



## CFPS-10y

CFPS-10y

**32.768kHz output crystal oscillator in a ceramic package, hermetically sealed with a seam sealed metal lid**

**Suitable for real time clock applications**

<b>Model Name</b>	<b>Description</b>
<b>CFPS-102</b>	<b>A 1.8V version</b>
<b>CFPS-103</b>	<b>A 2.5V version</b>
<b>CFPS-104</b>	<b>A 3.3V version</b>

ISSUE 6; December 2023



### Description

- 32.768kHz output crystal oscillator in a ceramic package, hermetically sealed with a seam sealed metal lid. Suitable for real time clock applications.

### Frequency Parameters

- Frequency: 32.768kHz
- Frequency Stability:  $\pm 20.00\text{ppm}$  to  $\pm 50.00\text{ppm}$
- Ageing:  $\pm 3\text{ppm}$  max per year

### Electrical Parameters

- Supply Voltage:  $1.8\text{V} \pm 5\%$

### Operating Temperature Ranges

- 20 to 70°C
- 10 to 70°C
- 40 to 85°C

### Output Details

- Output Compatibility: CMOS
- Drive Capability: 15pF max

### Output Control

- Standby Operation:
  - Logic '1' ( $>70\%$  VS) to pad 1 enables oscillator output
  - Logic '0' ( $<30\%$  VS) to pad 1 disables oscillator output; when disabled the oscillator output goes to the high impedance state
  - No connection to pad 1 enables oscillator output.
- Start-up Time: 35ms max  
2ms typ to 90% of final amplitude (under ideal conditions @ 25°C)
- Standby Current: 20 $\mu\text{A}$  max, 1.7 $\mu\text{A}$  typ @ 25°C

### Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Shock: MIL-STD-883F, Method 2002.4: 1500G, 0.5ms, 3 times in each of 3 mutually perpendicular planes
- Vibration: MIL-STD-883F, Method 2007.3: 20G (20Hz-2000Hz), 1.52mm amplitude, 20mins in 3 mutually perpendicular planes (total 4hrs)

### Ordering Information

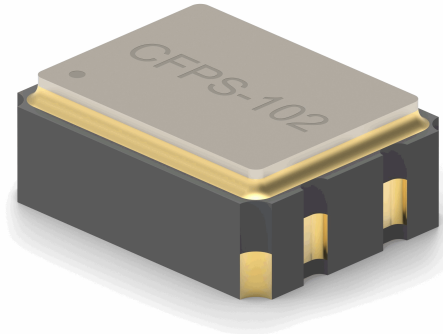
- Frequency\*
- Model\*
- Output
- Frequency Stability\*
- Operating Temperature Range\*
- Supply Voltage
- (\*minimum required)
- Example  
32.768kHz CFPS-102  
CMOS  $\pm 50\text{ppm}$  -10 to 70C 1.8V

### Compliance

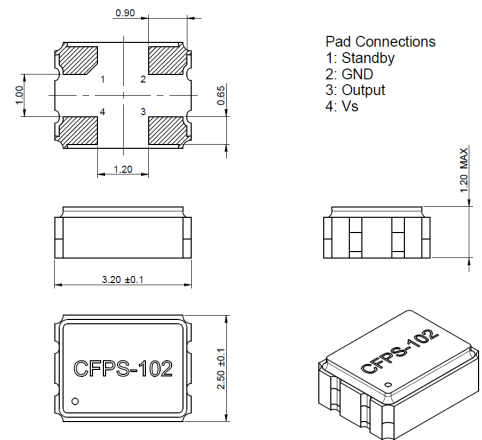
- RoHS Status (2015/863/EU): Compliant
- REACH Status: Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

### Packaging Details

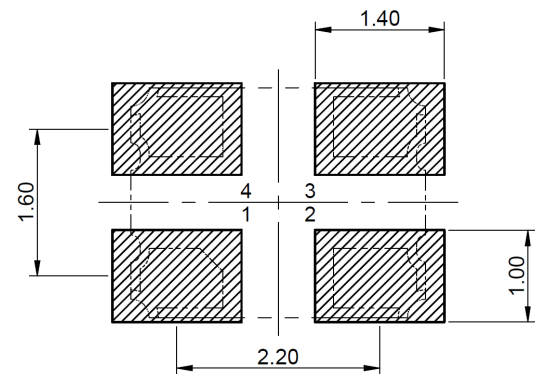
- Tape & reel in accordance with EIA-481  
Quantities below the standard reel size to be supplied on cut tape.  
Standard Reel Quantity: 3,000 Pieces



