



Features and Benefits

Frequency range: 10MHz
Supply voltage: 5.0V
Steady current: 2.5W Max.
Output waveform: HCMOS
Frequency stability vs. operating temperature: ±0.2ppb
Aging: ±20ppb per year
Phase noise@100KHz: -160dBc/Hz
Operating temperature: -40°C to +85°C
Size: 36x27x18mm

Typical Applications

SATCOM System
Cellular Base Stations
Radar Applications

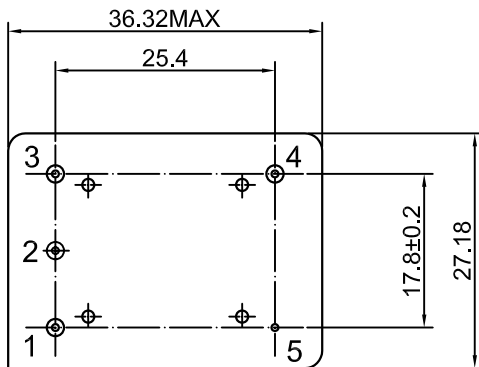
Description

DOCXO3627BM-10MHz-323 is designed for applications where exceptional frequency stability and timing is required. It has both excellent temperature performance and short term stability. These characteristics make it an excellent choice for timing applications requiring holdover of < 10 us for 24 hours.

Mechanical Drawing & Pin Connections

Drawing No: MD150083-5

Bottom View



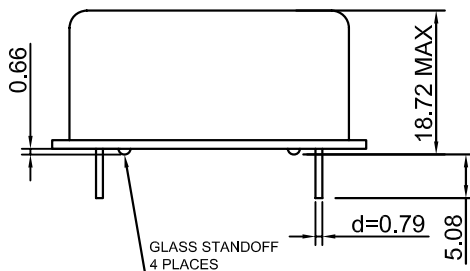
Pin Connections:

| Pin | Function |
|-----|---|
| 1 | Control Voltage or N.C. |
| 2 | Reference Voltage or Oven Monitor or N.C. |
| 3 | Supply Voltage |
| 4 | RF Output |
| 5 | Ground |

Unit in mm

1mm = 0.0394 inches

Side View





Specifications

| Oscillator Specification | Sym | Condition | Value | | | Unit | Note |
|---|------------------|--|----------|------|-------|------|--|
| | | | Min. | Typ. | Max. | | |
| Operational Frequency | F _{nom} | | | 10 | | MHz | |
| RF Output | | | | | | | |
| Signal Waveform | | | HCMOS | | | | |
| Load | R _L | | | 15pf | | | |
| H-Level Voltage | V _H | | 4.4 | | | V | |
| L- Level Voltage | V _L | | | | 0.3 | V | |
| Duty Cycle | | @+2.5V | 45 | 50 | 55 | % | |
| Spurious | | | | | -60 | dBc | |
| Power Supply | | | | | | | |
| Reference Voltage | | | 2.716 | 2.8 | 2.884 | V | |
| Reference Voltage Load | | | 9 | | | kohm | |
| Reference Voltage Temp Stability | | | -0.5 | | +0.5 | mV | |
| Supply Voltage | V _s | | 4.75 | 5.0 | 5.25 | V | |
| Power Consumption | | Steady state @+25°C | | | 2.5 | W | power |
| | | Warm-up@ turn on | | | 1.75 | A | current |
| Frequency Adjustment Range | | | | | | | |
| Electronic Frequency Control (EFC) | | V _{co} @Min Voltage | -0.25 | | -0.15 | ppm | Ref to freq. at nominal center voltage |
| | | V _{co} @Max Voltage | +0.15 | | +0.25 | ppm | |
| EFC voltage | V _c | | 0 | | 2.8 | V | |
| Center Voltage | | When not connected, V _{co} input is internally held at this voltage | | 1.4 | | V | |
| Linearity | | | -10 | | +10 | % | |
| Input Impedance | | | 50 | | | kohm | |
| EFC Slope | | | positive | | | | |
| Frequency Stability | | | | | | | |
| Versus Operating Temperature Range | | -40°C to +85°C | | | ±0.2 | ppb | |
| Initial Tolerance @+25°C after turn on power 30±5 min | | ≤ 90 days following date code; VCO Input at Center Voltage ±0.001V | -0.1 | | +0.1 | ppm | |
| Versus supply voltage | V _s | ±5% change | -0.1 | | +0.1 | ppb | |
| Warm-up | | In 5 min@+25±1°C Refer to 1 hour | -20 | | +20 | ppb | |
| Retrace | | After 60 minutes from turn on, following 24 hours minimum on time, and 24 hours maximum off time | -5 | | +5 | ppb | At constant temperature and voltage. Referenced to frequency at off time |
| Aging Per Day | | After 30days | | | ±0.1 | ppb | |
| Aging 1 st Year | | | | | ±20 | ppb | |
| Aging 10 st Year | | | | | ±100 | ppb | |
| Allan Variance | | 1s | | | 0.005 | ppb | |
| | | 10s | | | 0.01 | ppb | |
| SSB Phase noise | | 1Hz | | | -90 | dBc | |
| | | 10Hz | | | -120 | dBc | |
| | | 100Hz | | | -135 | dBc | |
| | | 1kHz | | | -145 | dBc | |
| | | 10kHz | | | -155 | dBc | |
| | | 100kHz | | | -160 | dBc | |



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Double Oven Controlled Crystal Oscillator

Environmental, Mechanical Conditions

| | |
|---------------------------|---|
| Storage temperature range | -40°C to +85°C |
| Shock (non-operating) | Per MIL-STD-202, Method 213, test condition J; 30G, half sine, 11ms |
| Vibration (non-operating) | Per MIL-STD-202, Method 201; 0.06" total p-p, 10 to 55Hz |