Surface-Mount Oscillator

The XOSM-531 series is an ultra miniature package clock oscillator with dimensions 5.0 mm x 3.2 mm x 1.3 mm. It is mainly used in portable PC and telecommunication devices and equipment.

FEATURES

- Size: 5.0 x 3.2 x 1.3 (mm)
- Miniature package
- Tri-state enable / disable
- HCMOS compatible
- Tape and reel
- I_R re-flow
- 1.8 V input voltage
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free
RoHS COMPLIANT
HALOGEN FREE

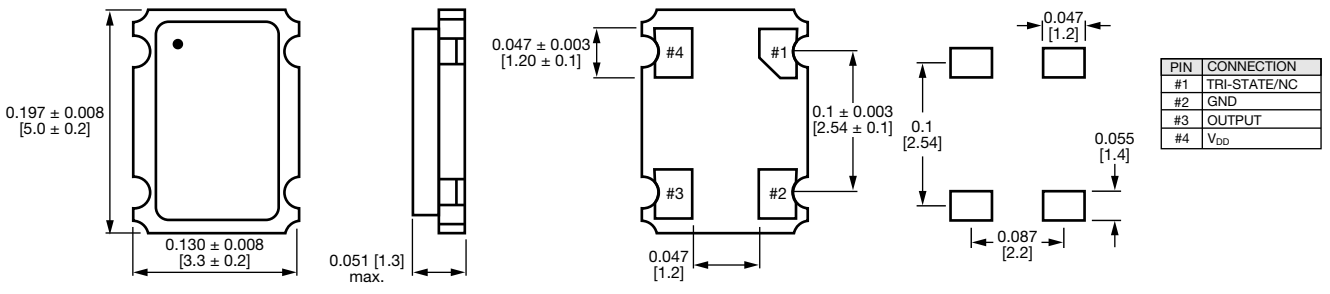
STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	VALUE
Frequency range	F_O	-	1.544 MHz to 100.000 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}	-	1.8 V ± 10 %
Aging (first year)		25 °C ± 3 °C	± 5 ppm
Supply current	I_{DD}	1.544 MHz to 9.999 MHz	6 mA max.
		10.000 MHz to 34.999 MHz	7 mA max.
		35.000 MHz to 49.999 MHz	15 mA max.
		50.000 MHz to 100.000 MHz	25 mA max.
Output symmetry	Sym	At $^1/_2$ V_{DD}	40 %/60 % (45 %/55 % option)
Rise time	t_r	10 % V_{DD} to 90 % V_{DD}	5 ns max.
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	-	30 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, aging, load change, shock 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	5 3	C	1	D	R	E	H	T	1 6 M 1 2 8
Oscillator	Package / Size	Logic	Voltage	Stability	Temp.	Tri-State	Package	Options	Frequency
	5 3	**C** = CMOS	**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

Previous / legacy part number information: still valid for existing designs;
all New Designs should use the new part configuration above

PREVIOUS / LEGACY GLOBAL PART NUMBERING

X O 6 1	C	T	E	A	N A	5 0 M
MODEL NUMBER	**FREQUENCY STABILITY**	**OPERATING TEMPERATURE (OTR)**	**ENABLE/ DISABLE**	**PACKAGE CODE**	**OPTION**	**FREQUENCY**
XO63 = XOSM-533 XO62 = XOSM-532 XO61 = XOSM-531 XO57 = XOSM-57 XO37 = XOSM-573 XO27 = XOSM-572 XO17 = XOSM-571	C = 0.01 % (100 ppm) D = 0.005 % (50 ppm) E = 0.0025 % (25 ppm)	T = 0 °C to + 70 °C R = - 40 °C to + 85 °C	E = disable to tristate	**Tape and reel** H = RF7 **Bulk** A = B04 (XO63, XO62, XO61) C = D06 (XO57, XO37, XO27, XO17)	NA = no additional options 60 = 45/55 symmetry Contact factory for all other options	4M = 4 MHz 40M = 40 MHz 100M = 100 MHz 12M288 = 12 288 MHz “M” is used as decimal place holder in frequency

Example: XO61CTEANA50M

XOSM-531	B	R	E	50M	e4
MODEL	FREQUENCY STABILITY	OTR	ENABLE / DISABLE	FREQUENCY/MHz	JEDEC® LEAD (Pb)-FREE STANDARD
	AA = 0.0025 % (25 ppm) A = 0.005 % (50 ppm) B = 0.01 % (100 ppm) standard	blank = standard R = -40 °C to +85 °C	E = disable to tri-state		

PART MARKING

Line 1: M28__XXXXX (part number)

Line 2: XX.XXXXM (frequency)

Line 3: yywwvv (date/factory code)

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