### Outline (mm)

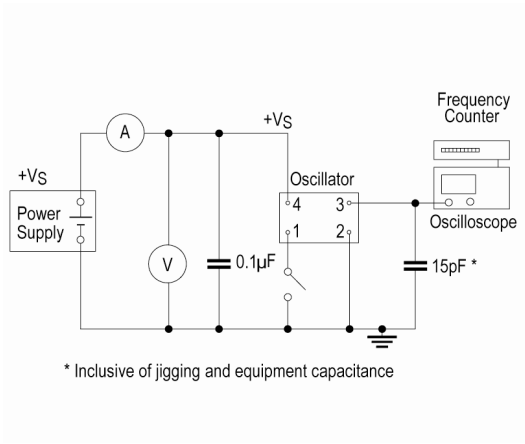


### Recommended Solder Pad Layout

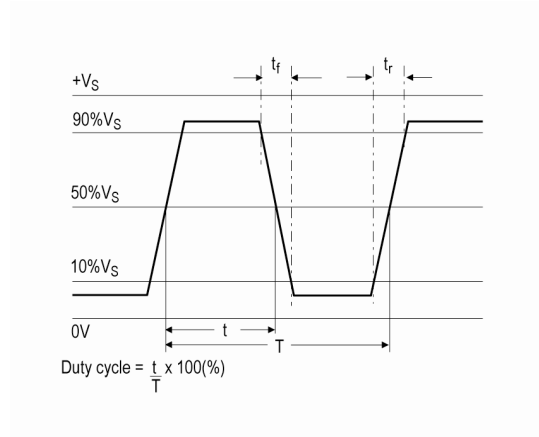


ISSUE 6; December 2023

### Test Circuit



### Wave Form



### Electrical Specification - maximum limiting values 1.80V ±5%

Frequency Min	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
	°C	ppm	mA	ns	%
32.768kHz	-40 to 85	±25.00	1.5	50	40/60%
	-20 to 70	±20.00	1.5	50	40/60%
	-10 to 70	±20.00	1.5	50	40/60%

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ISSUE 5; January 2022



### Description

- 32.768kHz output crystal oscillator in a ceramic package, hermetically sealed with a seam sealed metal lid
- Suitable for real time clock applications

### Frequency Parameters

- Frequency: 32.768kHz
- Frequency Stability:  $\pm 20.00\text{ppm}$  to  $\pm 50.00\text{ppm}$
- Ageing:  $\pm 3\text{ppm}$  max per year

### Electrical Parameters

- Supply Voltage:  $2.5\text{V} \pm 5\%$

### Operating Temperature Ranges

- 20 to 70°C
- 10 to 70°C
- 40 to 85°C

### Output Details

- Output Compatibility: CMOS
- Drive Capability: 15pF max

### Output Control

- Standby Operation:
  - Logic '1' (>70% VS) to pad 1 enables oscillator output
  - Logic '0' (<30% VS) to pad 1 disables oscillator output; when disabled the oscillator output goes to the high impedance state
  - No connection to pad 1 enables oscillator output
- Start-up Time: 35ms max  
2ms typ to 90% of final amplitude (under ideal conditions @ 25°C)
- Standby Current: 20µA max, 1.7µA typ @ 25°C

### Environmental Parameters

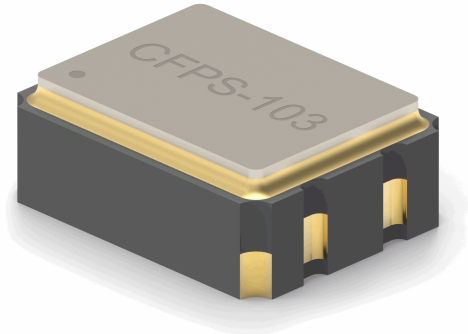
- Storage Temperature Range: -55 to 125°C
- Shock: MIL-STD-883F, Method 2002.4: 1500G, 0.5ms, 3 times in each of 3 mutually perpendicular planes
- Vibration: MIL-STD-883F, Method 2007.3: 20G (20Hz-2000Hz), 1.52mm amplitude, 20mins in 3 mutually perpendicular planes (total 4hrs)

