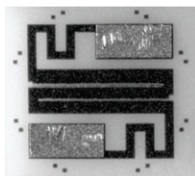


## Thin Film 0202 Size Resistor on Alumina



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)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

### APPLICATIONS

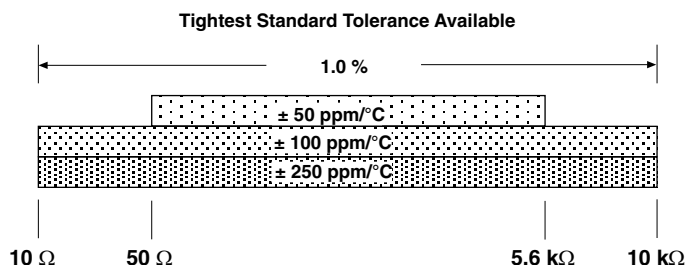
Vishay EFI SFC chip resistors provide excellent high-frequency response and are ideally suited for prototyping.

Typical application areas are:

- Amplifiers
- Oscillators
- Attenuators
- Couplers
- Filters

### TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES, AND TOLERANCES

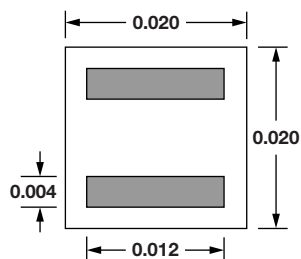
PARAMETER	VALUE	UNIT
Total Resistance Range	10 to 10K	$\Omega$
Standard Tolerances	$\pm 1$	%
TCR	$\pm 50, \pm 100, \pm 250$	ppm/ $^{\circ}$ C



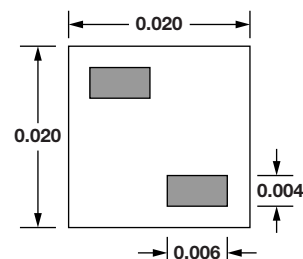
### STANDARD ELECTRICAL SPECIFICATIONS

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  $\Omega$  TO 49  $\Omega$**



**TYPICAL RANGE**  
**50  $\Omega$  TO 10 k $\Omega$**

## SCHEMATIC



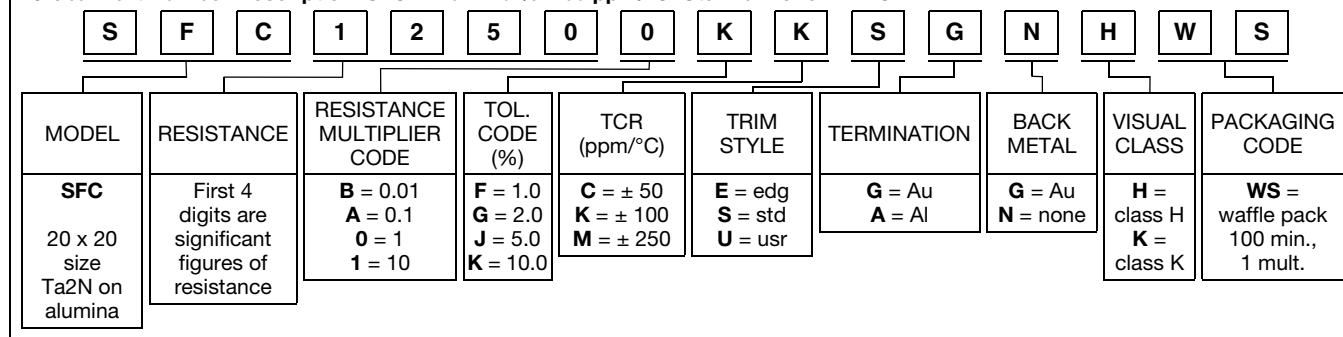
## MECHANICAL SPECIFICATIONS

PARAMETER	VALUE
Chip Size	0.020" x 0.020" $\pm$ 0.003" (0.5 mm x 0.5 mm $\pm$ 0.768 mm)
Chip Thickness	0.010" $\pm$ 0.002" (0.25 mm $\pm$ 0.05 mm)
Chip Substrate Material	99.6 % alumina, 2 $\mu$ " to 4 $\mu$ " 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: SFC12500KKSGNHWS**

**Global Part Number Description: SFC 1.25K 10 % 100 ppm/°C Std Au none H WS**





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