

## Description

- Surface mount 3.2 x 2.5mm crystal oscillator in a hermetically sealed ceramic package with a seam sealed metal lid.
- Model CFPS-39
- Model Issue number 8
- Note: please be aware that devices supplied against this model may show slight cosmetic differences depending upon the frequency and specification, however all electrical details remain as per the model specification.

## Frequency Parameters

- Frequency 12.0MHz
- Frequency Stability  $\pm 50.00\text{ppm}$
- Operating Temperature Range  $-40.00$  to  $85.00^\circ\text{C}$
- Ageing  $\pm 5\text{ppm}$  max per year @  $25^\circ\text{C}$

## Electrical Parameters

- Supply Voltage  $3.3\text{V} \pm 10\%$
- Current Draw  $20.000\text{mA}$  max

## Output Details

- Output Compatibility CMOS
- Drive Capability  $15\text{pF}$  max
- Rise and Fall Time  $7.0\text{ns}$  max
- Duty Cycle  $40/60$  max
- Output Low VoL:  $10\%$  Vs max
- Output High VoH:  $90\%$  Vs min
- Start-Up Time:  $10\text{ms}$  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  
Standby Current:  $10\mu\text{A}$  max

## Noise Parameters

- RMS Phase Jitter:  
Frequency range 10MHz to 39.9MHz:  
Phase Jitter (12kHz to 5MHz):  $1\text{ps}$  rms max  
Frequency range 40MHz to 125MHz:  
Phase Jitter (12kHz to 20MHz):  $1\text{ps}$  rms max

## Environmental Parameters

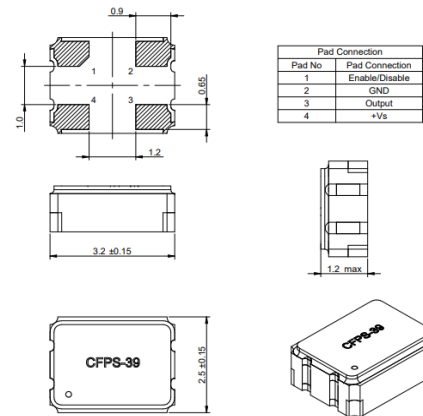
- Storage Temperature Range:  $-55$  to  $125^\circ\text{C}$
- Shock: Half Sine shock pulse with peak acceleration  $500\text{g}$ ; Pulse duration:  $0.3\text{ms}$
- Vibration: MIL-STD-202 Method 204.  $5\text{g}$  for 20 minutes, 12 cycles in each of the 3 orientations, 10 - 2000 Hz. As per Table 11 of AEC-Q200.

## Manufacturing Details

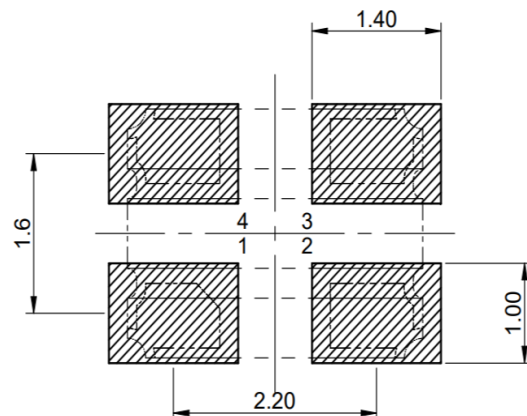
- RoHS Terminations NiAu
- RoHS Reflow Temp  $260^\circ\text{C}$  max for 10s max



## Outline (mm)



## Recommended Solder Pad Layout



## CONTACT INFORMATION:

Würth Elektronik eiSos GmbH & Co. KG  
Max-Eyth-Str. 1, 74638 Waldenburg, Germany  
Tel: +49(0) 7942 945-0

Email: [eiSos@we-online.de](mailto:eiSos@we-online.de)  
Web: [www.we-online.com](http://www.we-online.com)

### 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 Quantity: 3,000 Pieces

### USEFUL LINKS

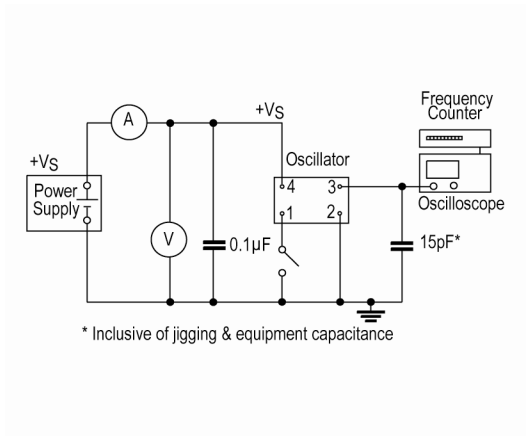
**Toolbox:**

[www.we-online.com/toolbox](http://www.we-online.com/toolbox)

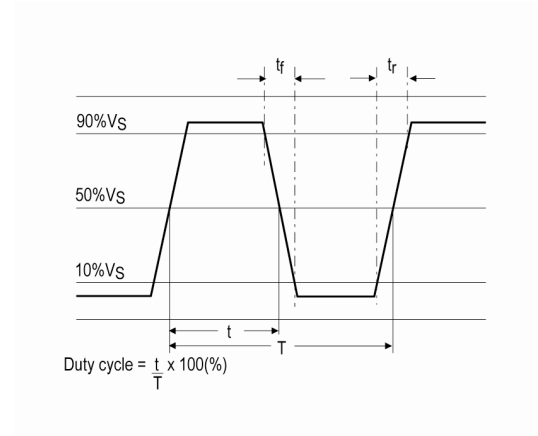
**Product Catalog:**

[www.we-online.com/products](http://www.we-online.com/products)

### Test Circuit



### Waveform



### CONTACT INFORMATION:

Würth Elektronik eiSos GmbH & Co. KG  
Max-Eyth-Str. 1, 74638 Waldenburg, Germany  
Tel: +49(0) 7942 945-0

Email: [eiSos@we-online.de](mailto:eiSos@we-online.de)  
Web: [www.we-online.com](http://www.we-online.com)