### Ordering Information

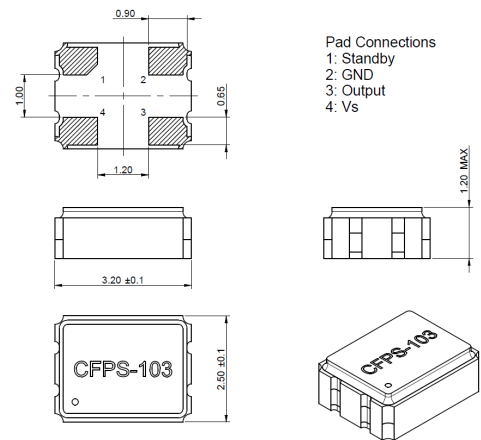
- Frequency\*
- Model\*
- Output
- Frequency Stability\*
- Operating Temperature Range\*
- Supply Voltage
- (\*minimum required)
- Example  
32.768kHz CFPS-103  
CMOS  $\pm 50\text{ppm}$  -10 to 70C 2.5V

### Compliance

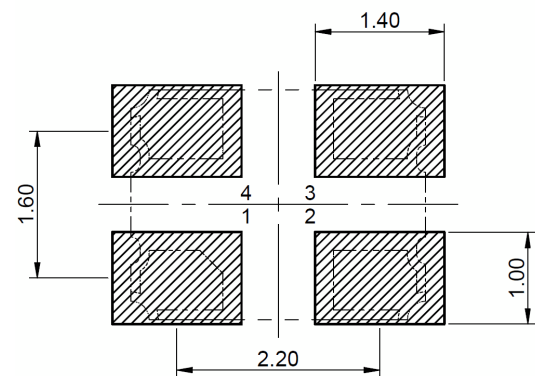
- RoHS Status (2015/863/EU): Compliant
- REACH Status: Compliant
- MSL Rating (JDEC-STD-033): Not Applicable



### Outline (mm)



### Recommended Solder Pad Layout

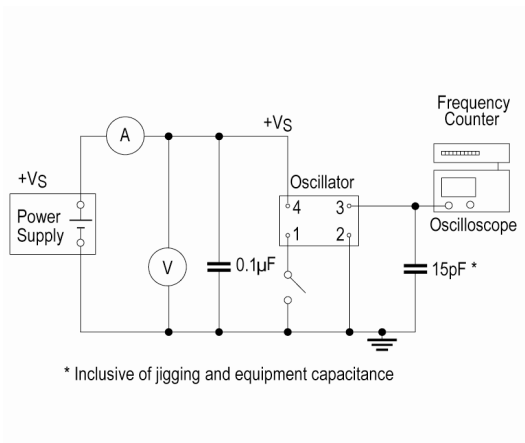


ISSUE 5; January 2022

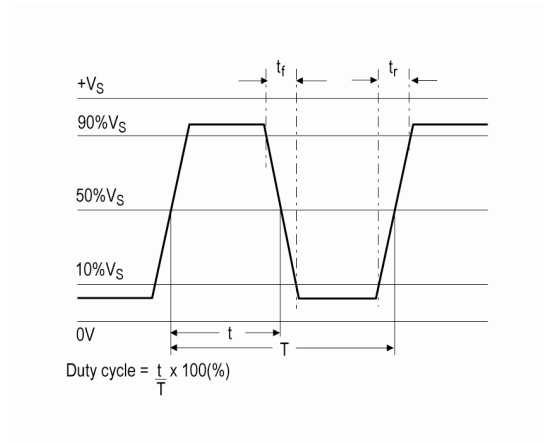
### Packaging Details

- Pack Style: Reel      Tape & reel in accordance with EIA-481  
Pack Size: 1,000
- Pack Style: RL3K      Tape & reel in accordance with EIA-481  
Pack Size: 3,000
- Pack Style: Cutt      In tape, cut from a reel  
Pack Size: 100

### Test Circuit



### Wave Form



### Electrical Specification - maximum limiting values 2.50V ±5%

Frequency Min	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
	°C	ppm	mA	ns	%
32.768kHz	-40 to 85	±25.00	2.5	50	40/60%
	-20 to 70	±20.00	2.5	50	40/60%
	-10 to 70	±20.00	2.5	50	40/60%

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ISSUE 5; December 2023



### Description

- 32.768kHz output crystal oscillator in a ceramic package, hermetically sealed with a seam sealed metal lid
- Suitable for real time clock applications

### Frequency Parameters

- Frequency: 32.768kHz
- Frequency Stability:  $\pm 20.00\text{ppm}$  to  $\pm 50.00\text{ppm}$
- Ageing:  $\pm 3\text{ppm}$  max per year

