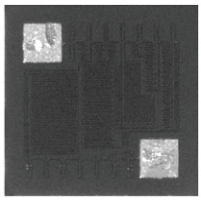
NiCr Thin Film, Top-Contact Resistor



Product may not be to scale

The SFN series resistor chips offer a combination of nichrome stability, good power rating and small size.

The SFNs are manufactured using Vishay Electro-Films (EFI) sophisticated thin film equipment and manufacturing technology. The SFNs are 100 % electrically tested and visually inspected to MIL-STD-883, method 2032, class H or class K.

FEATURES

- Wire bondable
- Chip size: 0.020" square
- Case: 0202
- Resistance range: 20 Ω to 510 kΩ
- Resistor material: Nichrome
- Oxidized silicon substrate
- 125 mW power
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

RoHS COMPLIANT

HALOGEN FREE

GREEN (5-2008)

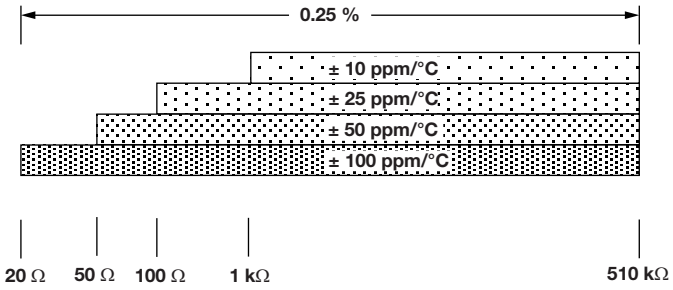
APPLICATIONS

Vishay EFI SFN resistor chips are widely used in hybrid packages where space is limited. Designed with capacity to handle substantial power loads, they also have the benefit of nichrome stability.

Recommended for hermetic environments where die is not exposed to moisture.

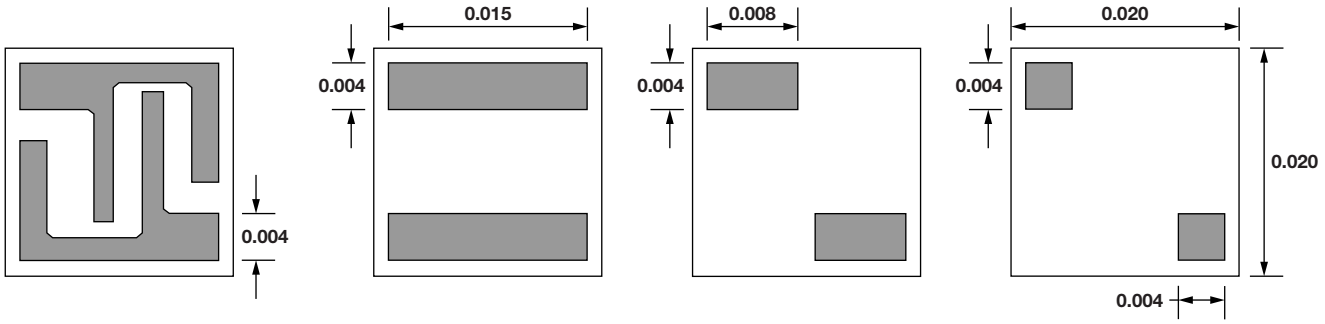
TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES, AND TOLERANCES		
PARAMETER	**VALUE**	**UNIT**
Total Resistance Range	20 to 510K	Ω
Standard Tolerances	± 0.25	%
TCR	± 10, ± 25, ± 50, ± 100, ± 250	ppm/°C

Tightest Standard Tolerance Available



STANDARD ELECTRICAL SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Noise, MIL-STD-202, Method 308 100 Ω to 250 kΩ < 100 Ω or > 251 kΩ	 -35 typ. -20 typ.	dB
Stability, 1000 h, +125 °C, 50 mW	± 0.25 max. $\Delta R/R$	%
Operating Temperature Range	-55 to +125	°C
Thermal Shock, MIL-STD-202, Method 107, Test Condition F	± 0.25 max. $\Delta R/R$	%
High Temperature Exposure, +150 °C, 100 h	± 0.5 max. $\Delta R/R$	%
Dielectric Voltage Breakdown	200	V
Insulation Resistance	10^{12} min.	Ω
Operating Voltage	100 max.	V
DC Power Rating at +70 °C (Derated to Zero at +175 °C)	0.125	W
5 x Rated Power Short-Time Overload, +25 °C, 5 s	± 0.25 max. $\Delta R/R$	%

DIMENSIONS in inches



TYPICAL RANGE
20 Ω to 35 Ω

TYPICAL RANGE
20 Ω to 55 Ω

TYPICAL RANGE
56 Ω to 7.4 kΩ

TYPICAL RANGE
7.5 kΩ to 510 kΩ

SCHEMATIC

MECHANICAL SPECIFICATIONS

PARAMETER	VALUE
Chip Thickness	0.010" ± 0.002" (0.254 mm ± 0.05 mm)
Chip Size	0.020" x 0.020" ± 0.003" (0.51 mm x 0.51 mm ± 0.076 mm)
Chip Substrate Material	Oxidized silicon, 10 kÅ minimum SiO_2
Resistor Material	Nichrome (passivation optional)
Bonding Pad Size	0.004" x 0.004" (0.10 mm x 0.10 mm)
Number of Pads	2
Pad Material	15 kÅ minimum gold (Al optional)
Backing	None, lapped semiconductor silicon (Au back optional)

GLOBAL PART NUMBER INFORMATION

Global Part Number: SFN50000FKANHWS

Global Part Number Description: SFN 5K 1 % 100 ppm Al None H WS

S	F	N	5	0	0	0	0	F	K	A	N	H	W	S

MODEL	RESISTANCE	RESISTANCE MULTIPLIER CODE	TOLERANCE CODE (%)	TCR (ppm/°C)	TERMINATION	BACK METAL	VISUAL CLASS	PACKAGING CODE
SFN 20 x 20 size NiCr on silicon	First 4 digits are significant figures of resistance	**B** = 0.01 **A** = 0.1 **0** = 1 **1** = 10 **2** = 100 **3** = 1000	**C** = 0.25 **D** = 0.5 **F** = 1.0 **G** = 2.0 **J** = 5.0 **K** = 10	**B** = ± 10 **E** = ± 25 **C** = ± 50 **K** = ± 100 **M** = ± 250	**G** = Au **A** = Al	**G** = Au **N** = none	**H** = class H **K** = class K	**WS** = waffle pack 100 min., 1 mult. **FW** = full wafer

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