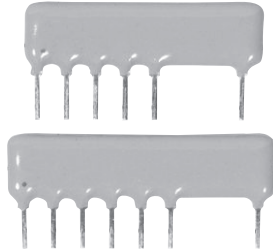


## Decade Divider, Single-In-Line Through Hole Thin Film Resistor Networks (Standard)



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.

### 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 k $\Omega$  to 9 M $\Omega$
- 6 decades: 100  $\Omega$  to 9 M $\Omega$
- 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)



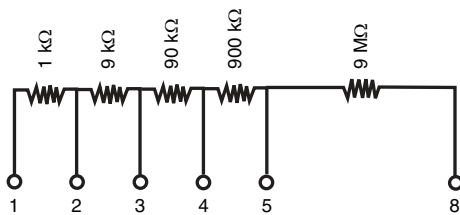
**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

### TYPICAL PERFORMANCE

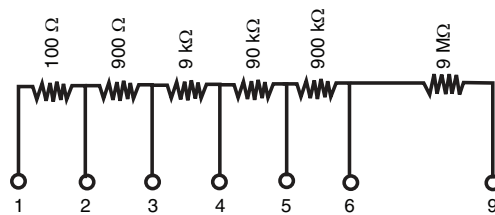
	ABS	TRACKING
<b>TCR</b>	< 25 ppm/°C	< 2.5 ppm/°C
	ABS	RATIO
<b>TOL.</b>	0.1 %	0.03 %

### SCHEMATIC

5 Decades



6 Decades



### STANDARD ELECTRICAL SPECIFICATIONS

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

#### Notes

(1) Except for 100R (5 ppm/°C)

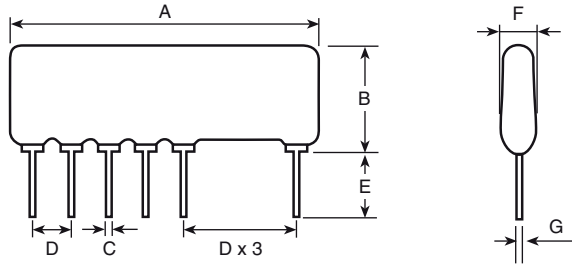
(2) A =  $\pm$  0.05 %, B =  $\pm$  0.1 %, C =  $\pm$  0.03 %

### PERFORMANCES

TEST	SPECIFICATIONS	CONDITIONS
Stability $\Delta$ R 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 $\mu$ V/°C	
Shelf life stability (ratio)	50 ppm	1 year

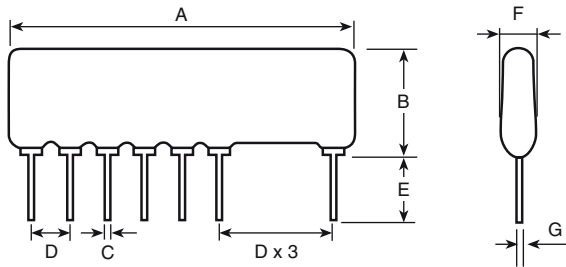
**DIMENSIONS**

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



Historical Part Number example: CNS 471 A 6 e2



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