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

Model Name	Description
CFPS-102	**A 1.8V version**
CFPS-103	**A 2.5V version**
CFPS-104	**A 3.3V version**

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Crystal Clock Oscillator Specification
CFPS-102

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	±20.00ppm to ±50.00ppm
Ageing	±3ppm max per year

Electrical Parameters

Supply Voltage	1.8V ±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)

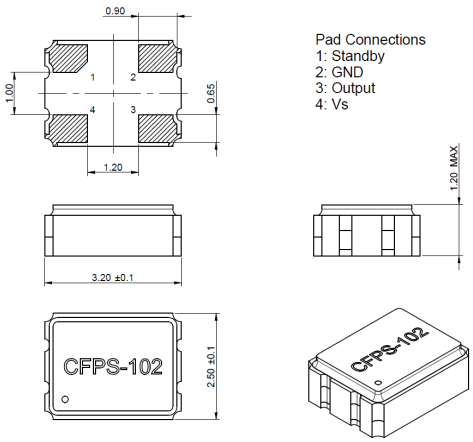
Ordering Information

- Frequency*
  Model*
  Output
  Frequency Stability*
  Operating Temperature Range*
  Supply Voltage
  (*minimum required)
- Example
  32.768kHz CFPS-102
  CMOS ±50ppm –10 to 70C 1.8V

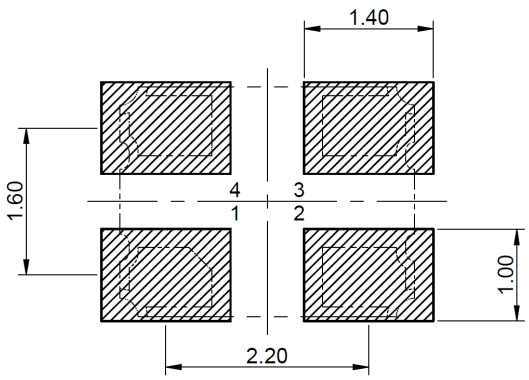
Compliance

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

Outline (mm)



Recommended Solder Pad Layout



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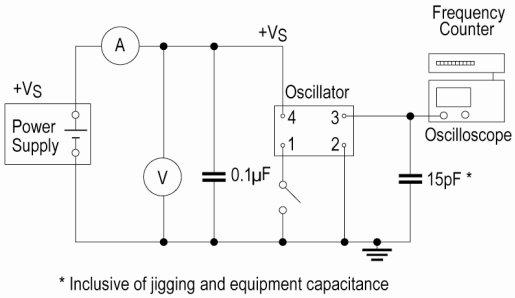
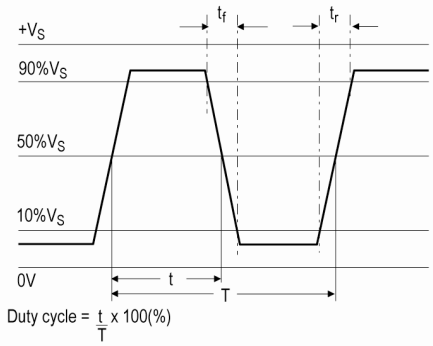
Packaging Details

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

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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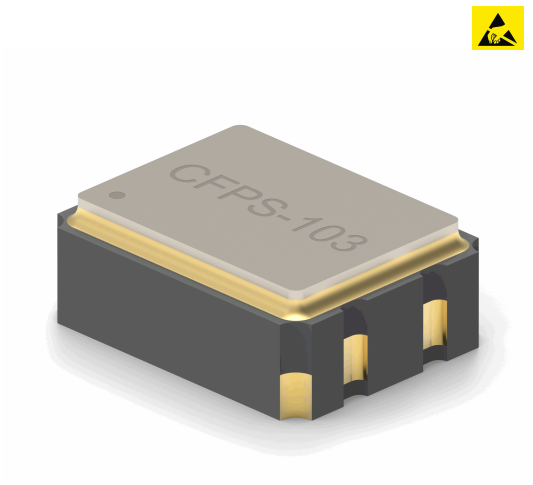
Crystal Clock Oscillator Specification
CFPS-103

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	±20.00ppm to ±50.00ppm
Ageing	±3ppm max per year

Electrical Parameters

Supply Voltage	2.5V ±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)

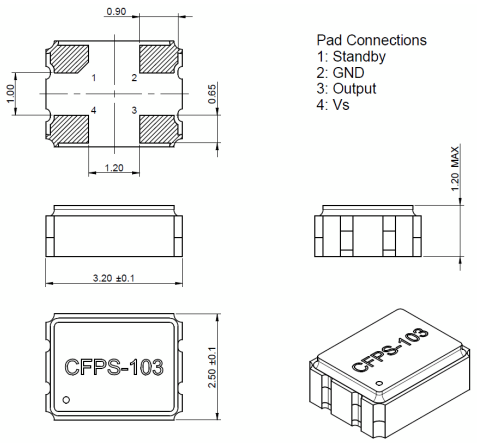
Ordering Information

- Frequency*
  Model*
  Output
  Frequency Stability*
  Operating Temperature Range*
  Supply Voltage
  (*minimum required)
- Example
  32.768kHz CFPS-103
  CMOS ±50ppm –10 to 70C 2.5V

