

Surface-Mount Oscillator



The XO-12C series is an ultra miniature package clock oscillator with dimensions 2.0 mm x 1.6 mm x 0.8 mm. It is primarily used in tablets, mobile communications, medical devices, industrial controls, and consumer platforms.

FEATURES

- Size: 2.0 x 1.6 x 0.8 (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

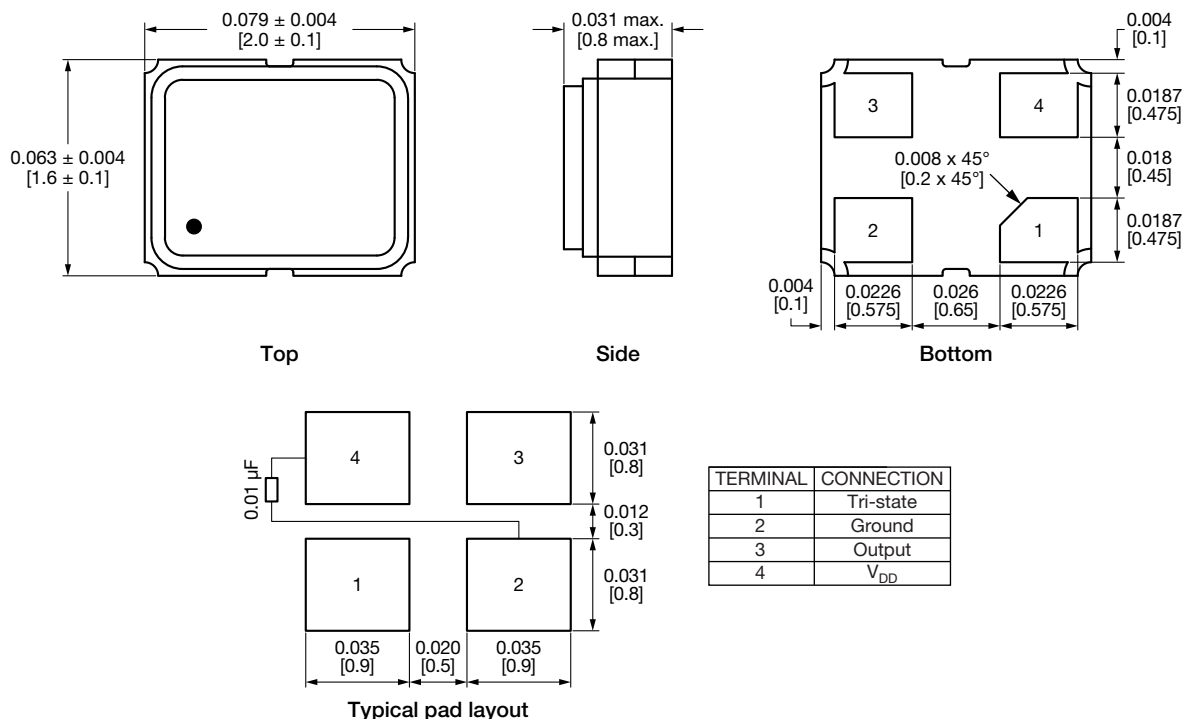


RoHS
COMPLIANT
HALOGEN
FREE

STANDARD ELECTRICAL SPECIFICATIONS			
PARAMETER	SYMBOL	CONDITION	VALUE
Frequency range	F_O	-	1.0 MHz to 60 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}	-	35 mA max.
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}	6 ns max.
Rise/fall time	t_f	90 % V_{DD} to 10 % V_{DD}	6 ns max.
Output voltage	V_{OH}	-	90 % V_{DD} min.
	V_{OL}	-	10 % V_{DD} max.
Output load	HCMOS load	-	30 pF max. (15 pF typ.)
Start-up time	t_s	-	10 ms max.
Phase jitter	J	12 kHz to 20 MHz	< 1.0 pS _{RMS}
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, aging, load change, shock and vibration

DIMENSIONS in inches [millimeters]

Note

- A 0.01 µF 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	1	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					
		1	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)



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