

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 Ω to 9 M Ω
- 6 decades: 100 Ω to 9 M Ω
- 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



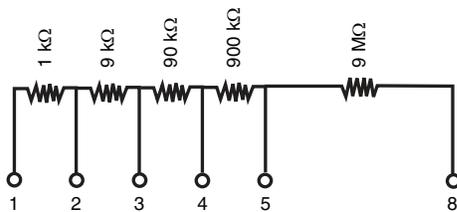
RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

TYPICAL PERFORMANCE

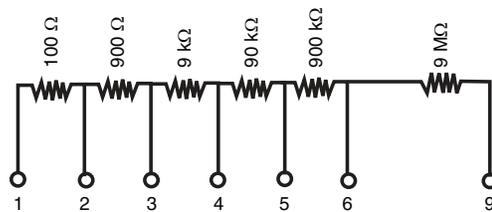
| | ABS | TRACKING |
|-------------|-------------|--------------|
| TCR | < 25 ppm/°C | < 2.5 ppm/°C |
| | ABS | RATIO |
| TOL. | 0.1 % | 0.03 % |

SCHEMATIC

5 Decades



6 Decades



STANDARD ELECTRICAL SPECIFICATIONS

| MODEL | SIZE | 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 \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)

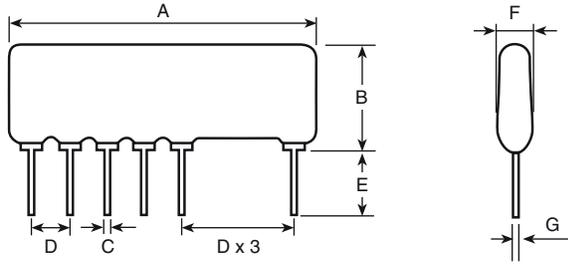
(2) A = \pm 0.05 %, B = \pm 0.1 %, C = \pm 0.03 %

PERFORMANCES

| TEST | SPECIFICATIONS | CONDITIONS |
|------------------------------|---------------------|-------------------------|
| Stability Δ 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 μ V/°C | |
| Shelf life stability (ratio) | 50 ppm | 1 year |

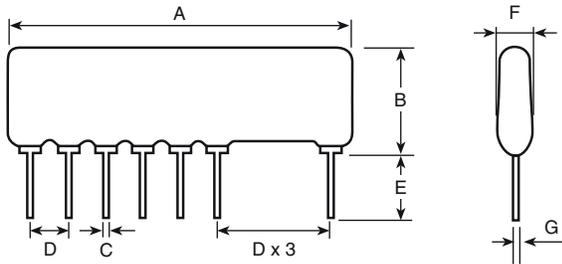
DIMENSIONS

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



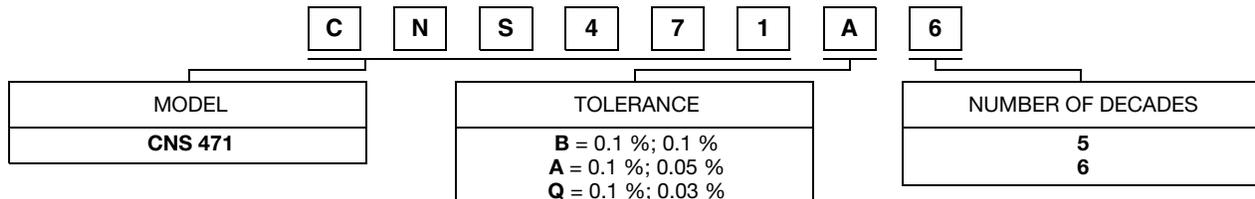
| DIMENSION | INCHES | MILLIMETERS |
|-----------|--------|-------------|
| A | 0.930 | 23.62 max. |
| B | 0.261 | 6.62 max. |
| C | 0.020 | 0.51 |
| D | 0.100 | 2.54 |
| E | 0.125 | 3.17 min. |
| F | 0.100 | 2.54 max. |
| G | 0.010 | 0.25 |

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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