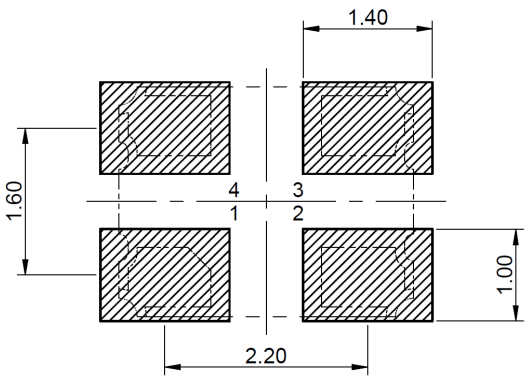
Compliance

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

Outline (mm)



Recommended Solder Pad Layout



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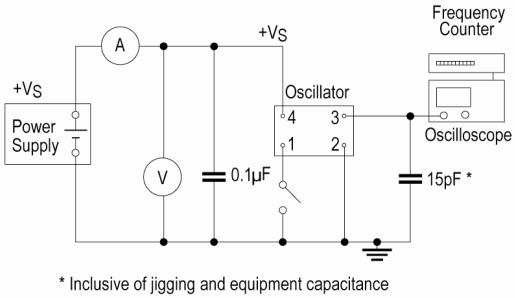
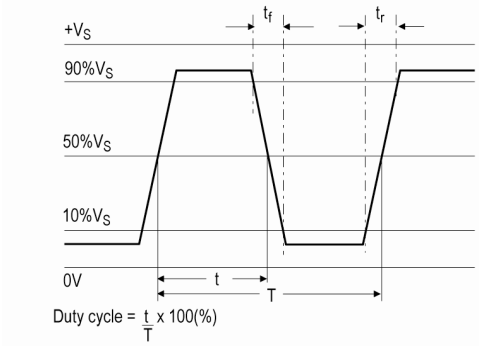
Packaging Details

- Pack Style: Reel — Tape & reel in accordance with EIA-481-D
  Pack Size: 1,000
- Pack Style: RL3K — Tape & reel in accordance with EIA-481-D
  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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Crystal Clock Oscillator Specification
CFPS-104

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	±20.00ppm to ±50.00ppm
Ageing	±3ppm max per year

Electrical Parameters

Supply Voltage	3.3V ±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)

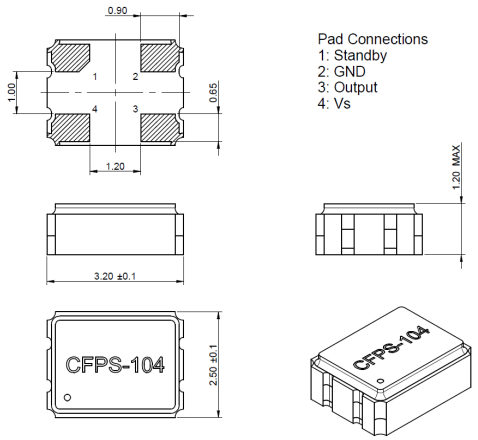
Ordering Information

- Frequency*
  Model*
  Output
  Frequency Stability*
  Operating Temperature Range*
  Supply Voltage
  (*minimum required)
- Example
  32.768kHz CFPS-104
  CMOS ±50ppm –10 to 70C 3.3V

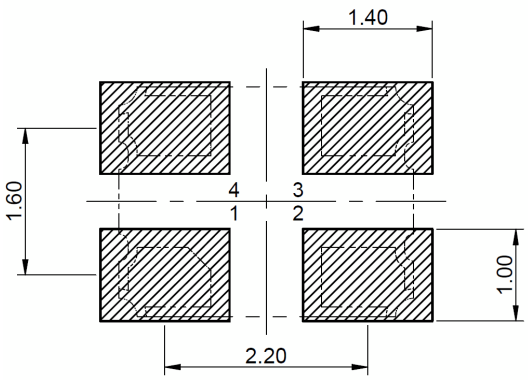
Compliance

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

Outline (mm)



Recommended Solder Pad Layout

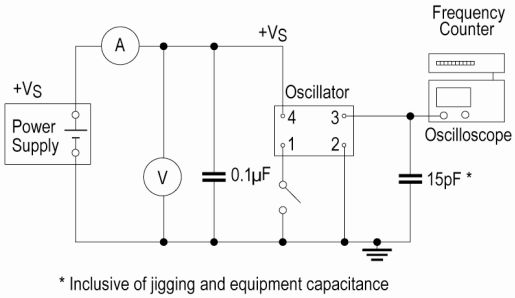


ISSUE 5; January 2022

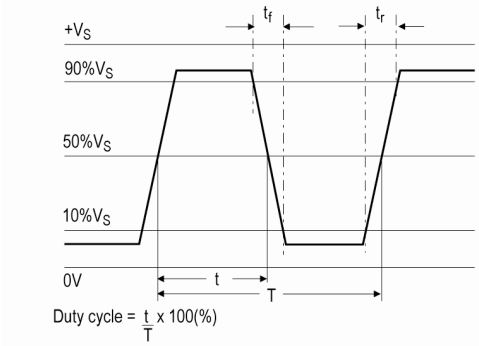
Packaging Details

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

Test Circuit



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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