

## Surface-Mounted RF Capacitors



### KEY BENEFITS

- Industry's highest SRF
- Low DCR, high Q
- Small size: 0.040 in. x 0.020 in. x 0.015 in.
- S parameter files

### APPLICATIONS

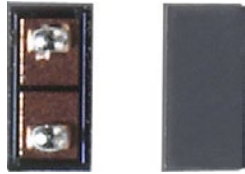
- Lumped element filters
- Impedance matching circuits
- Decoupling and DC blocking
- Other high Q RF circuitry

### RESOURCES

- Datasheet: RFCS - <http://www.vishay.com/doc?61090>
- For technical questions contact [efi@vishay.com](mailto:efi@vishay.com)



## Surface-Mounted RF Capacitors



Product may not be to scale

RFCS series of thin film capacitors on silicon are designed for RF circuits that require exceptional performance at frequencies up to 20 GHz. The unique structure of the RFCS capacitors is based on thin-film electrodes deposited on a highly conductive silicon substrate. This unique structure is characterized by low parasitic inductance allowing the capacitors to maintain their performance to higher frequencies than other technologies.

The RFCS replaces the HPC product line. Additional values and form factors available upon request.

### FEATURES

- Industries highest SRF
- Low DCR, high Q
- Small size: 0.040" x 0.020" x 0.015"
- S parameter files available upon request
- Surface mount
- Case size: 0402

### APPLICATIONS

- Lumped element filters
- Impedance matching circuits
- Decoupling and DC blocking
- Smart cards
- Other high Q RF circuitry

WV (DC) VALUES AND TOLERANCES		
CAPACITOR MODEL	RFCS	UNIT
Case Size	0402	
Capacitance Values	0.2 to 27	pF
Tolerance <sup>(1)</sup>	± 5	%
DC Working Voltage	50	V

#### Note

<sup>(1)</sup> ± 0.1 pF for values < 2 pF

STANDARD ELECTRICAL SPECIFICATIONS		
PARAMETER	VALUE	UNIT
Capacitance Range <sup>(2)</sup>	0.2 to 27	pF
Maximum Working Voltage	Up to 50	V
Operating Temperature	- 55 to + 125	°C
Storage Temperature	- 55 to + 125	°C
Temperature Coefficient	± 100	ppm/°C
ESD Classification <sup>(3)</sup>	Value dependant, up to class 2	

#### Notes

<sup>(2)</sup> Custom values available upon request. See custom design section below

<sup>(3)</sup> According to AEC-Q200 method 002. Contact factory for more details

RF CHARACTERISTICS - typical values				
CAPACITANCE (pF)	Q		SRF (GHz)	MAX. OPERATING VOLTAGE (V)
	AT 1 MHz	100 MHz		
0.2	70 500	3190	> 20	50
0.3	45 700	2050	> 20	50
0.4	33 600	1490	19.4	50
0.5	26 500	1170	18.2	50
0.6	21 800	960	17.2	50

DIMENSIONS in inches (millimeters)			
PART	LENGTH	WIDTH	THICKNESS
	0.04	0.02	0.015 (0.5) ± 0.001
Mounting Pad C ≥ 2.2 pF	14	6	
Mounting Pad C < 2.2 pF	12	4	

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