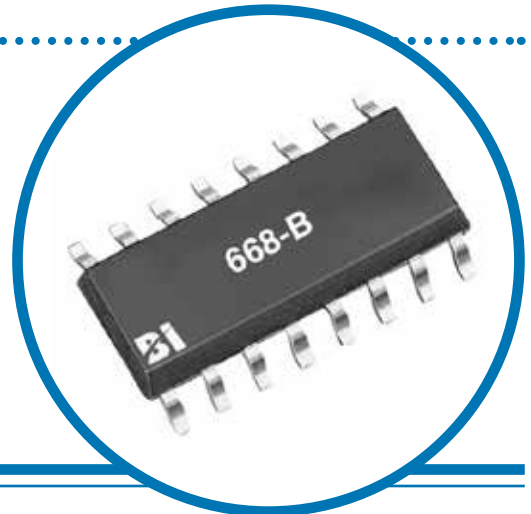


# Nichrome Resistor Networks on Ceramic Substrates

Models 664, 667, 668

- Isolated and bussed circuits
- Thin film resistor network
- 0.150" SOIC packages
- RoHS compliant



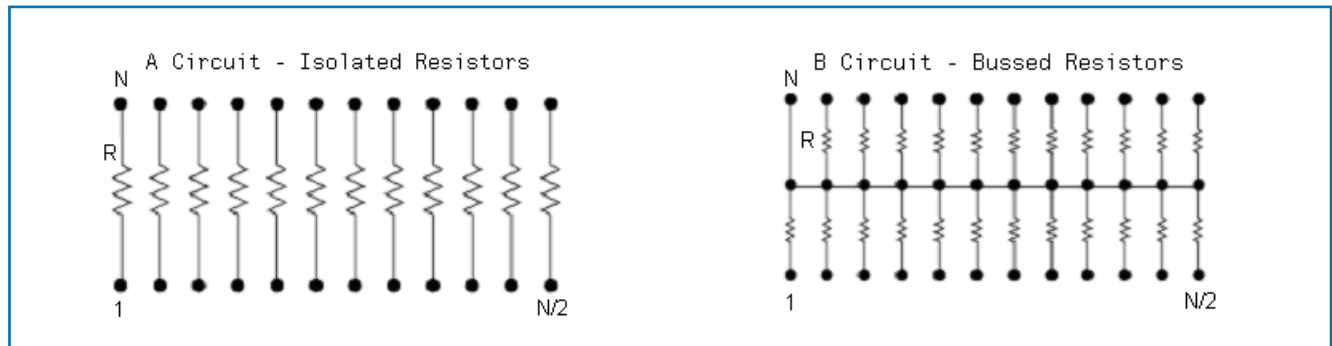
**OBSOLETE**  
**Not Recommended for New Designs**

For alternative see [http://www.irctt.com/file.aspx?product\\_id=215&file\\_type=datasheet](http://www.irctt.com/file.aspx?product_id=215&file_type=datasheet)

## Features

|   |   |
|---|---|
| Precision Nichrome Resistors on Ceramic | Passivation coating provides protection in humid environments<br>Excellent frequency response<br>Excellent long term resistance stability |
| Industry Standard Packaging             | JEDEC 95, MS-012<br>(SOIC narrow body in 8, 14 and 16 lead pin counts)  |
| Ratio Tolerances                        | < ± 0.05%   |
| TCR Tracking Tolerances                 | < ± 5 ppm/°C  |

## Schematics



## Electrical<sup>1</sup>

|  |   |
|--|---|
| Standard Resistance Range <sup>2</sup>   | 1K ohms to 100K ohms (Isolated)<br>1K ohms to 20K ohms (Bussed) |
| TCR                                      | ± 25 ppm/°C   |
| TCR Tracking                             | ± 5 ppm/°C  |
| Operating Temperature Range              | -55°C to +125°C   |
| Interlead Capacitance                    | < 2pF   |
| Insulation Resistance                    | ≥ 10,000 Megohms  |
| Maximum Operating Voltage                | 100 Vdc or √ PR   |
| Noise, Maximum (MIL-STD-202, Method 308) | -40 dB  |
| Resistor Power Rating at 70°C            | 0.1 Watts   |

<sup>1</sup> Specifications subject to change without notice.

