

Nichrome Resistor Networks on Ceramic Substrates

Model 694, 698, 699 Series

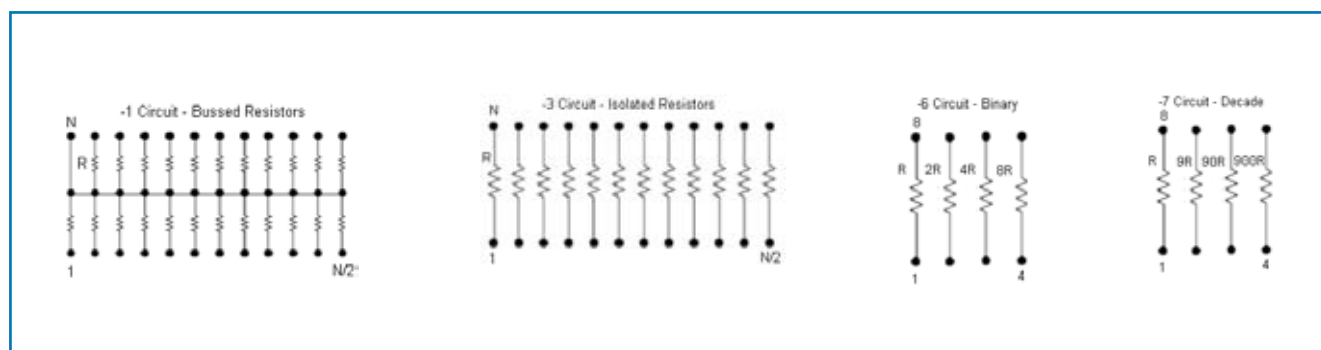
- Isolated, bussed and other circuits
- Thin film resistor network
- 0.300" PDIP packages
- RoHS compliant



Features

| | |
|---|---|
| Precision Nichrome Resistors on Ceramic | Passivation coating provides protection in humid environments Excellent frequency response Excellent long term resistance stability |
| Industry Standard Packaging | JEDEC 95, MS-001 (Plastic DIP 0.300 inch wide in 8, 14 and 16 lead pin counts) |
| Ratio Tolerances | < ± 0.05% |
| TCR Tracking Tolerances | < ± 5 ppm/°C |

Schematics



Electrical¹

| | |
|--|---|
| Standard Resistance Range ² | 1K ohms to 100K ohms (Isolated) 1K ohms to 45K ohms (Bussed) |
| TCR ³ | ± 25 ppm/°C |
| TCR Tracking ³ | ± 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 $\sqrt{\text{PR}}$ |
| Noise, Maximum (MIL-STD-202, Method 308) | -40 dB |
| Resistor Power Rating at 70°C | 0.1 Watts |

¹ Specifications subject to change without notice.

² E96 codes available.

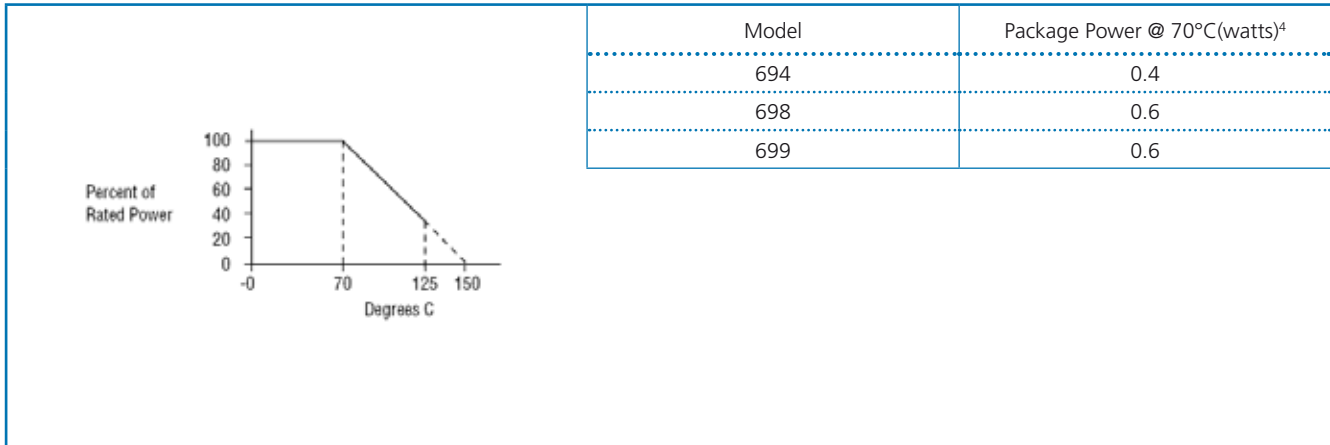
³ Standard limits for all resistance codes.

