

Surface-Mount Oscillator



The XO-22C series is an ultra miniature package clock oscillator with dimensions 2.5 mm x 2.0 mm x 0.9 mm. It is mainly used in portable PC, mobile communications, and telecom devices and equipment.

FEATURES

- Size: 2.5 x 2.0 x 0.9 (mm)
- Ultra small package
- Tri-state enable / disable
- HCMOS compatible
- Tape and reel packaging
- I_R re-flow
- 1.8 V, 2.5 V, 3.3 V input voltage
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

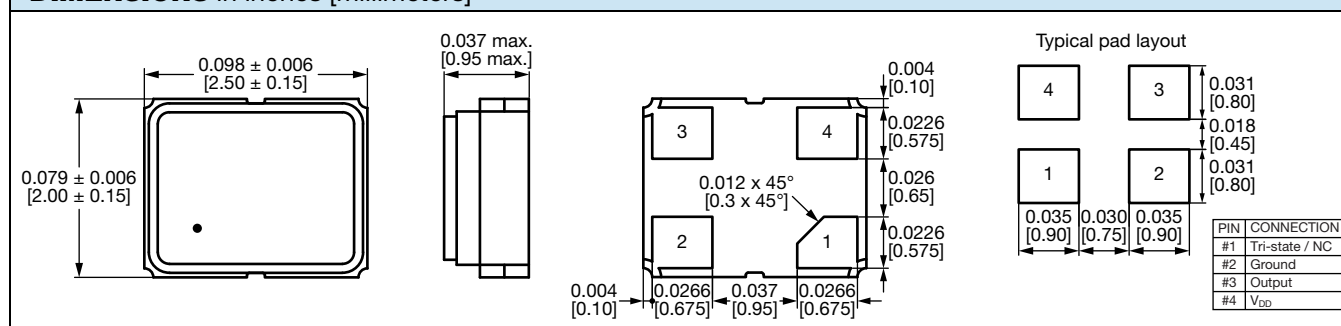
STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	VALUE
Frequency range	F_O	-	1.0 MHz to 125 MHz
Frequency stability ⁽¹⁾		All conditions	± 20 ppm, ± 25 ppm, ± 30 ppm, ± 35 ppm, ± 50 ppm, ± 100 ppm
Operating temperature range	T_{OPR}	-	0 °C to 70 °C -40 °C to +85 °C (option)
Storage temperature range	T_{STG}	-	-55 °C to +125 °C
Power supply voltage	V_{DD}	Select desired voltage	1.8 V $\pm$ 10 %
	V_{DD}		2.5 V $\pm$ 10 %
	V_{DD}		3.3 V $\pm$ 10 %
Aging (first year)		25 °C $\pm$ 3 °C	± 5 ppm
Supply current	I_{DD}	Frequency dependent	25 mA typ.
Output symmetry	Sym	At $\frac{1}{2} V_{DD}$	40 % / 60 % (45 % / 55 % option)
Rise time	t_r	10 % V_{DD} to 90 % V_{DD}	5 ns max.
Rise/fall time	t_f	90 % V_{DD} to 10 % V_{DD}	5 ns max.
Output voltage	V_{OH}	-	90 % V_{DD} min.
	V_{OL}	-	10 % V_{DD} max.
Output load	HCMOS load	-	20 pF max. (15 pF typ.)
Start-up time	t_s	-	10 ms max.
Pin 1, tri-state function		-	Pin 1 = H or open (output active at pin 3) Pin 1 = L (high impedance at pin 3)

Note

⁽¹⁾ Include: 25 °C tolerance, operating temperature range, input voltage change, first year aging, load change, shock and vibration

DIMENSIONS in inches [millimeters]



Note

- A 0.01 μ F bypass capacitor should be placed between V_{DD} (pin 4) and GND (pin 2) to minimize power supply line noise



PART NUMBER CONFIGURATIONS (to be used on all New Designs)

X	O	2	2	C	3	E	R	E	H	T	1	6	M	1	2	8
Oscillator		Package / Size		Logic	Voltage	Stability	Temp.	Tri-State	Package	Options						Frequency
		2 2		C = CMOS	3 = 3.3 V 2 = 2.5 V 1 = 1.8 V	C = ± 100 ppm D = ± 50 ppm F = ± 35 ppm G = ± 30 ppm E = ± 25 ppm H = ± 20 ppm	S = -10 °C to +70 °C R = -40 °C to +85 °C	N = no connect E = Tri-State	H = tape and reel	X = no options T = 45/55 Contact factory for available options						Use "M" as decimal place holder Frequency must be six digits - complete with "0" at the end

PART MARKING

Line 1: V25.00 (frequency)

Line 2: YWWA (date code / factory)



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.