

CFPT-5103, -5104, -5105, -5106, -5133, -5144

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Recommended For New Designs

Delivery Options

- Please contact our sales office for current leadtimes

Description

- The CFPT-5100 series of temperature compensated crystal oscillators provide for ultra high stabilities down to ± 1.5 ppm over an operating temperature range of -55 to +95°C. Housed in an industry standard 14 pin DIL package. Output frequencies are available between 1.0kHz and 40.0MHz.

Waveform

- Square HCMOS

Package Outline

- 14-pin compatible resistance welded enclosure, hermetically sealed with glass to metal seals

Standard Frequencies

- 1.0MHz, 1.0240MHz, 2.097152MHz, 3.840MHz, 4.0960MHz, 5.0MHz, 6.1440MHz, 8.1840MHz, 8.1920MHz, 9.60MHz, 10.0MHz, 10.520MHz, 10.949297MHz, 12.0MHz, 16.0MHz, 16.3840MHz, 20.0MHz, 20.460MHz, 21.0MHz, 24.0MHz, 30.0MHz, 38.880MHz,

Ageing

- ± 1 ppm max. in first year
- ± 5 ppm max. for 10 years

Frequency Stability

- Temperature: see table
- Supply Voltage Variation $\pm 5\% \leq 25\text{MHz} \leq \pm 0.2\text{ppm}$
 $>25\text{MHz} \leq \pm 0.3\text{ppm}$
- Load Coefficient $15\text{pF} \leq 5\text{pF} \leq \pm 0.1\text{ppm}$

Frequency Adjustment

- $\geq \pm 5$ ppm External Control Voltage 0.25V to 2.5V applied to pin 1 (CFPT- 5103, -5133, -5105)
- $\geq \pm 5$ ppm External 100k Ω Potentiometer connected as a variable resistor from pin 1 to ground (CFPT-5104, -5144, -5106)

Storage Temperature Range

- -55 to +95°C

Environmental Specification

- Bump: 1000 ± 10 bumps at 400m/s² in each of the three mutually perpendicular planes

- Shock: 981m/s² for 6ms duration, three shocks in each direction along the three mutually perpendicular planes
- Solderability: IEC 68-2-20 Test Ta Method1 (Solder Bath) (MIL-STD-202 Method 208), Temperature 235°C
- Vibration: 10 to 60Hz 0.75mm displacement, 60 to 500Hz 98.1m/s² acceleration, 30 minutes in each of three mutually perpendicular planes at 1 octave per minute
- Damp Heat: IEC 68-2-3 Test Ca (Steady State), Duration 56 days, recovery time 12 hours.
- Robustness of Termination: IEC 68-2-21 Test Ua (Tensile)
- Sealing: IEC 68-2-17 Test Qc Method 2 (Gross Leak) IEC 68-2-17 Test Qk (Fine Leak)
- Marking: Heat cured epoxy or engraving, resistant to all common solvents

Marking

- Manufacturer
- Date Code (Year/Week)
- Part number
- Frequency (MHz)
- Offset frequency at 25°C (Hz)
- Static Sensitivity Symbol Δ (denotes pin 1)

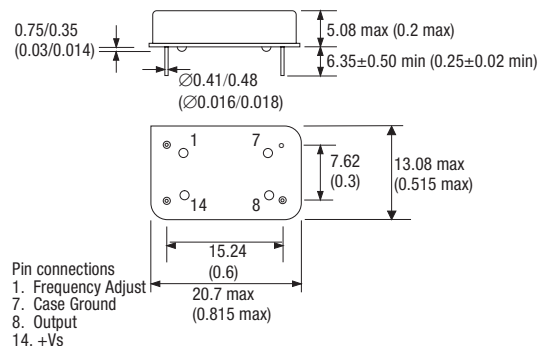
Minimum Order Information Required

- Discrete Part Number

OR

- Frequency + Model Number + Frequency Stability + Operating Temperature Range

Outline in mm (inches)



Available Standard Specifications

Frequency Range	Supply Voltage	Supply Current	Output	Frequency Adjustment	Rise Time (t _r)	Fall Time (t _f)	Duty Cycle	Model Number
1.0kHz to 25.0MHz	3V±0.15	10mA	HCMOS 15pF	Ext. Control Voltage	4ns	4ns	40/60%	CFPT-5103
1.0kHz to 25.0MHz	3V±0.15	10mA	HCMOS 15pF	Ext. 100kΩ Potentiometer	4ns	4ns	40/60%	CFPT-5104
1.0kHz to 25.0MHz	3.3V±0.17	10mA	HCMOS 15pF	Ext. Control Voltage	4ns	4ns	40/60%	CFPT-5133
1.0kHz to 25.0MHz	3.3V±0.17	10mA	HCMOS 15pF	Ext. 100kΩ Potentiometer	4ns	4ns	40/60%	CFPT-5144
1.0kHz to 40.0MHz	5V±0.25	15mA	HCMOS 15pF	Ext. Control Voltage	4ns	4ns	40/60%	CFPT-5105
1.0kHz to 40.0MHz	5V±0.25	15mA	HCMOS 15pF	Ext. 100kΩ Potentiometer	4ns	4ns	40/60%	CFPT-5106

Frequency Stability Available Over Operating Temperature Ranges

Operating Temperature Ranges	Frequency Stabilities Vs Operating Temperature Range			
	±0.5ppm	±0.8ppm	±1.0ppm	±1.5ppm
-20 to 70°C	Code ES	Code BS	Code FS	Code CS
-30 to 75°C	—	Code BU	Code FU	Code CU
-30 to 85°C	—	—	Code FW	Code CW
-40 to 85°C	—	—	Code FX	Code CX
-55 to 95°C	—	—	—	Code CA

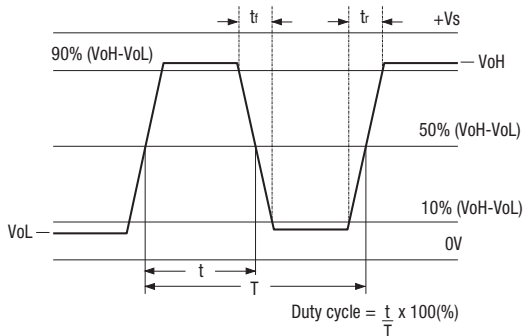
Ordering Example 23.0MHz CFPT-5105 ES

Frequency _____

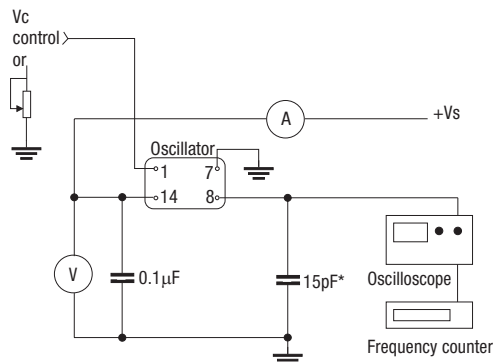
Model No _____

Frequency Stability Vs Operating Temperature Code _____

Output Waveform - HCMOS



Test Circuit - HCMOS



*Inclusive of jigging & equipment capacitance