

## 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<sub>R</sub> re-flow
- 1.8 V input voltage
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

STANDARD ELECTRICAL SPECIFICATIONS			
PARAMETER	SYMBOL	CONDITION	VALUE
Frequency range	F <sub>O</sub>	-	1.544 MHz to 100.000 MHz
Frequency stability <sup>(1)</sup>		all conditions	± 25 ppm, ± 50 ppm, ± 100 ppm
Operating temperature range	T <sub>OPR</sub>	-	0 °C to 70 °C
			- 40 °C to + 85 °C (option)
Storage temperature range	T <sub>STG</sub>	-	- 55 °C to + 125 °C
Power supply voltage	V <sub>DD</sub>	-	1.8 V ± 10 %
Aging (first year)		25 °C ± 3 °C	± 5 ppm
Supply current	I <sub>DD</sub>	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 <sub>DD</sub>	40 %/60 % (45 %/55 % option)
Rise time	t <sub>r</sub>	10 % V <sub>DD</sub> to 90 % V <sub>DD</sub>	5 ns max.
Fall time	t <sub>f</sub>	90 % V <sub>DD</sub> to 10 % V <sub>DD</sub>	5 ns max.
Output voltage	V <sub>OH</sub>	-	90 % V <sub>DD</sub> min.
	V <sub>OL</sub>	-	10 % V <sub>DD</sub> max.
Output load	HCMOS load	-	30 pF max. (15 pF typ.)
Start-up time	t <sub>s</sub>	-	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

<sup>(1)</sup> Include: 25 °C tolerance, operating temperature range, input voltage change, aging, load change, shock vibration

DIMENSIONS in inches [millimeters]											
<table border="1"> <thead> <tr> <th>PIN</th> <th>CONNECTION</th> </tr> </thead> <tbody> <tr> <td>#1</td> <td>TRI-STATE/NC</td> </tr> <tr> <td>#2</td> <td>GND</td> </tr> <tr> <td>#3</td> <td>OUTPUT</td> </tr> <tr> <td>#4</td> <td>V<sub>DD</sub></td> </tr> </tbody> </table>		PIN	CONNECTION	#1	TRI-STATE/NC	#2	GND	#3	OUTPUT	#4	V <sub>DD</sub>
PIN	CONNECTION										
#1	TRI-STATE/NC										
#2	GND										
#3	OUTPUT										
#4	V <sub>DD</sub>										

### Note

- A 0.01 μF bypass capacitor should be placed between V<sub>DD</sub> (pin 4) and GND (pin 2) to minimize power supply line noise



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

GLOBAL PART NUMBER												
X	O	6	1	C	T	E	A	N	A	5	0	M
MODEL				FREQUENCY STABILITY	OTR	ENABLE/DISABLE	PACKAGE CODE	OPTIONS		FREQUENCY		

GLOBAL PART NUMBERING OPTIONS												
X	O	5	7	C	T	E	C	N	A	4	0	M
<b>MODEL NUMBER</b>				<b>FREQUENCY STABILITY</b>	<b>OPERATING TEMPERATURE (OTR)</b>	<b>ENABLE/DISABLE</b>	<b>PACKAGE CODE</b>	<b>OPTION</b>		<b>FREQUENCY</b>		
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	<b>Tape and reel</b> H = RF7  <b>Bulk</b> 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: XO57CTECNA40M												

PART MARKING	
Line 1:	M28_XXXXX (part number)
Line 2:	XX.XXXXM (frequency)
Line 3:	yywwvv (date/factory code)



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