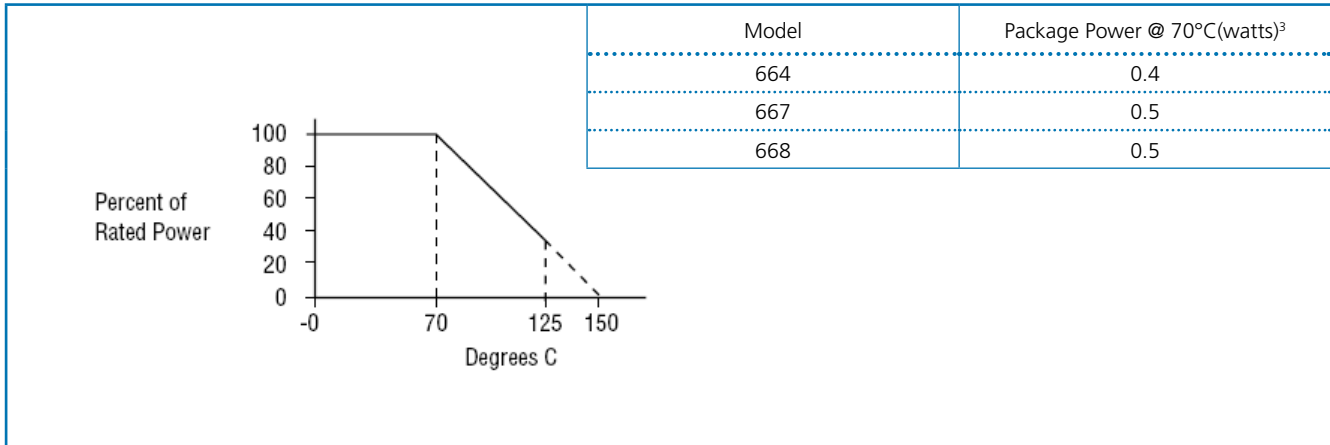
<sup>2</sup> E96 codes available.

### General Note

TT electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT electronics' own data and is considered accurate at time of going to print.

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## Package Power And Derating Curve



## Environmental (Mil-R-83401)

|                                       |                         |
|---------------------------------------|-------------------------|
| Thermal Shock plus Power Conditioning | ΔR 0.25%                |
| Short Time Overload                   | ΔR 0.1%                 |
| Terminal Strength                     | ΔR 0.1%                 |
| Moisture Resistance                   | ΔR 0.2%                 |
| Mechanical Shock                      | ΔR 0.25%                |
| Vibration                             | ΔR 0.25%                |
| Low Temperature Operation             | ΔR 0.1%                 |
| High Temperature Exposure             | ΔR 0.1%                 |
| Load Life, 1,000 Hours                | ΔR 0.1%                 |
| Resistance to Solder Heat             | ΔR 0.1%                 |
| Dielectric Withstanding Voltage       | 100V for 1 minute       |
| Temperature Exposure, Maximum         | 215°C for 3 minutes     |
| Marking Permanency                    | MIL-STD-202, Method 215 |
| Lead Solderability                    | MIL-STD-202, Method 208 |
| Flammability                          | UL-94V-0 Rated          |
| Storage Temperature Range             | -65°C to +125°C         |

## Mechanical

|                    |                      |
|--------------------|----------------------|
| Lead Plating       | 100 matte Tin (RoHS) |
| Lead Material      | Copper Alloy         |
| Lead Configuration | Gull Wing            |
| Lead Coplanarity   | 0.004" (0.102 mm)    |
| Substrate Material | Alumina              |
| Resistor Material  | Passivated Nichrome  |
| Body Material      | Molded Epoxy         |

