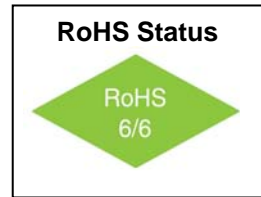


OCXO - Ultra Miniature, Ultra Low Power HCMOS



Features

- 5MHz to 50MHz Frequency Range
- Industry's smallest OCXO
- Fast Warm-up (30s typical)
- Eco-friendly < 120mW power consumption
- HCMOS output
- Vibration resistant construction



Applications

- PLL reference for Telecommunication Systems
- Portable (battery operated) devices
- Guidance Systems
- Instrumentation / Test and Measurement

Electrical Specifications

| Parameter | Symbol | Condition | Min | Typ | Max | Unit | Note |
|-----------------------------|--------------|--|--------------|-------------------------------------|-------------------|------------|--|
| Frequency Range | F | | 5 | | 50 | MHz | |
| Frequency Stability | $\Delta F/F$ | Vs. Operating Temp. E: -30°C to +70°C | | ± 50 | | ppb | STD option shown. See "How to Order" Chart below |
| | | Vs. Supply Voltage | | ± 2 | | ppb | Ref. Vcc typ. |
| | | Vs. Aging / Day Vs. Aging / Year | | | 0.5 ± 0.05 | ppb ppm | After 30 days. Enhanced option shown. See "How to Order" chart |
| Operating Temperature Range | T | | -40° | | +85° | °C | STD option shown. See "How to Order" chart |
| Allan Variance | | 1s | | 20e-12 | | | |
| SSB Phase Noise | | 1Hz 10Hz 100Hz 1KHz 10KHz | | -90 -125 -145 -155 -165 | | dBc/Hz | For 10MHz Oscillator |
| Retrace | | After 30 min. | | | ± 20 | ppb | |
| G-sensitivity | | worst direction | | | ± 1 | ppb/g | |
| Supply Voltage | Vcc | | 4.75 3.14 | 5.0 3.3 | 5.25 3.46 | V | |
| Power Consumption | P | steady state, 25°C start-up | | 0.12 0.7 | 0.15 1.2 | W | |
| Warm up time | τ | to 0.1ppm accuracy from +25°C | | 30 | 60 | sec | Note 1 |

*Note 1: Warm up time is affected by input voltage, initial accuracy, frequency, aging and other conditions.



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Electrical Specifications

| Parameter | Symbol | Condition | Min | Typ | Max | Unit | Note |
|---------------------------|------------------|---|---------------|--------------|--------------|-----------|--|
| HCMOS / TTL Output Levels | | HCMOS/TTL | 10KOhm / 15pF | | | | Order Code H |
| | V _H | V _{cc} = 5V V _{cc} =3.3V | 3.9 2.4 | | | V | |
| | V _L | | | | 0.4 | V | |
| Rise / Fall time | | At 10MHz | | | 10 | ns | |
| Duty Cycle | | | 45 | | 55 | % | |
| Control Voltage | V _c | V _{cc} = 5 V _{cc} =3.3V | 0 0 | | 4.3 2.8 | V | |
| Pull Range | | from nominal F | ±0.5 | ±1 | | ppm | |
| Deviation slope | | Monotonic, Positive | | 0.6 0.45 | | ppm/ V | V _{cc} = 3.3V V _{cc} = 5V |
| Reference output | V _{ref} | V _{cc} = 5 V _{cc} =3.3V | 4.05 2.70 | 4.20 2.80 | 4.35 2.90 | V | |

Absolute Maximum Ratings

| Parameter | Symbol | Condition | Min | Typ | Max | Unit | Note |
|---------------------------|-----------------|-----------|------|-----|----------------------|------|------|
| Supply Break Down Voltage | V _{cc} | | -0.5 | | V _{cc} +20% | V | |
| Control Voltage | V _c | | -1 | | 9 | V | |

