

AT-Cut Crystal - Square Wave - 12.0 Volts 1.25MHz ~ 100.0MHz

- Frequency Range 1.25MHz to 100.0MHz
- 20.3 x 20.3 x 10.5mm 5 pin metal, solder-sealed package
- Supply Voltage 12.0 Volts
- AT-Cut Crystal
- Squarewave Output
- EFC (Voltage control) as standard



DESCRIPTION

OC18T12A series oven-controlled crystal oscillators are close tolerance OCXOs with good phase noise performance.

SPECIFICATION

| | |
|--------------------------------|--|
| Crystal Cut: | AT-cut |
| Output Waveform: | Square Wave |
| Supply Voltage: | +12.0 VDC $\pm 0.5V$ |
| Frequency Range: | 1.25MHz to 100.0MHz |
| Initial Calibration Tolerance: | $\pm 0.5\text{ppm max. (at } V_{\text{CON}} 2.5V)$ |
| Frequency Stability | |
| over 0° to +60°C: | $\pm 0.02\text{ppm}$ |
| over -20° to +70°C: | $\pm 0.05\text{ppm}$ |
| over -40° to +85°C: | $\pm 0.1\text{ppm}$ |
| vs. Voltage Change: | $< \pm 20\text{ppb for } \pm 5\% \text{ change}$ |
| vs. Ageing: | $\pm 5.0\text{ppb max per day}$ $\pm 0.5\text{ppm per first year}$ $\pm 3.0\text{ppm over 10 years}$ |
| vs. Load Change: | $< \pm 20\text{ppb for } \pm 5\% \text{ change}$ |

Warm-up Time: 3 minutes max. to within $\pm 0.5\text{ppm}$ of nominal freq.

| | |
|-------------------------|--|
| Voltage Control | |
| Control Voltage Centre: | +2.5 Volts (V_{CON}) |
| Freq. Deviation Range: | $\pm 5.0\text{ppm min.}, \pm 20\text{ppm max.}$ ref. to 25°C |
| Control Voltage Range: | 2.5V $\pm 2.0\text{Volts}$ |
| Transfer Function: | Positive: Increasing control voltage increases output frequency. |
| Input Impedance: | 100k Ω minimum |
| EFC Linearity: | $\pm 10\%$ maximum |

Power Dissipation: 200mA max. steady state
500mA max. at turn on

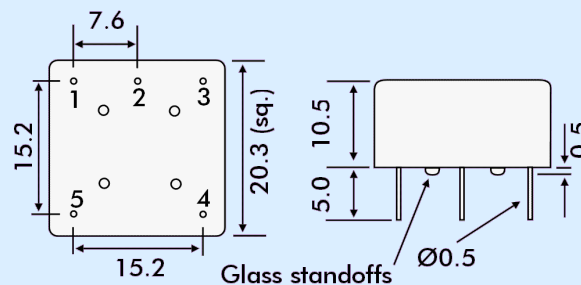
| | |
|--------------------|--|
| Output | |
| Load: | 15pF HCMOS |
| Output Logic HIGH: | +4.5V minimum |
| Output Logic LOW: | 0.5V maximum |
| Duty Cycle: | 50% $\pm 10\%$ |
| Rise/Fall Time: | 5ns max (20%~80%) Frequency dependant |
| Reference Voltage: | +4.0 $\pm 0.3\text{VDC}$ or custom |

| | |
|----------------------|---------------------------------|
| Environmental | |
| Storage Temperature: | -55° to +125°C |
| Shock: | 2000g, 0.3ms $\frac{1}{2}$ sine |
| Vibration: | 10 ~ 2000Hz / 10g |

PHASE NOISE (at 10MHz)

| Offset | dBc/Hz |
|--------|--------|
| 1Hz | -75 |
| 10Hz | -100 |
| 100Hz | -130 |
| 1kHz | -140 |
| 10kHz | -150 |

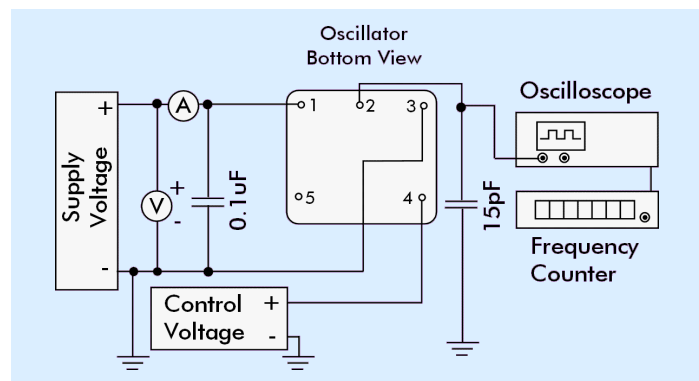
OUTLINE & DIMENSIONS



Pin Connections

- 1 Supply Control
- 2 RF Output
- 3 Ground/case
- 4 Voltage Control EFC
- 5 Reference Voltage Output

TEST CIRCUIT



PART NUMBER FORMAT

Example: **OC18GT12A-10.000-0.05/-20+70**

OCXO Package: OC18

RoHS Compliance

G: RoHS Compliant

Blank: Non-compliant

T: Output Squarewave

12: Supply Voltage 12.0Volts

A: AT-Cut Crystal

Nominal Frequency 10.0MHz

Stability in ppm

Operating Temperature Range °C

Lowest Temperature/Highest Temperature