



CRYSTAL OSCILLATOR SPXO

TCO - 708x series

- Frequency range : 1.5 MHz to 160 MHz
- Supply voltage : 3.3 V / 5.0 V
- External dimensions: 7.0 × 5.0 × 1.6 mm
- Function : Standby (ST)



Product Number (please contact us)
X1G0002x1xxxx00



Actual size



Specifications (characteristics)

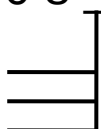
Item	Symbol	TCO-708*X1A*	TCO-708*D1A*	Conditions / Remarks
Output frequency range	f _o	1.500 MHz to 160.000 MHz	1.500 MHz to 75.000 MHz	Please contact us for inquiries regarding the available frequencies.
Supply voltage	V _{cc}	3.3 V	5.0 V	As per below description
Storage temperature range	T _{stg}	-55 °C to +125 °C		Store as bare product.
Operating temperature range	T _{use}	As per below description		
Frequency tolerance	f _{tol}	As per below description		
Current consumption	I _{cc}	20 mA Max.	20 mA Max.	f _o < 30 MHz, No load condition.
		50 mA Max.	40 mA Max.	30 MHz ≤ f _o ≤ 75 MHz, No load condition.
			—	75 MHz < f _o ≤ 160 MHz, No load condition.
Symmetry	SYM	40 % to 60 %		50 % V _{cc} level
Output voltage	V _{OH}	90 % V _{cc} Min.		I _{OH} = -5mA(X1A) / -8mA(D1A)
	V _{OL}	10 % V _{cc} Max.		I _{OL} = +5mA(X1A) / +8mA(D1A)
Output load condition (CMOS)	L _{CMOS}	15 pF Max.		
Input voltage	V _{IH}	70 % V _{cc} Min.		V _{IH} or OPEN : Enable
	V _{IL}	30 % V _{cc} Max.		V _{IL} or GND : Disable
Rise time / Fall time	t _r / t _f	6 ns Max.	10 ns Max.	f _o ≤ 75 MHz, 10 % V _{cc} to 90 % V _{cc} level
		3 ns Max.	—	75 MHz < f _o ≤ 160 MHz, 10 % V _{cc} to 90 % V _{cc} level
Start-up time	t _{str}	10 ms Max.		Time at minimum supply voltage to be 0 s
Frequency aging	f _{aging}	±5 × 10 ⁻⁶ / year Max.		+25 °C, First year

* Part Number

TCO - 708 1A

<Frequency tolerance / V_{cc} tolerance>

±25 × 10⁻⁶ Max. / V_{cc} ±5 % : 5
 ±50 × 10⁻⁶ Max. / V_{cc} ±10 % : 6
 ±100 × 10⁻⁶ Max. / V_{cc} ±10 % : 7



<Operating temperature range>

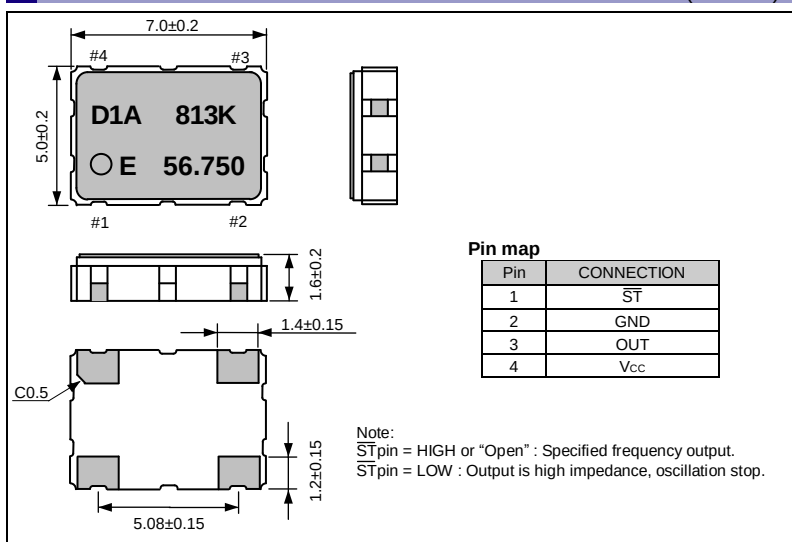
BLANK: 0 °C to +70 °C
 1: -10 °C to +70 °C
 2: -20 °C to +70 °C
 4: -40 °C to +85 °C (±50, ±100 × 10⁻⁶ only)

< Supply voltage / Frequency range>

X : V_{cc} = 3.3 V / 1.5 MHz to 160 MHz
 D : V_{cc} = 5.0 V / 1.5 MHz to 75 MHz

External dimensions

(Unit:mm)



Footprint (Recommended)

(Unit:mm)