Environmental and Mechanical

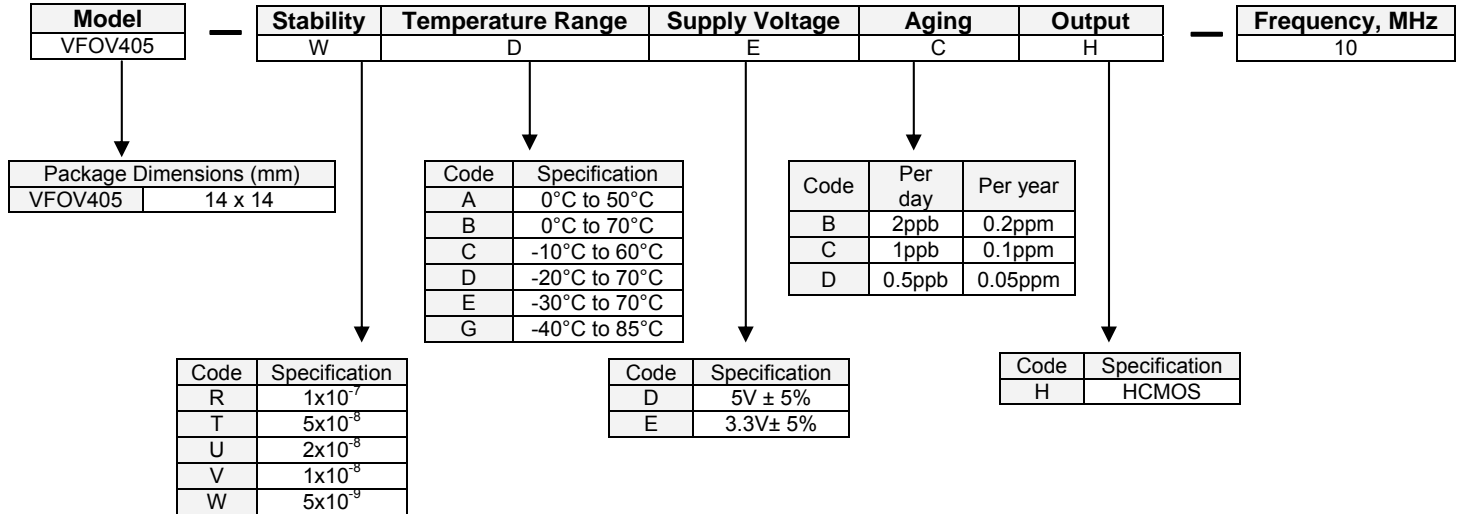
| Parameter | Specification |
|----------------------|---|
| Storage Temperature | -60°C to +90°C |
| Humidity | Non-condensing, 95% |
| Mechanical Shock | Per MIL-STD-202, 30g, half sine, 11ms |
| Vibration | Per MIL-STD-202, 10g swept Sine to 2000Hz |
| Soldering Conditions | 260°C for 10s. |



VFOV405 OCXO - Ultra Miniature, Ultra Low Power HCMOS



How to Order



Available Frequency Stabilities over Operating Temperature Ranges

| Order Code | Temperature Range | Stability | | | | |
|------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | | 1x10 ⁻⁷ | 5x10 ⁻⁸ | 2x10 ⁻⁸ | 1x10 ⁻⁸ | 5x10 ⁻⁹ |
| A | 0°C to 50°C | * | * | * | * | ◇ |
| B | 0°C to 70°C | * | * | * | ◇ | |
| C | -10°C to 60°C | * | * | * | * | ◇ |
| D | -20°C to 70°C | * | * | * | | |
| E | -30°C to 70°C | * | * | * | | |
| G | -40°C to 85°C | * | ◇ | ◇ | | |

◇ Only available below 30Mhz



VFOV405 OCXO - Ultra Miniature, Ultra Low Power HCMOS



Package

