



Features and Benefits

Frequency range: 10MHz
Supply voltage: 5.0V
Steady current: 2.5W Max.
Output waveform: HCMOS
Frequency stability vs. operating temperature: ± 0.2 ppb
Aging: ± 20 ppb 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

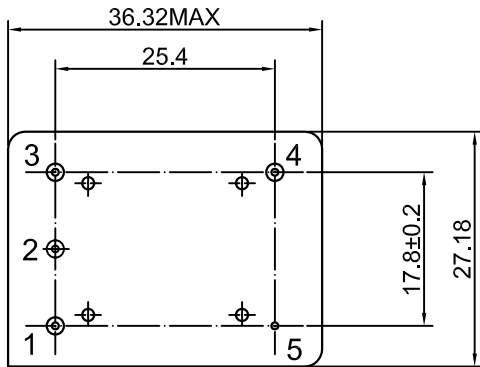
Description

DOCXO3627BM-10MHz-322 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

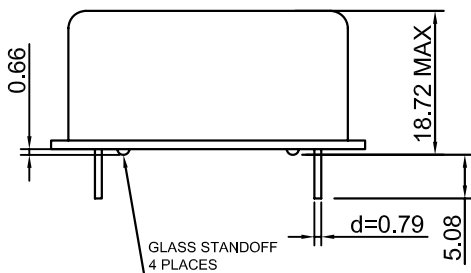


Pin Connections:

| 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 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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DOCXO3627BM-10MHz-' 22
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 |