



## CFPS-6x

CFPS-6x

**Low supply current crystal oscillators**

**Ceramic package with a seam sealed metal lid, hermetically sealed**

**Please see our CFPS-9 package for standard 5 x 3.2 oscillators**

Model Name	Description
CFPS-67	A 2.5V version
CFPS-68	A 2.8V version
CFPS-69	A 3.3V version

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### Description

- Low supply current crystal oscillators  
Ceramic package with a seam sealed metal lid, hermetically sealed  
Please see our CFPS-37 package for standard 5 x 3.2 oscillators

### Frequency Parameters

- Frequency: 1.80MHz to 50.0MHz
- Frequency Stability:  $\pm 25.00\text{ppm}$  to  $\pm 100.00\text{ppm}$
- Ageing:  $\pm 3\text{ppm}$  max per year

### Electrical Parameters

- Supply Voltage: 2.5V  $\pm 5\%$
- Standby Current: 1 $\mu\text{A}$  max

### Operating Temperature Ranges

- 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 the oscillator output goes to the high impedance state  
No connection to pad 1 enables oscillator output

### Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Shock: MIL-STD-202F, Method 213B: 1000G, 0.5ms, 1/2 sine wave
- Vibration: MIL-STD-202F, Method 204D, Test Condition D: 20G (10Hz-2000Hz), 4hrs in 3 mutually perpendicular planes (total 12hrs)

### Ordering Information

- Frequency\*
- Model\*
- Output
- Frequency Stability\*
- Operating Temperature Range\*
- Supply Voltage  
(\*minimum required)
- Example  
20.0MHz CFPS-67  
CMOS  $\pm 50\text{ppm}$  -10 to 70C 2.5V

### Compliance

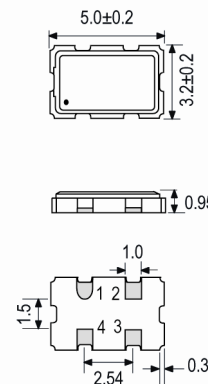
- RoHS Status (2015/863/EU): Compliant
- REACH Status: Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

### Packaging Details

- 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

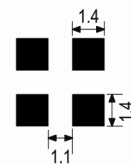


### Outline (mm)

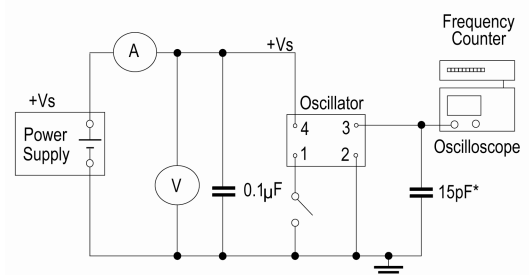


Pad Connections  
1. Standby Operation  
2. GND  
3. Output  
4. +Vs

### Solder Pad Layout



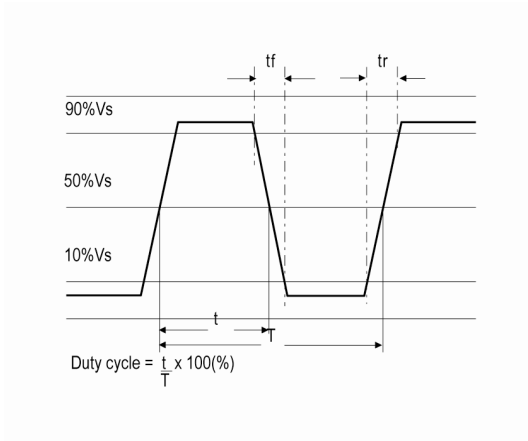
### Test Circuit



\*Inclusive of jiggging and equipment capacitance

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Wave Form



Electrical Specification - maximum limiting values 2.5V ±5%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.8MHz	31.999999MHz	-10 to 70	±25.0	3.5	12	45/55%
		-40 to 85	±50.0	3.5	12	45/55%
32.0MHz	50.0MHz	-10 to 70	±25.0	4.5	12	45/55%
		-40 to 85	±50.0	4.5	12	45/55%

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### Description

- Low supply current crystal oscillators  
Ceramic package with a seam sealed metal lid, hermetically sealed

### Frequency Parameters

- Frequency: 1.80MHz to 50.0MHz
- Frequency Stability:  $\pm 25.00\text{ppm}$  to  $\pm 100.00\text{ppm}$
- Ageing:  $\pm 3\text{ppm}$  max per year

### Electrical Parameters

- Supply Voltage:  $2.8\text{V} \pm 5\%$
- Standby Current:  $1\mu\text{A}$  max

### Operating Temperature Ranges

- 10 to  $70^\circ\text{C}$
- 40 to  $85^\circ\text{C}$

### Output Details

- Output Compatibility: CMOS
- Drive Capability:  $15\text{pF}$  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 the oscillator output goes to the high impedance state  
No connection to pad 1 enables oscillator output

### Environmental Parameters

- Storage Temperature Range:  $-55$  to  $125^\circ\text{C}$
- Shock: MIL-STD-202F, Method 213B:  $1000\text{G}$ ,  $0.5\text{ms}$ ,  $1/2$  sine wave
- Vibration: MIL-STD-202F, Method 204D, Test Condition D:  $20\text{G}$  ( $10\text{Hz}$ - $2000\text{Hz}$ ),  $4\text{hrs}$  in 3 mutually perpendicular planes (total  $12\text{hrs}$ )

### Ordering Information

- Frequency\*
- Model\*
- Output
- Frequency Stability\*
- Operating Temperature Range\*
- Supply Voltage  
(\*minimum required)
- Example  
 $20.0\text{MHz}$  CFPS-68  
CMOS  $\pm 50\text{ppm}$   $-10$  to  $70^\circ\text{C}$   $2.8\text{V}$

