CFPT-5203, -5204, -5205, -5206, -5233, -5244

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Recommended For New Designs

Delivery Options

- Please contact our sales office for current leadtimes

Description

- The CFPT-5200 series of temperature compensated crystal oscillators provide for ultra high stabilities down to ±1.0ppm 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 52.0MHz.

Waveform

- Square HCMOS

Package Outline

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

Standard Frequencies

- 32.0kHz, 10.0MHz, 12.2880MHz, 13.0MHz, 16.0MHz, 16.93440MHz, 20.0MHz, 38.785316MHz, 38.880MHz, 48.0MHz

Ageing

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

Frequency Stability

- Temperature: see table
- Supply Voltage Variation ±5% ≤ 25MHz ≤ ±0.1ppm
  >25MHz ≤ ±0.2ppm
- Load Coefficient 15pF ±5pF ≤ ±0.1ppm

Frequency Adjustment

- ≥ ±5ppm External Control Voltage 0.25V to 2.5V applied to pin 1 (CFPT-5203, -5233, -5205)
- ≥ ±5ppm External 100kΩ Potentiometer connected as a variable resistor from pin 1 to ground (CFPT-5204, -5244, -5206)

Storage Temperature Range

- –55 to +95°C

Environmental Specification

- Bump: 1000 ±10 bumps at 400m/s^2 in each of the three mutually perpendicular planes
- Shock: 981m/s^2 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/s^2 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, engraving or label, resistant to all common solvents

Marking Includes

- Model number
- Frequency Stability Code /Temperature Range Code
- Frequency
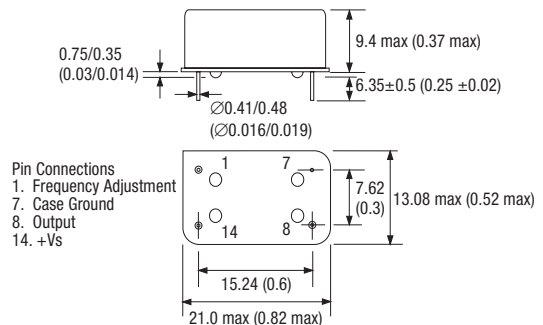- Date code (Year/Week)

Minimum Order Information Required

- Discrete Part Number

OR

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

Outline in mm (inches)

Pin Connections
1. Frequency Adjustment
7. Case Ground
8. Output
14. +Vs

Electrical Specification - limiting values when measured in test circuit

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-5203
1.0kHz to 25.0MHz	3V±0.15	10mA	HCMOS 15pF	Ext. 100kΩ Potentiometer	4ns	4ns	40/60%	CFPT-5204
1.0kHz to 25.0MHz	3.3V±0.17	10mA	HCMOS 15pF	Ext. Control Voltage	4ns	4ns	40/60%	CFPT-5233
1.0kHz to 25.0MHz	3.3V±0.17	10mA	HCMOS 15pF	Ext. 100kΩ Potentiometer	4ns	4ns	40/60%	CFPT-5244
1.0kHz to 52.0MHz	5V±0.25	20mA	HCMOS 15pF	Ext. Control Voltage	4ns	4ns	40/60%	CFPT-5205
1.0kHz to 52.0MHz	5V±0.25	20mA	HCMOS 15pF	Ext. 100kΩ Potentiometer	4ns	4ns	40/60%	CFPT-5206

Frequency Stability Available Over Operating Temperature Range

| Operating Temperature Ranges	Frequency Stabilities Vs Operating Temperature Range				
	±0.3ppm	±0.5ppm	±0.8ppm	±1.0ppm	±1.5ppm
−20 to 70°C	Code AS	Code ES	Code BS	Code FS	Code CS
−30 to 75°C	—	Code EU	Code BU	Code FU	Code CU
−30 to 85°C	—	Code EW	Code BW	Code FW	Code CW
−40 to 85°C	—	Code EX	Code BX	Code FX	Code CX
−55 to 95°C	—	—	—	Code FA	Code CA

Ordering Example	23.0MHz CFPT-5205 ES
Frequency ——————————————————————————┘	
Model No ——————————————————————————————┘	
Frequency Stability Vs Operating Temperature Code ————————————┘	
Please note: Minimum Order Quantity = 100 pieces	

Output Waveform - HCMOS

Duty cycle = $\frac{t}{T}$ x 100(%)
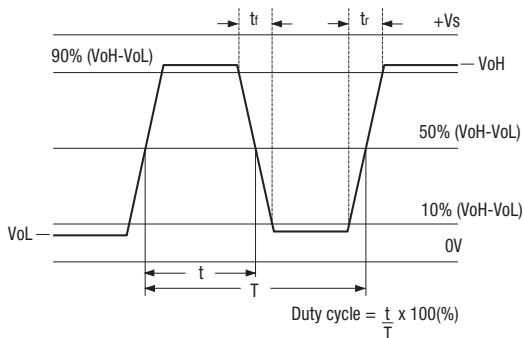
Test Circuit - HCMOS
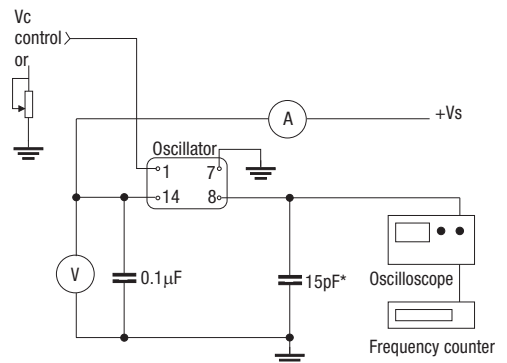
*Inclusive of jigging & equipment capacitance