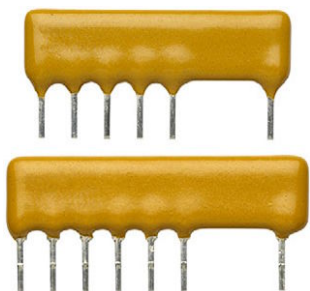


## Decade Divider, Single-In-Line Through Hole Thin Film Resistor Networks (Standard)



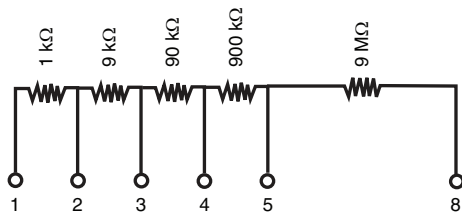
### LINKS TO ADDITIONAL RESOURCES



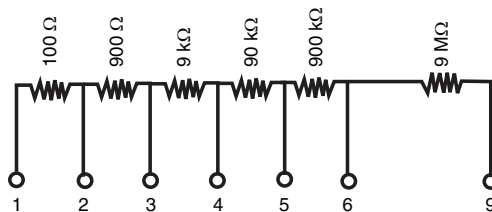
Using these integrated thin film networks instead of discrete resistor sets, designers gain several advantages: smaller size, better overall tracking, greater reliability, and lower cost.

### SCHEMATIC

5 Decades



6 Decades



### FEATURES

- Tight TCR tracking down to 2.5 ppm typical
- Low voltage coefficient < 0.02 ppm/V
- Low noise index < -30 dB
- 5 decades: 1 kΩ to 9 MΩ
- 6 decades: 100 Ω to 9 MΩ
- High stability 0.01 % on ratio (1000 h at Pn at +70 °C)
- 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)

### TYPICAL PERFORMANCE

	ABS	TRACKING
TCR	± 25 ppm/°C	< 2.5 ppm/°C
	ABS	RATIO
TOL.	0.1 %	0.03 %

### STANDARD ELECTRICAL SPECIFICATIONS

MODEL	RESISTANCE RANGE Ω	POWER RATING PER RESISTOR W	POWER RATING PER PACKAGE 0 °C TO 70 °C W	ABSOLUTE TOLERANCE 0 °C TO 70 °C ± %	RATIO TOLERANCE <sup>(2)</sup> ± %	ABSOLUTE TCR 0 °C TO 70 °C ± ppm/°C	RATIO TCR <sup>(1)</sup> ppm/°C
CNS 471	100 to 10M	0.1	0.6	0.1	0.03, 0.05, 0.1	25	2.5 typical

#### Notes

<sup>(1)</sup> Except for 100R (5 ppm/°C)

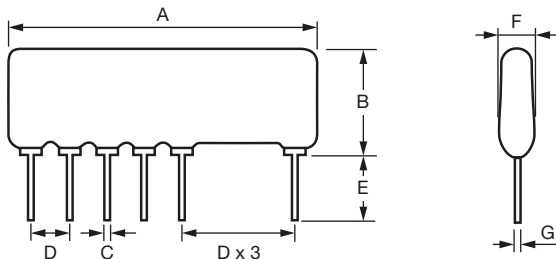
<sup>(2)</sup> A = ± 0.05 %, B = ± 0.1 %, C = ± 0.03 %

### PERFORMANCES

TEST	SPECIFICATIONS	CONDITIONS
Stability ΔR ratio	0.01 % typical	1000 h at +70 °C at Pn
Voltage coefficient	< 0.02 ppm/V	
Working voltage	1200 V	
Operating temperature range	0 °C; +70 °C	
Storage temperature range	-55 °C to +155 °C	
Noise	< -30 dB typical	
Thermal EMF	0.1 μV/°C	
Shelf life stability (ratio)	50 ppm	1 year

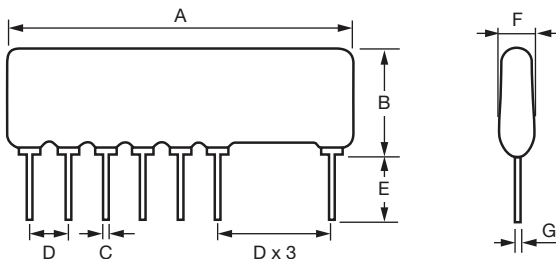
## DIMENSIONS

5 Decades



DIMENSION	INCHES	MILLIMETERS
A	0.830	21.08 max.
B	0.261	6.62 max.
C	0.020	0.51
D	0.100	2.54
E	0.125	3.17 min.
F	0.100	2.54 max.
G	0.010	0.25

6 Decades



DIMENSION	INCHES	MILLIMETERS
A	0.930	23.62 max.
B	0.261	6.62 max.
C	0.020	0.51
D	0.100	2.54
E	0.125	3.17 min.
F	0.100	2.54 max.
G	0.010	0.25

## MECHANICAL SPECIFICATIONS

Resistive material	Nichrome
Coating	Fluidized epoxy
Terminals	Tin / silver on copper alloy
Substrate material	Alumina
Marking resistance to solvents	Laser marking

## GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: **CNS471A6**

<b>C</b>	<b>N</b>	<b>S</b>	<b>4</b>	<b>7</b>	<b>1</b>	<b>A</b>	<b>6</b>
MODEL			TOLERANCE			NUMBER OF DECADES	
CNS 471			B = 0.1 %; 0.1 % A = 0.1 %; 0.05 % Q = 0.1 %; 0.03 %			5 6	

Historical Part Number Example: **CNS 471 A 6 e2**



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