

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



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 | ± 25 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] | | | | | | | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----|------------|----|--------------|----|-----|----|--------|----|-----------------|
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| <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_{DD}</td> </tr> </tbody> </table> | | PIN | CONNECTION | #1 | TRI-STATE/NC | #2 | GND | #3 | OUTPUT | #4 | V _{DD} |
| PIN | CONNECTION | | | | | | | | | | |
| #1 | TRI-STATE/NC | | | | | | | | | | |
| #2 | GND | | | | | | | | | | |
| #3 | OUTPUT | | | | | | | | | | |
| #4 | V _{DD} | | | | | | | | | | |

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



| ORDERING INFORMATION | | | | | |
|----------------------|------------------------------------------------------------------------|--------------------------------------------|--------------------------|---------------|----------------------|
| XOSM-531 | B | R | E | 50M | e4 |
| 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 |
| MODEL NUMBER | | FREQUENCY STABILITY | | OPERATING TEMPERATURE (OTR) | | ENABLE/DISABLE | PACKAGE CODE | OPTION | | FREQUENCY | | |
| XO63 = XOSM-533 XO62 = XOSM-532 XO61 = XOSM-531 XO57 = XOSM-573 XO37 = XOSM-572 XO27 = XOSM-571 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: XO57CTECNA40M | | | | | | | | | | | | |

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



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