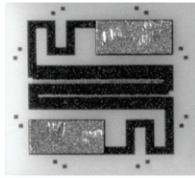


## Thin Film 0202 Size Resistor on Alumina



Product may not be to scale

The SFC series resistor chips offer a combination of low shunt capacitance and small size. The SFCs tantalum nitride resistor material offers excellent resistance to high moisture environments.

The SFCs are manufactured using Vishay Electro-Films (EFI) sophisticated thin film equipment and manufacturing technology.

The SFCs are 100 % electrically tested and visually inspected to MIL-STD-883, method 2032 class H or K.

### FEATURES

- Wire bondable
- Small size: 0.020 inches square
- Case: 0202
- Resistance range: 10  $\Omega$  to 10 k $\Omega$
- Alumina substrate
- Low shunt capacitance: < 0.2 pF
- Resistor material: tantalum nitride
- Moisture resistant
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



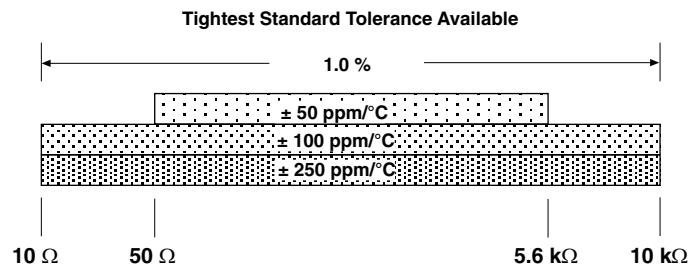
### APPLICATIONS

Vishay EFI SFC chip resistors provide excellent high-frequency response and are ideally suited for prototyping.

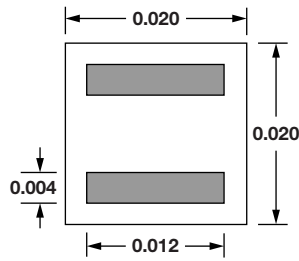
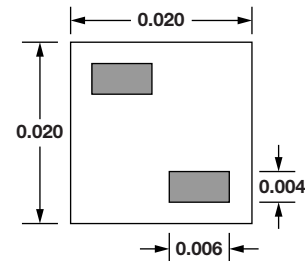
Typical application areas are:

- Amplifiers
- Oscillators
- Attenuators
- Couplers
- Filters

TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES, AND TOLERANCES		
PARAMETER	VALUE	UNIT
Total Resistance Range	10 to 10K	$\Omega$
Standard Tolerances	$\pm 1$	%
TCR	$\pm 50, \pm 100, \pm 250$	ppm/ $^{\circ}$ C



STANDARD ELECTRICAL SPECIFICATIONS		
PARAMETER	VALUE	UNIT
Noise, MIL-STD-202, Method 308	-20 typ.	dB
Moisture Resistance, MIL-STD-202, Method 106	$\pm 0.5$ max. $\Delta R/R$	%
Stability, 1000 h, +125 $^{\circ}$ C, 25 mW	$\pm 0.5$ max. $\Delta R/R$	%
Operating Temperature Range	-55 to +125	$^{\circ}$ C
Thermal Shock, MIL-STD-202, Method 107, Test Condition F	$\pm 0.25$ max. $\Delta R/R$	%
High Temperature Exposure, +150 $^{\circ}$ C, 100 h	$\pm 0.5$ max. $\Delta R/R$	%
Dielectric Voltage Breakdown	400	V
Insulation Resistance	$10^{12}$ min.	$\Omega$
Operating Voltage	100 max.	V
DC Power Rating at +70 $^{\circ}$ C (Derated to zero at +150 $^{\circ}$ C)	0.062 max.	W
5 x Rated Power Short-Time Overload, +25 $^{\circ}$ C, 5 s	$\pm 0.25$ max. $\Delta R/R$	%

**DIMENSIONS** in inches

**TYPICAL RANGE**  
 10 Ω TO 49 Ω

**TYPICAL RANGE**  
 50 Ω TO 10 kΩ

**SCHEMATIC**


MECHANICAL SPECIFICATIONS	
PARAMETER	VALUE
Chip Size	0.020" x 0.020" ± 0.003" (0.5 mm x 0.5 mm ± 0.768 mm)
Chip Thickness	0.010" ± 0.002" (0.25 mm ± 0.05 mm)
Chip Substrate Material	99.6 % alumina, 2 μ" to 4 μ" finish
Resistor Material	Tantalum nitride, self-passivating
Bonding Pad Size	0.004" x 0.006" (0.10 mm x 0.15 mm) minimum
Number of Pads	2
Pad Material	25 kÅ minimum gold standard (Al optional)
Backing	None (Au optional)

GLOBAL PART NUMBER INFORMATION															
Global Part Number: <b>SFC12500KKSGNHWS</b>															
Global Part Number Description: <b>SFC 1.25K 10 % 100 ppm/°C Std Au none H WS</b>															
<b>S</b>	<b>F</b>	<b>C</b>	<b>1</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>K</b>	<b>K</b>	<b>S</b>	<b>G</b>	<b>N</b>	<b>H</b>	<b>W</b>	<b>S</b>
MODEL	RESISTANCE	RESISTANCE MULTIPLIER CODE	TOL. CODE (%)	TCR (ppm/°C)	TRIM STYLE	TERMINATION	BACK METAL	VISUAL CLASS	PACKAGING CODE						
<b>SFC</b> 20 x 20 size Ta2N on alumina	First 4 digits are significant figures of resistance	<b>B</b> = 0.01 <b>A</b> = 0.1 <b>0</b> = 1 <b>1</b> = 10	<b>F</b> = 1.0 <b>G</b> = 2.0 <b>J</b> = 5.0 <b>K</b> = 10.0	<b>C</b> = ± 50 <b>K</b> = ± 100 <b>M</b> = ± 250	<b>E</b> = edge <b>S</b> = std <b>U</b> = usr	<b>G</b> = Au <b>A</b> = Al	<b>G</b> = Au <b>N</b> = none	<b>H</b> = class H <b>K</b> = class K	<b>WS</b> = waffle pack 100 min., 1 mult.						



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