

OC Type

7.0 x 5.0 mm SMD Crystal Oscillator

FEATURE

- Typical 7.0 x 5.0 x 1.3 mm ceramic SMD package.
- Output frequency up to 166MHz
- Tr-state enable/disable.

TYPICAL APPLICATION

- xDSL, WLAN, Fiber/10G-Bit Ethernet
- Notebook, PDA
- PC main board, VGA card



RoHS Compliant

DIMENSION (mm)



SOLDER PAD LAYOUT (mm)



ELECTRICAL SPECIFICATION

| Parameter | 3.3V | | 2.5V | | 1.8V | | unit |
|--|--|----------------------|----------------------|----------------------|----------------------|----------------------|------|
| | Min. | Max. | Min. | Max. | Min. | Max. | |
| Supply Voltage Variation(V_{DD}) | V _{DD} -10% | V _{DD} +10% | V _{DD} -10% | V _{DD} +10% | V _{DD} -10% | V _{DD} +10% | V |
| Frequency Range | 0.0137 | 166 | 0.0137 | 133 | 0.0137 | 125 | MHz |
| Standard Frequency | 2.048, 25, 26, 27, 50, 66, 667, 100, 125 | | | | | | |
| Supply Current | | | | | | | mA |
| 13.7 kHz ≤ Fo ≤ 70 kHz | — | 1 | — | 1 | — | 1 | |
| 0.3125 MHz ≤ Fo < 35.328 MHz (A1) | — | 10 | — | 8 | — | 7 | |
| 30 MHz ≤ Fo < 75 MHz | — | 20 | — | 18 | — | 15 | |
| 75 MHz ≤ Fo < 133 MHz | — | 35 | — | 30 | — | 25 | |
| 133 MHz ≤ Fo | — | 45 | — | 40 | — | — | |
| Output Level (CMOS) Output High (Logic "1") | 2.97 | — | 2.25 | — | 1.62 | — | V |
| Output Low (Logic "0") | — | 0.33 | — | 0.25 | — | 0.18 | |
| Transition Time: Rise/Fall Time | | | | | | | nSec |
| 13.7 kHz ≤ Fo ≤ 70 kHz | — | 50 | — | 50 | — | 50 | |
| 0.3125 MHz ≤ Fo < 100 MHz | — | 5 | — | 5 | — | 5 | |
| 100 MHz ≤ Fo | — | 3 | — | 3 | — | 3 | |
| Start Time | — | 5 | — | 5 | — | 5 | mSec |
| Output Drive Capability (CL) | — | 15 | — | 15 | — | 15 | pF |
| Tri-State (Input to Pin1) Enable (High voltage or floating) | 2.31 | — | 1.75 | — | 1.26 | — | V |
| Disable (Low voltage or GND) | — | 0.99 | — | 0.75 | — | 0.54 | |
| Period Jitter(Pk-Pk) | — | 40 | — | 40 | — | 40 | pSec |
| RMS Phase Jitter (Integrated 12 kHz~20 MHz) | — | 1 | — | 1 | — | 1 | pSec |
| Standby Current | — | 10 | — | 10 | — | 10 | µA |
| Aging (@ 25°C 1st year) | — | ±3 | — | ±3 | — | ±3 | ppm |
| Storage Temp. Range | -55 | 125 | -55 | 125 | -55 | 125 | °C |

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position.

+ Transition times are measured between 10% and 90% of V_{DD}, with an output load of 15pF.

FREQ. STABILITY vs. TEMP. RANGE

| Temp.(°C) | ppm | | |
|------------|-----|-----|-----|
| | ±20 | ±25 | ±50 |
| -10 ~ +60 | ○ | ○ | ○ |
| -20 ~ +70 | △ | ○ | ○ |
| -40 ~ +85 | △ | ○ | ○ |
| -40 ~ +125 | × | × | ○ |

* ○: Available △: Conditional X: Not available

* Inclusive of calibration @ 25 °C, operating temperature range, input voltage variation, load variation, aging (1st year), shock, and vibration

Note: not all combination of options are available. Other specifications may be available upon request.

Rev(30)04/2017

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Model Numbering Guide – Crystal Oscillator

Available options

| Type | package (mm) | Supply Voltage(V) | Tri-State Function | Freq. Stability (ppm) | Temp. Range(°C) | Output Logic and Symmetry | Oscillator Mode | Appearance | Lead Free | Dash | Freq. (MHz) |
|--------------------------------------|---|--|--|--|---|--|---|------------|-------------------|------|-------------|
| O: Oscillator | Z:2.0 x 1.6 Y:2.5 x 2.0 X:3.2 x 2.5 V:5.0 x 3.2 C:7.0 x 5.0 | E: 2.8/3.0/3.3 J: 2.5 K: 1.8 P: 1.5 L: 1.2 M: 0.9 | T: Fixed-Freq with Tri-State M: Multiplier Freq with Tri-State(only for V/C package) U: Ultra Low Noise design | A: ±5 B: ±10 P: ±15 C: ±20 D: ±25 E: ±30 F: ±40 G: ±50 H: ±100 | E: 0~+85 I: -10~+60 C: -20~+70 D: -30~+85 L: -40~+85 J: -40~+105 H: -40~+125 F: -55~+125 | J: CMOS 15pF / 50±5% K: CMOS 15pF / 50±10% | A: AT Fundamental T: AT 3rd Overtone Not Selectable by Customer | N :Normal | F: RoHS Compliant | - | XX.XXXXXX |
| P: Programmable Oscillator | Y: 2.5 x 2.0 X: 3.2 x 2.5 | E: 2.8/3.0/3.3 J: 2.5 K: 1.8 | T: Fixed-Freq with Tri-State | C: ±20 D: ±25 G: ±50 H: ±100 | I: -10~+60 C: -20~+70 D: -30~+85 L: -40~+85 | J: CMOS 15pF / 50±5% | | | | | |
| O: Oscillator (Differential Output) | A:3.2x2.5 W:5.0x3.2 T:7.0x5.0 | E: 3.3 J: 2.5 | T: Input to pin 2 (std.) R: Input to pin 1 (case by case) U: Ultra Low Jitter design (Only for T package) | D: ±25 G: ±50 H: ±100 | | L: LVPECL / 50±5% V: LVDS / 50±5% H: HCSL / 50±5% | | | | | |
| O: Oscillator (Fast Delivery series) | W:5.0x3.2 T:7.0x5.0 | E: 3.3 J: 2.5 | M: Multiplier Freq with pin 2 Tri-State N: Multiplier Freq. with PIN 1 Tri-State | D: ±25 G: ±50 H: ±100 | | J: CMOS 15pF / 50±5% L: LVPECL / 50±5% V: LVDS / 50±5% | | | | | |

O Y E T C C J A N F – 13.000000

*Not all combinations of options are available.

Example: OYETCCJANF-13.000000

| | |
|-------------------|-----------------------------|
| Type | Oscillator |
| Package | 2.5 x 2.0 mm |
| Supply Voltage(V) | 3.3 V |
| Tri-State . | Fixed-Freq. |
| Freq. Stability | ±20ppm |
| Temp Range | -20~+70 °C |
| Output | CMOS 15 pF / Symmetry 50±5% |
| Oscillator Mode | AT Fundamental |
| Appearance | Normal Appearance |
| Lead Free | RoHs Compliant |
| Frequency | 13.000000 MHz |