KOA SPEER ELECTRONICS, INC.

RoHS COMPLIANT

spec sheet

SS-246 R4
AHA 6/11/07

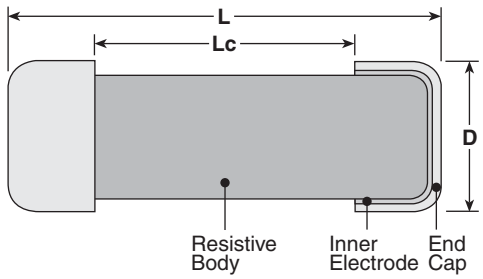
# Fixed Ceramics Resistor
# CPCN Type

ISO 9001:2000 CERTIFIED
TS-16949 CERTIFIED

## 1. Features

- Suitable for noise suppression of engine ignition system
- Reliable in pulse/transient applications
- Meets RoHS requirements

## 2. Dimensions




| Size Code | Dimensions inches (mm) L | Lc (min.) | D | Cap Plate Type |
|---|---|---|---|---|
| CPCN1/2 | .421±.02 (10.7±0.5) | .213 (5.4) | .138±.012 (3.5±0.3) | Ni |
| CPCN1 | .63±.024 (16.0±0.6) | .378 (9.6) | .187±.012 (4.75±0.3) | Ni |
| CPCN2N | .720±.024 (18.3±0.6) | .452 (11.5) | .187±.012 (4.75±0.3) | Ni |
| CPCN3 | .720±.024 (18.3±0.6) | .394 (10.0) | .283±.012 (7.2±0.3) | Sn |

## 3. Type Designation

The type designation shall be in the following form:

| CPCN | 2N | 502 | M |
|---|---|---|---|
| Type | Power Rating Symbol | Nominal Resistance | Tolerance |
| | 1/2: 0.5W 2N: 1.5W<br>1: 1.0W 3: 2.0W | 2 significant figures + 1 multiplier | M: ±20% |

## 4. Ratings

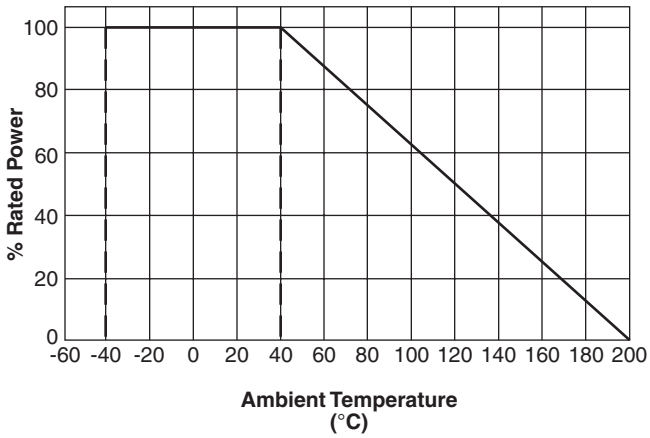
| Part Designation | Power Rating | T.C.R. (ppm/°C) Max. | Nominal Resistance | Resistance Tolerance | Absolute Maximum Working Voltage | Absolute Maximum Overload Voltage | Rated Ambient Temperature | Operating Temperature Range |
|---|---|---|---|---|---|---|---|---|
| CPCN1/2 | 0.5W | -1200±300 | 1kΩ, 5kΩ, 10kΩ, 15kΩ | M: ±20% | 86V | 215V | +40°C | -40°C to +200°C |
| CPCN1 | 1.0W | | | | 122V | 305V | | |
| CPCN2N | 1.5W | | | | 150V | 375V | | |
| CPCN3 | 2.0W | | 15kΩ | | 173V | 432V | | |

Coating type of CPCN2N is available on request.
Rated Voltage = √Power Rating x Resistance Value or Maximum Working Voltage, whichever is lower.



Bolivar Drive ■ P.O. Box 547 ■ Bradford, PA 16701 ■ USA ■ 814-362-5536 ■ Fax 814-362-8883 ■ www.koaspeer.com

## 4.1. Derating Curve




## 5. Characteristics

| Parameter | Requirement Δ R Limit | Typical | Test Method | | | |
|---|---|---|---|---|---|---|
| Resistance | Within regulated tolerance | — | Resistance | Measurement Voltage | | |
| | | | 1kΩ, 5kΩ | 10V | | |
| | | | 10kΩ, 15kΩ | 30V | | |
| T.C.R. | -1200±300ppm/°C | — | +25°C/-40°C and +25°C/+125°C | | | |
| Voltage Coefficient | 0 ~ -0.2%/V | — | Rated voltage and rated voltage x 10% | | | |
| Overload | ±2% | ±0.3% | Rated voltage x 2.5 or max. overload voltage for 5 seconds, whichever is less | | | |
| Load Life at High Voltage Pulse | ±30% | — | Continuous 250h high voltage pulse on the test circuit (Refer to JIS D5111) | | | |
| Resistor Body Strength | No mechanical damages | — | Type | Holding Distance | Time | Force |
| | | | CPCN1/2 | 5.0 ± 0.2mm | 10 seconds | 98N (10kgf) |
| | | | CPCN1 | 9.0 ± 0.3mm | | |
| | | | CPCN2N | 12.3 ± 0.3mm | | |
| | | | CPCN3 | | | 490N (50kgf) |
| Rapid Change of Temperature | ±5.0% | ±5.0% | -55°C (15 minutes), +155°C (15 minutes), 500 cycles | | | |
| Moisture Resistance | ±5.0% | ±0.9% | 40°C ± 2°C, 90 - 95% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle | | | |
| Load Life | ±5.0% | ±0.7% | 40°C ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle | | | |
| Low Temperature Operation | ±5.0% | ±0.7% | -40°C, 24 hours | | | |
| High Temperature Exposure | ±5.0% | ±2.0% | +200°C, 1000 hours | | | |

The resistance measurement before and after the examination should be performed in room temperature with difference ±1°C.



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