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.



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 | 200V for 1 minute |
| 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

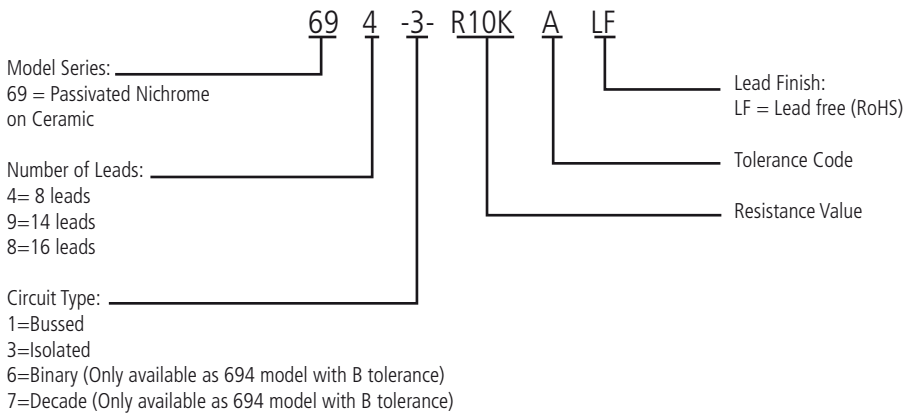
| | |
|--------------------|----------------------|
| Lead Plating | 100 matte Tin (RoHS) |
| Lead Material | Copper Alloy |
| Lead Configuration | Thru hole |
| Substrate Material | Alumina |
| Resistor Material | Passivated Nichrome |
| Body Material | Molded Epoxy |

4 Maximum power per resistor @ 70°C is 100 mW, not to exceed package power

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Ordering Information⁵



Resistance Code⁵

Standard values follow E96 table. Character “K” denotes a multiplier of 1000.

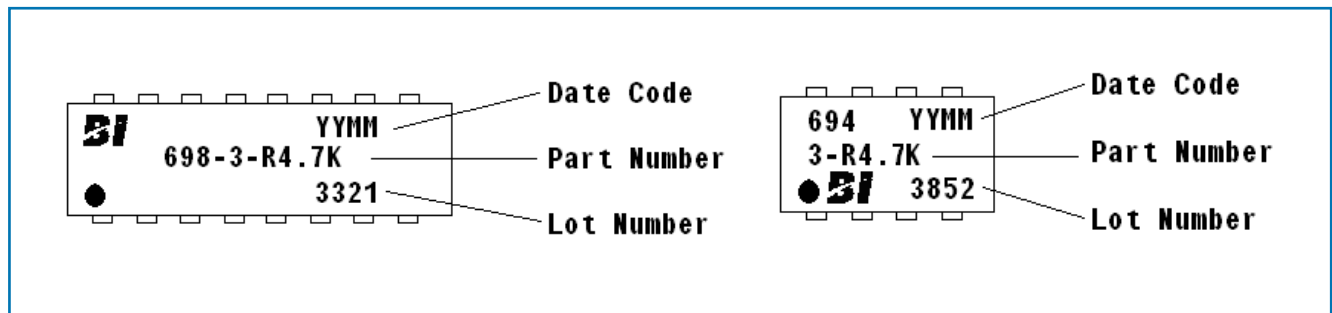
Resistance Tolerance Code

| 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 |

Packaging Options (Unit Count/Tube)

| Model + Pin count | Unit Count/Tube |
|-------------------|-----------------|
| 694 | 100 |
| 699 | 50 |
| 698 | 50 |

Typical Marking



⁵ Consult customer service for custom designs and features.

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