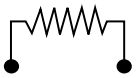
High Precision (0.01 %/10 ppm/°C) Conformal Coating Sil Resistor

FEATURES

- Tight TCR to 5 ppm/°C
- Incorporates high stability thin film element (0.1 % at + 70 °C at Pn during 1000 h)
- Through hole (Sil)
- 100 Ω to 10 MΩ
- Tight tolerance down to 0.01 %
- Compliant to RoHS directive 2002/95/0EC

Pb-free
RoHS COMPLIANT
GREEN (5-2008)**

SCHEMATIC



TYPICAL PERFORMANCE

	ABS
TCR	5 ppm/°C
	ABS
TOL.	0.01 %

STANDARD ELECTRICAL SPECIFICATIONS

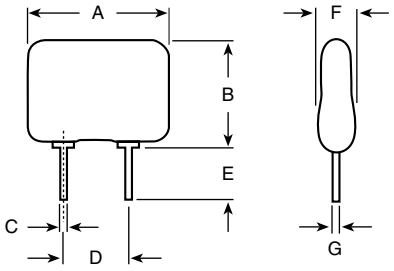
TEST		SPECIFICATIONS	CONDITIONS
MATERIAL		PASSIVATED NICHROME	
Resistance range		100 Ω (minimum) to 10 MΩ (maximum)	
Absolute TCR	Standard (1)	± 10 ppm/°C	- 40 °C to + 125 °C
	On request	± 5 ppm/°C	0 °C to + 70 °C
Tolerance:	Absolute	± 0.01 % to ± 1 %	
Power rating		0.5 W	at + 70 °C
		0.3 W	at + 125 °C
Working voltage (maximum)		300 V	
Operating temperature range		- 55 °C to + 155 °C	

Note

(1) 15 ppm/°C for $R \geq 1.5M$

DIMENSIONS AND IMPRINTING

CNS 020



DIMENSION	INCHES	MILLIMETERS
A	0.318	8.10
B	0.260	6.62
C	0.020	0.51
D	0.200	5.08
E	0.120	3.17
F	0.100	2.54
G	0.010	0.25

In clear: Model, Vishay logo and manufacturing code

On back: Ohmic value (in Ω), tolerance (in %)

** Please see document “Vishay Material Category Policy”: www.vishay.com/doc?99902

ENVIRONMENTAL TEST

TEST	REQUIREMENTS			CONDITIONS
	NFC 83220 CECC40300	MIL-PRF 55182E	DRIFTS (max.)	
Overload	± 0.01 %	± 0.05 %	0.01 %	2.5 Un/5 s $U_{max.}$ < 2 Un
Temperature cycling	± 0.01 %	± 0.05 %	0.01 %	- 55 °C/+ 155 °C 5 cycles CEI 63-2-14 Test No
Terminal strength	± 0.01 %	± 0.02 %	0.01 %	CEI 68-2-21 Test Ua (pulling), Ub (bending), Uc (twisting)
Resistance to solder heat	± 0.01 %	± 0.02 %	0.01 %	+ 260 °C/10 s, CEI 68-2-20A Test T6 (Met 1A)
Vibration	± 0.01 %	± 0.02 %	0.01 %	10 Hz to 500 Hz 10 g, 6 h Met B4; CEI 68-2-6 Test Fc
Climatic sequence	± 0.05 % insulation resistance > 10^2 MΩ	-	0.05 %	- 55 °C/+ 155 °C 6 cycles 95 % RH RH 85 mbar CEI68-1
Moisture	± 0.05 % insulation resistance > 10^2 MΩ	-	0.02 %	56 days 95 % RH + 40 °C CEI 68-2-3
High temperature storage	± 0.05 %	-	0.05 %	1000 h/+ 155 °C CEI 68-2-20A; Test B

MECHANICAL SPECIFICATIONS

Resistive material	Nichrome
Substrate material	Alumina
Terminals	Tin/silver on Cu alloy
Protection	Conformal epoxy coating

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CNS020-301KF (preferred part number format)

C	N	S	0	2	0	-	3	0	1	K	F

GLOBAL MODEL	VALUE	TOLERANCE
CNS 020	Decimal: **R**, **K** or **M**	**L** = ± 0.01 % **P** = ± 0.02 % **W** = ± 0.05 % **B** = ± 0.1 % **C** = ± 0.25 % **D** = ± 0.5 % **F** = ± 1.0 %

Historical Part Number example: CNS 020 301K 1 % (will continue to be accepted)

CNS 020	301K	1 %
HISTORICAL MODEL	VALUE	TOLERANCE

Disclaimer

All product specifications and data are subject to change without notice.

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