<sup>3</sup> Maximum power per resistor @ 70°C is 100 mW, not to exceed package power

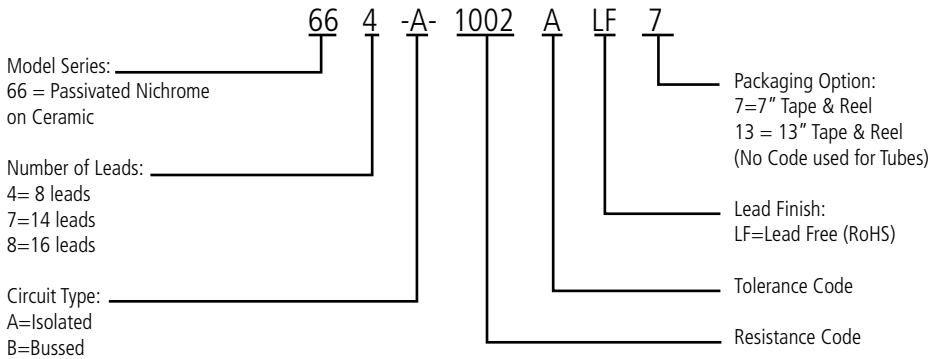
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### Ordering Information<sup>4</sup>



### Resistance Code<sup>4</sup>

First 3 digits are significant. Fourth digit denotes number of trailing zeros. For values less than 100, use "R" to denote a decimal point. Example, 51 and 10000 ohms are coded as 51R0 and 1002 respectively. Standard values follow E96.

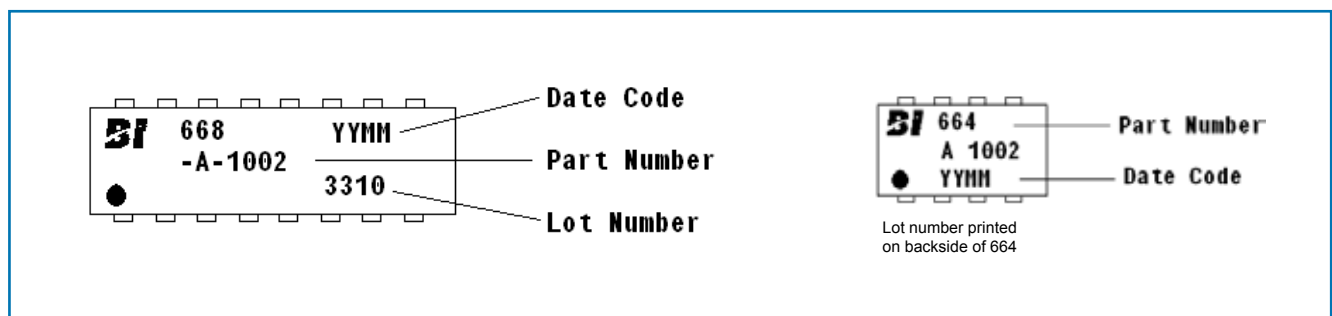
### Resistance Tolerance Code

| Accuracy Code at 25°C                                    | A      | B     | D     | F     |
|--|--------|-------|-------|-------|
| Absolute Resistance Tolerances (%)                       | ± 0.1  | ± 0.1 | ± 0.5 | ± 1.0 |
| Ratio Tolerances (R1 Ref) (%)                            | ± 0.05 | ± 0.1 | ± 0.1 | ± 0.5 |
| Temperature Coefficient of Resistance (ppm/°C)           |        |       |       | ±25   |
| Temperature Coefficient of Resistance, Tracking (ppm/°C) |        |       |       | ±5    |

### Packaging Options (Unit Count/Package Type)

| Model + Pin count | Tubes | 7" Tape & Reel | 13" Tape & Reel |
|-------------------|-------|----------------|-----------------|
| 664               | 100   | 1000           | 2500            |
| 667               | 50    | 500            | 2500            |
| 668               | 50    | 500            | 2500            |

### Typical Marking



<sup>4</sup> Contact customer service for custom designs and features.

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