CNS 020



Vishay Sfernice

High Precision (0.01 % / 10 ppm/°C) Through Hole Thin Film Conformal Coating Sil Resistor



LINKS TO ADDITIONAL RESOURCES



FEATURES

- Tight TCR to 5 ppm/°C (in 0 °C; +70 °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 %
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

SCHEMATIC



STANDARD ELECTRICAL SPECIFICATIONS					
MODEL	$\begin{array}{c} \textbf{RESISTANCE RANGE}\\ \Omega \end{array}$	ANCE RANGE $P_{70 \circ C}$ VOLTAGE (UL) IOLERANCE COE		TEMPERATURE COEFFICIENT ⁽¹⁾ ± ppm/°C	
CNS 020	100 to 10M	0.5	300	0.01, 0.02, 0.05, 0.1, 0.25, 0.5, 1	5, 10

Note

⁽¹⁾ 15 ppm/°C for $R \ge 1.5M$

CLIMATIC SPECIFICATIONS			
Operating temperature range	-55 °C; +155 °C		

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

IMENSIONS AND IMPRI	NTING CNS 020			
	(lage and obmin value (in ()). On back aider	manufacturing and and talaranaa (in 0/)		
	y logo and ohmic value (in Ω). On back side: INCHES			
On front side: Vishay DIMENSION A	y logo and ohmic value (in Ω). On back side: INCHES 0.330	manufacturing code and tolerance (in %) MILLIMETERS 8.38 max.		
DIMENSION	INCHES	MILLIMETERS		
DIMENSION A	INCHES 0.330	MILLIMETERS 8.38 max.		
DIMENSION A B	INCHES 0.330 0.261	MILLIMETERS 8.38 max. 6.62 max.		
DIMENSION A B C	INCHES 0.330 0.261 0.020	MILLIMETERS 8.38 max. 6.62 max. 0.51		
DIMENSION A B C D	INCHES 0.330 0.261 0.020 0.200	MILLIMETERS 8.38 max. 6.62 max. 0.51 5.08		



ROHS

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1 For technical questions, contact: <u>sferthinfilm@vishay.com</u> Document Number: 60051

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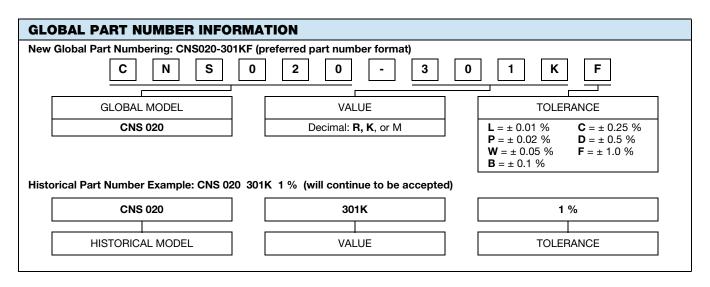
TECHNICAL SPECIFICATIONS				
TEST		SPECIFICATIONS	CONDITIONS	
MATERIAL		PASSIVATED NICHROME		
Absolute TCR	Standard ⁽¹⁾	± 10 ppm/°C	-40 °C to +125 °C	
ADSOIULE TOR	On request	± 5 ppm/°C	0 °C to +70 °C	
Power rating		0.5 W	at +70 °C	
		0.3 W	at +125 °C	
Dissipation factor (in air) 1/R _{TH} (2)			6.7 mW/°C	

Notes

 $^{(1)}$ 15 ppm/°C for R $\geq 1.5 M$

⁽²⁾ For information only

ENVIRONMENTAL TEST					
	REQUIREMENTS				
TEST	NFC 83220 CECC40300	MIL-PRF 55182E	DRIFTS (MAX.)	CONDITIONS	
Overload	± 0.01 %	± 0.05 %	0.01 %	2.5 U _L /5 s <i>U</i> _{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	$\begin{array}{c} \pm \ 0.05 \ \% \\ \text{insulation resistance} \\ > 10^2 \ M\Omega \end{array}$	-	0.05 %	-55 °C / +155 °C 6 cycles 95 % RH RH 85 mbar CEl68-1	
Moisture	$\begin{array}{c} \pm \ 0.05 \ \% \\ \text{insulation resistance} \\ > 10^2 \ M\Omega \end{array}$	-	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	



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