### Electrical Parameters

- Supply Voltage:  $3.3\text{V} \pm 5\%$

### Operating Temperature Ranges

- 20 to 70°C
- 10 to 70°C
- 40 to 85°C

### Output Details

- Output Compatibility: CMOS
- Drive Capability: 15pF max

### Output Control

- Standby Operation:
  - Logic '1' ( $>70\%$  VS) to pad 1 enables oscillator output
  - Logic '0' ( $<30\%$  VS) to pad 1 disables oscillator output; when disabled the oscillator output goes to the high impedance state
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2ms typ to 90% of final amplitude (under ideal conditions @ 25°C)
- Standby Current: 20 $\mu\text{A}$  max, 1.7 $\mu\text{A}$  typ @ 25°C

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### Ordering Information

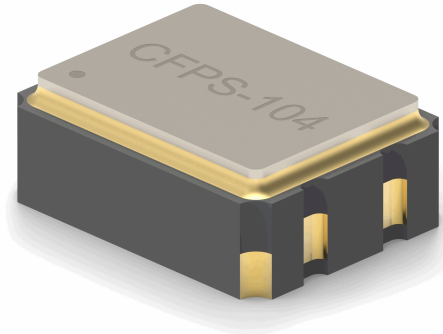
- Frequency\*
- Model\*
- Output
- Frequency Stability\*
- Operating Temperature Range\*
- Supply Voltage
- (\*minimum required)
- Example  
32.768kHz CFPS-104  
CMOS  $\pm 50\text{ppm}$  -10 to 70C 3.3V

### Compliance

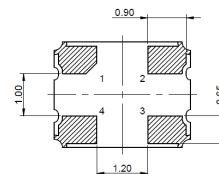
- RoHS Status (2015/863/EU): Compliant
- REACH Status: Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

### Packaging Details

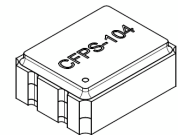
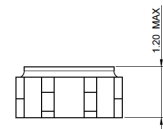
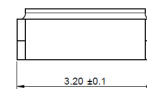
- Tape & reel in accordance with EIA-481  
Quantities below the standard reel size to be supplied on cut tape.  
Standard Reel Quantity: 3,000 Pieces



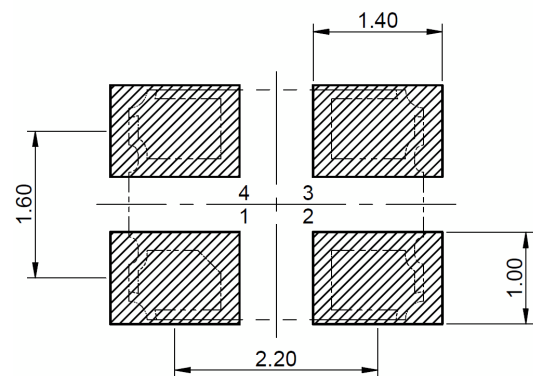
### Outline (mm)



Pad Connections  
1: Standby  
2: GND  
3: Output  
4: Vs

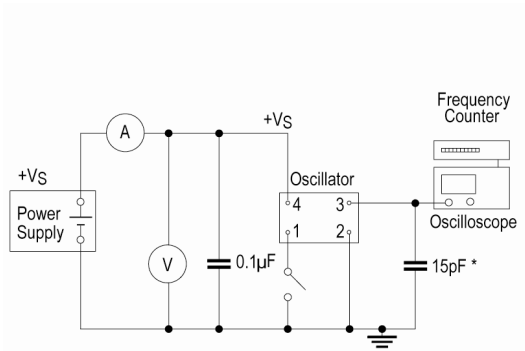


### Recommended Solder Pad Layout



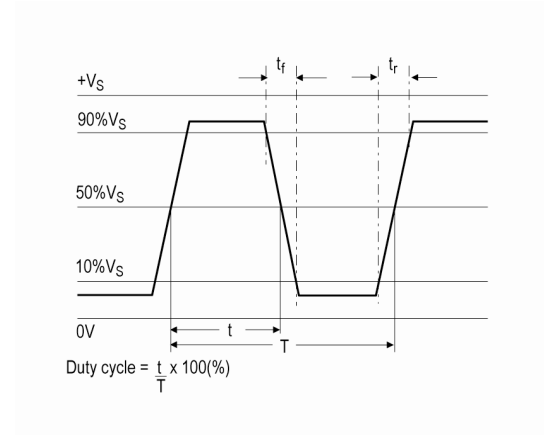
ISSUE 5; December 2023

### Test Circuit



\* Inclusive of jigging and equipment capacitance

### Wave Form



### Electrical Specification - maximum limiting values 3.30V ±5%

Frequency Min	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
	°C	ppm	mA	ns	%
32.768kHz	-40 to 85	±25.00	3.5	50	40/60%
	-20 to 70	±20.00	3.5	50	40/60%
	-10 to 70	±20.00	3.5	50	40/60%

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