

DOXO-3 OSCILLATOR

1 Hz to 10 kHz*

Low Power Crystal Oscillator

DESCRIPTION

The DQXO-3 oscillator has very high accuracy, stability and low current. The design consists of a CMOS-compatible hybrid circuit, packaged in a hermetically sealed standard TO-39 metal package. Permanent, precision tuning of the oscillator allows for very tight calibration tolerance and eliminates the need for a trimming capacitor, a major source of long-term frequency drift. The specifications and characteristics of the DQXO-3 vary with frequency. The characteristics of the 400Hz model are presented in this data sheet.



FEATURES

- Very low power consumption
- Low aging
- CMOS compatible
- Full military testing available
- Multiple frequency output available (6-pin TO-5 package)
- Designed and manufactured in the USA

APPLICATIONS

Industrial, Computer & Communications

- General purpose clock oscillator
- Remote data timers

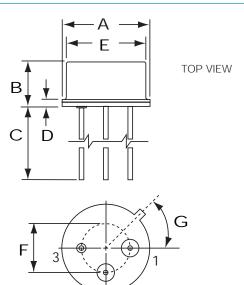
Military & Aerospace

- Process controllers
- Repeat cycle timers
- Tone generators
- Airborne hybrid computer
- Flight recorder

PIN CONNECTIONS

- $1 V_{DD}$
- 2 Output
- 3 Ground

PACKAGE DIMENSIONS



DIM	INCHES	mm		
Α	0.380 MAX.	9.65 MAX.		
В	0.185 MAX.	4.70 MAX.		
С	0.500 Min.	12.70 Min.		
D	0.029	0.74		
Е	0.326 MAX.	8.28 MAX		
F	0.200 Ref.	5.08 Ref.		
G	45°	45°		

BOTTOM VIEW

Note:

- 1. All metal parts gold plated
- 2. Leads are 0.019 in.[0.48mm] MAX.

10142 - Rev C



SPECIFICATIONS-DQXO-3 400Hz

Specifications are typical at 25°C unless otherwise noted. Specifications are subject to change without notice.

Supply Voltage (V_{DD}) 5V ± 10% (3.3V available)

Calibration A: ±0.01% (100ppm)

Tolerance* B: ± 0.1%

C: ± 1.0%

Frequency Stability** -55°C to +125°C -350 ppm TYP.

-600 ppm MAX.

-40°C to +85°C -150 ppm TYP.

-300 ppm MAX.

Voltage Coefficient 3 ppm/V TYP.

10 ppm/V MAX.

Aging, first year 10 ppm/year MAX.

Shock 1,000g, 1 msec.,1/2 sine 3 ppm MAX.

Vibration 10g rms10-2000 Hz 3 ppm MAX.

Frequency change vs.

10% Output Load Change 1 ppm MAX.

Operating Temperature -10°C to +70°C Commercial

-40°C to +85°C Industrial

-55°C to +125°C Military

ABSOLUTE MAXIMUM RATINGS

Supply Voltage V_{DD} -0.3V to 7.0V Storage Temperature -55°C to +125°C Maximum Process Temp. 260°C, 10 seconds

ELECTRICAL CHARACTERISTICS

DQXO-400Hz

All parameters are measured at ambient temperature with a 10M Ω and 10pF load at 5V.

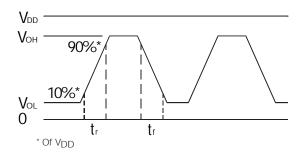
SYMBOL PARAMETER		MIN.	TYP.	MAX.	UNIT
V	Output Voltage Hi	4.8	4.95		V
V	Output Voltage Lo		0.05	0.4	V
*t _r	Rise Time (10%-90%)		60	150	nsec.
*t _f	Fall Time (10%-90%)		60	150	nsec.
SYM	Duty Cycle	40	50	60	%
I _{DD}	Supply Current				
	$V_{DD} = 5V$		150	250	μΑ

^{*} Models with faster rise and fall time available, consult factory.

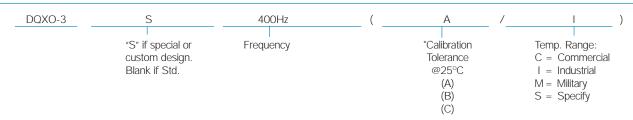
PACKAGING

DQXO-3 - Tray Pack (Standard)

OUTPUT WAVE FORM



HOW TO ORDER DQXO-3 CRYSTAL OSCILLATORS



^{*} Other calibration fill in ppm



^{*} Tighter tolerances available.

^{**} Does not include calibration tolerance. Positive variations small compared to negative variations.