



## CFPS-39x AUTO

Ceramic package with a hermetically seam sealed metal lid suitable for automotive applications.  
Qualified to AEC-Q200 and with TS16949 release.

Model Name	Description
CFPS-39 AUTO	A 3.3V Version
CFPS-40 AUTO	A 2.5V Version
CFPS-41 AUTO	A 1.8V Version

ISSUE 2; October 2018

### Description

- Ceramic package with a hermetically seam sealed metal lid suitable for automotive applications. Qualified to AEC-Q200 and with TS16949 release.

### Frequency Parameters

- Frequency 2.0MHz to 50.0MHz
- Frequency Stability  $\pm 25.00\text{ppm}$  to  $\pm 100.00\text{ppm}$
- Ageing  $\pm 5\text{ppm}$  max per year @ 25°C

### Electrical Parameters

- Supply Voltage 3.3V  $\pm 10\%$

### Operating Temperature Ranges

- -40 to 85°C
- -40 to 125°C

### Output Details

- Output Compatibility CMOS
- Drive Capability 15pF

### Output Control

- Enable/Disable Operation:  
Logic '1' (>70% Vs) to pad 1 enables oscillator output.  
Logic '0' (<30% Vs) to pad 1 disables oscillator output; the oscillator output goes to the high impedance state.  
No connection to pad 1 enables oscillator output.
- Standby Current:  
-40 to 85°C: 10µA max  
-40 to 125°C: 20µA max

### Environmental Parameters

- Storage Temperature Range: -55 to 150°C
- Qualified to AEC-Q200

### Manufacturing Details

- Maximum Process Temperature: 260°C (10secs max)

### Ordering Information

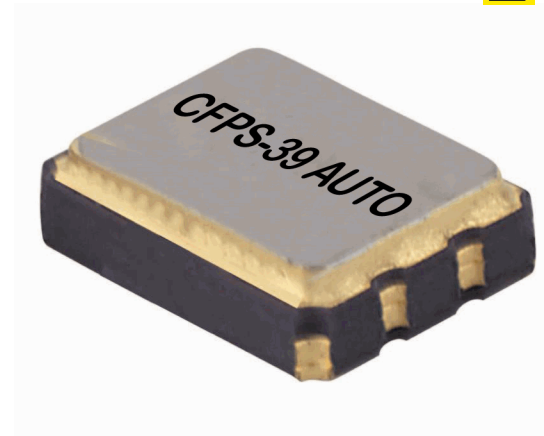
- Frequency\*  
Model\*  
Output  
Frequency Stability\*  
Operating Temperature Range\*  
Supply Voltage  
(\*minimum required)
- Example  
20.0MHz CFPS-39 AUTO  
CMOS  $\pm 100\text{ppm}$  -40 to 125C 3.3V

### Compliance

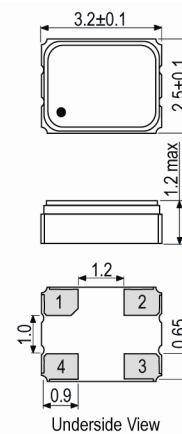
- RoHS Status (2011/65/EU) Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

### 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



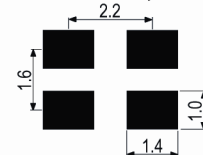
### Outline (mm)



### Pad Connections

1. Enable/Disable
2. GND
3. Output
4. +Vs

### Solder Pad Layout





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Electrical Specification - maximum limiting values 3.3V  $\pm$ 10%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
2.0MHz	9.999999MHz	-40 to 85 -40 to 125	$\pm$ 25.0 $\pm$ 50.0	7 7	5 5	40/60% 40/60%
10.0MHz	19.999999MHz	-40 to 85 -40 to 125	$\pm$ 25.0 $\pm$ 50.0	7 7	5 5	40/60% 40/60%
20.0MHz	31.999999MHz	-40 to 85 -40 to 125	$\pm$ 25.0 $\pm$ 50.0	12 12	5 5	40/60% 40/60%
32.0MHz	50.0MHz	-40 to 85 -40 to 125	$\pm$ 25.0 $\pm$ 50.0	20 20	5 5	40/60% 40/60%

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### Frequency Parameters

- Frequency 2.0MHz to 50.0MHz
- Frequency Stability  $\pm 25.00\text{ppm}$  to  $\pm 100.00\text{ppm}$
- Ageing  $\pm 5\text{ppm}$  max per year @ 25°C

### Electrical Parameters

- Supply Voltage 2.5V  $\pm 5\%$

### Operating Temperature Ranges

- -40 to 85°C
- -40 to 125°C

### Output Details

- Output Compatibility CMOS
- Drive Capability 15pF

### Output Control

- Enable/Disable Operation:  
Logic '1' (>70% Vs) to pad 1 enables oscillator output.  
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No connection to pad 1 enables oscillator output.
- Standby Current:  
-40 to 85°C: 10 $\mu$ A max  
-40 to 125°C: 20 $\mu$ A max

### Environmental Parameters

- Storage Temperature Range: -55 to 150°C
- Qualified to AEC-Q200

### Manufacturing Details

- Maximum Process Temperature: 260°C (10secs max)

