominal frequency range (MHz)		62.5 to 220      220 to 313
Power supply voltage [VCC] (V)		+3.3 ± 10 %
Load (Ω)		50 (to VCC-2.0 V)
Current consumption	During operation	Max. 90 mA (60 mA typ.)
	During standby	Max. 30 μA
Output level		PECL level (Complementary)
Operating temperature range (°C)		0 to +70, 0 to +85
		0 to +85
Frequency stability		Max. ±25×10 <sup>-6</sup> /0 to +70 °C (255R)
		Max. ±50×10 <sup>-6</sup> /0 to +85 °C (505X)
		Max. ±100×10 <sup>-6</sup> /0 to +85 °C (104X)
Duty cycle (%)		45 to 55 (at 50 % Waveform)
Phase jitter (RMS)		Max. 1 ps (12 kHz to 20 MHz)
Standby function (tristate)		Available

### Dimensions



### Standby Function Table (Tristate)

#1 Input	#4 and #5 output
Level H ( $V_{IH} \geq 0.7 V_{CC}$ ) or OPEN	Oscillation output ON
Level L ( $V_{IL} \leq 0.3 V_{CC}$ )	High impedance

### Number for specifying an order (+3.3V LV-PECL)

Comprehensive frequency stability	Nominal frequency range (MHz)	
	62.5 ≤ F < 220	220 ≤ F ≤ 313
Max. ±25×10 <sup>-6</sup> /0 to 70 °C	NSA3344A	–
Max. ±50×10 <sup>-6</sup> /0 to 85 °C	NSA3345A	NSA3345E
Max. ±100×10 <sup>-6</sup> /0 to 85 °C	NSA3346A	NSA3346E

### How to Specify an Order

Model name	–	Frequency (up to 8 digits)	M	–	Number for specifying an order
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When ordering +3.3 V, Max. ±100×10<sup>-6</sup>/0 to 85°C, 156.25 MHz  
7311S-DF-104X-156.25M-NSA3346A

If you have any queries concerning our standard frequencies and numbers for specifying orders, please contact our sales representatives or visit our homepage (<http://www.ndk.com/>).