### Compliance

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

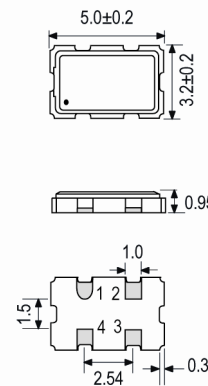
### Packaging Details

- 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

### Wave Form

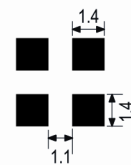


### Outline (mm)

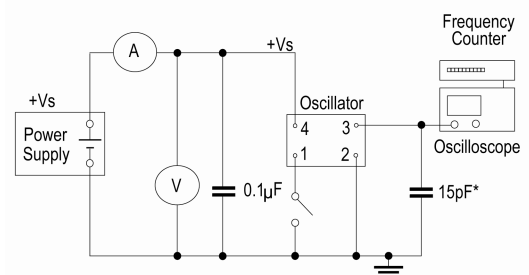


Pad Connections  
 1. Standby Operation  
 2. GND  
 3. Output  
 4. +Vs

### Solder Pad Layout

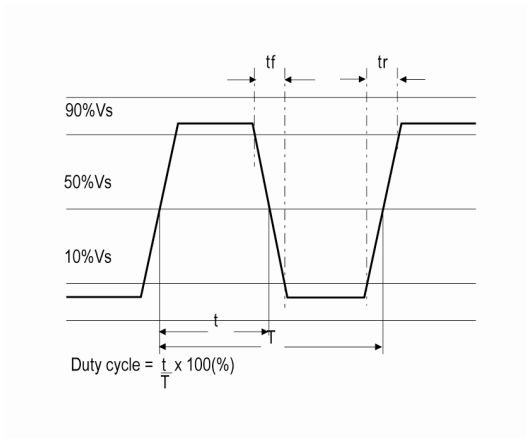


### Test Circuit



\*Inclusive of jiggging and equipment capacitance

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**Electrical Specification - maximum limiting values 2.8V ±5%**

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.8MHz	31.999999MHz	-10 to 70	±25.0	4	12	45/55%
		-40 to 85	±50.0	4	12	45/55%
32.0MHz	50.0MHz	-10 to 70	±25.0	5	12	45/55%
		-40 to 85	±50.0	5	12	45/55%

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### Description

- Low supply current crystal oscillators  
Ceramic package with a seam sealed metal lid, hermetically sealed  
Please see our CFPS-9 package for standard 5 x 3.2 oscillators

### Frequency Parameters

- Frequency 1.80MHz to 50.0MHz
- Frequency Stability  $\pm 25.00\text{ppm}$  to  $\pm 100.00\text{ppm}$
- Ageing  $\pm 3\text{ppm}$  max per year

### Electrical Parameters

- Supply Voltage 3.3V  $\pm 5\%$
- Standby Current: 1 $\mu$ A max

### Operating Temperature Ranges

- 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 the oscillator output goes to the high impedance state  
No connection to pad 1 enables oscillator output

### Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Shock: MIL-STD-202F, Method 213B: 1000G, 0.5ms, 1/2 sine wave
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### Ordering Information

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

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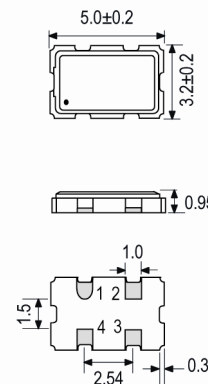
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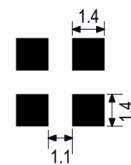


### Outline (mm)

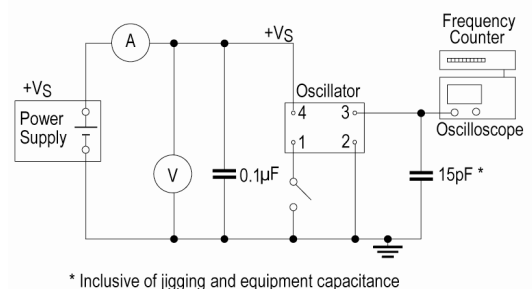


Pad Connections  
 1. Standby Operation  
 2. GND  
 3. Output  
 4. +VS

### Solder Pad Layout



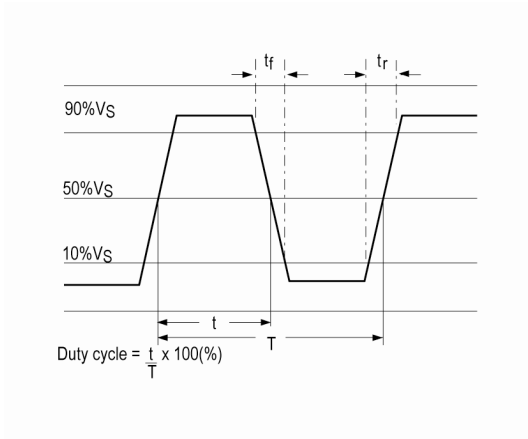
### Test Circuit



\* Inclusive of jigging and equipment capacitance

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Wave Form



Electrical Specification - maximum limiting values 3.3V  $\pm$ 5%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		$^{\circ}\text{C}$	ppm	mA	ns	%
1.8MHz	31.999999MHz	-10 to 70	$\pm 25.0$	4.5	12	45/55%
		-40 to 85	$\pm 50.0$	4.5	12	45/55%
32.0MHz	50.0MHz	-10 to 70	$\pm 25.0$	6	12	45/55%
		-40 to 85	$\pm 50.0$	6	12	45/55%

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