### Ordering Information

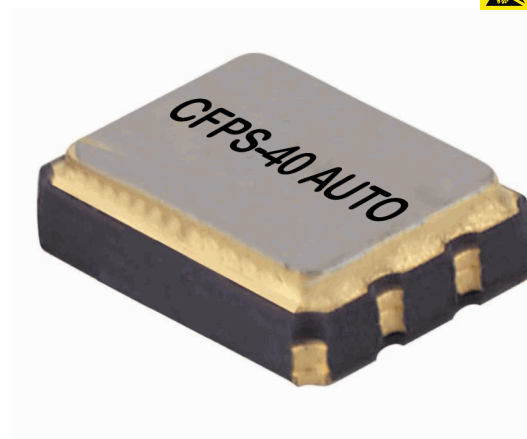
- Frequency\*
- Model\*
- Output
- Frequency Stability\*
- Operating Temperature Range\*
- Supply Voltage (\*minimum required)
- Example  
20.0MHz CFPS-40 AUTO  
CMOS  $\pm 100\text{ppm}$  -40 to 125C 2.5V

### Compliance

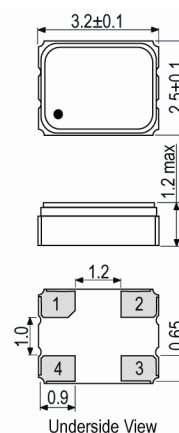
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- REACH Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

### Packaging Details

- Pack Style: Reel Tape & reel in accordance with EIA-481-D  
Pack Size: 1,000



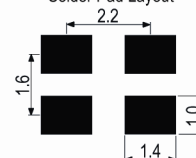
### Outline (mm)



### Pad Connections

1. Enable/Disable
2. GND
3. Output
4. +Vs

### Solder Pad Layout





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Electrical Specification - maximum limiting values 2.5V  $\pm$ 5%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
2.0MHz	9.999999MHz	-40 to 85	$\pm$ 25.0	6	5	40/60%
		-40 to 125	$\pm$ 50.0	6	5	40/60%
10.0MHz	19.999999MHz	-40 to 85	$\pm$ 25.0	8	5	40/60%
		-40 to 125	$\pm$ 50.0	8	5	40/60%
20.0MHz	31.999999MHz	-40 to 85	$\pm$ 25.0	8	5	40/60%
		-40 to 125	$\pm$ 50.0	8	5	40/60%
32.0MHz	50.0MHz	-40 to 85	$\pm$ 25.0	20	5	40/60%
		-40 to 125	$\pm$ 50.0	20	5	40/60%

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- Frequency 2.0MHz to 50.0MHz
- Frequency Stability  $\pm 25.00\text{ppm}$  to  $\pm 100.00\text{ppm}$
- Ageing  $\pm 5\text{ppm}$  max per year @ 25°C

### Electrical Parameters

- Supply Voltage 1.8V  $\pm 5\%$

### Operating Temperature Ranges

- -40 to 85°C
- -40 to 125°C

### Output Details

- Output Compatibility CMOS
- Drive Capability 15pF

### Output Control

- Enable/Disable Operation:  
Logic '1' (>70% Vs) to pad 1 enables oscillator output.  
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### Environmental Parameters

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### Manufacturing Details

- Maximum Process Temperature: 260°C (10secs max)

### Ordering Information

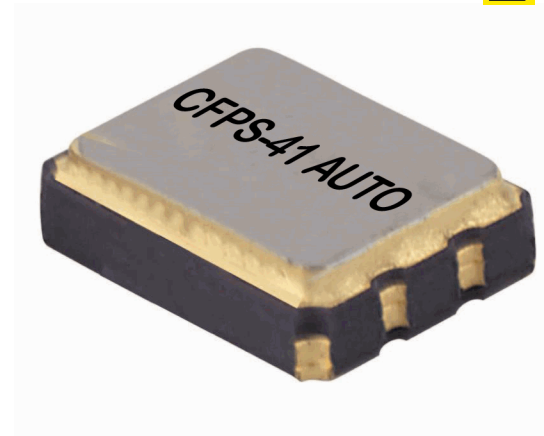
- Frequency\*  
Model\*  
Output  
Frequency Stability\*  
Operating Temperature Range\*  
Supply Voltage  
(\*minimum required)
- Example  
20.0MHz CFPS-41 AUTO  
CMOS  $\pm 100\text{ppm}$  -40 to 125C 1.8V

### Compliance

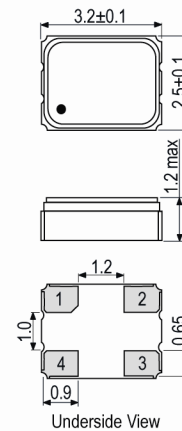
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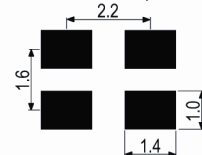
### Outline (mm)



### Pad Connections

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2. GND
3. Output
4. +Vs

### Solder Pad Layout



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Electrical Specification - maximum limiting values 1.8V  $\pm$ 5%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
2.0MHz	9.999999MHz	-40 to 85	$\pm$ 25.0	5	7	40/60%
		-40 to 125	$\pm$ 50.0	5	7	40/60%
10.0MHz	19.999999MHz	-40 to 85	$\pm$ 25.0	6	7	40/60%
		-40 to 125	$\pm$ 50.0	6	7	40/60%
20.0MHz	31.999999MHz	-40 to 85	$\pm$ 25.0	6	6	40/60%
		-40 to 125	$\pm$ 50.0	6	6	40/60%
32.0MHz	50.0MHz	-40 to 85	$\pm$ 25.0	15	6	40/60%
		-40 to 125	$\pm$ 50.0	15	6	40/60%

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