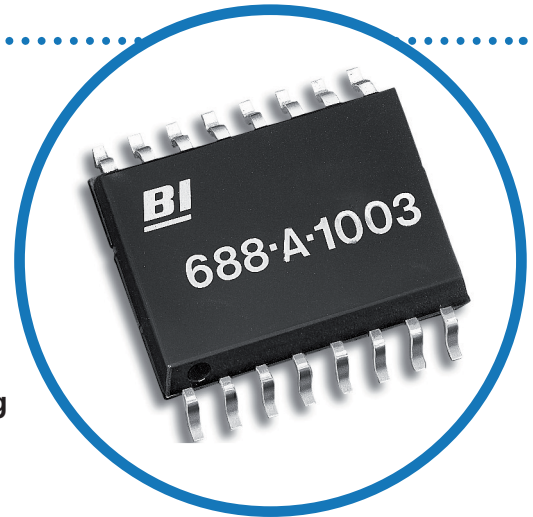


# Nichrome Resistor Networks on Ceramic Substrates

Model 688 Series

## Precision Thin Film .300" Dual In-Line Surface Mount Resistor Networks

- **RoHS Compliant**
- **Unique passivation coating eliminates moisture concerns and allows for use in applications traditionally restricted to tantalum nitride**
- **Outperforms other thin film resistor materials providing excellent tolerances, ratio matching, temperature coefficient, and temperature tracking**
- **Improved performance over silicon substrates in stray capacitance, frequency response and stability**



## Electrical

Operating Temperature Range	-55°C to +125°C
Resistance Voltco	≈0
Interlead Capacitance	<2pF
Operating Voltage, Maximum	100Vdc or $\sqrt{PR}$
Insulation Resistance	≥10,000 Megohms
Noise, Maximum (MIL-STD-202, Method 308)	-40dB

## Environmental (Mil-R-83401)

Thermal Shock plus Power Conditioning	ΔR 0.25%
Short Time Overload	ΔR 0.10%
Terminal Strength	ΔR 0.10%
Moisture Resistance	ΔR 0.20%
Mechanical Shock	ΔR 0.25%
Vibration	ΔR 0.25%
Low Temperature Storage	ΔR 0.10%
High Temperature Exposure	ΔR 0.10%
Load Life, 1,000 Hours	ΔR 0.10%
Resistance to Solder Heat	ΔR 0.10%
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-O Rated
Storage Temperature Range	-65°C to +125°C

Specifications subject to change without notice.

### 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.

## Mechanical

Lead Material	100% matte Tin (RoHS)
Lead Configuration	Gull Wing
Lead Coplanarity	0.004" (0.102mm)
Substrate Material	Alumina
Resistor Material	Nichrome
Body Material	Molded Epoxy

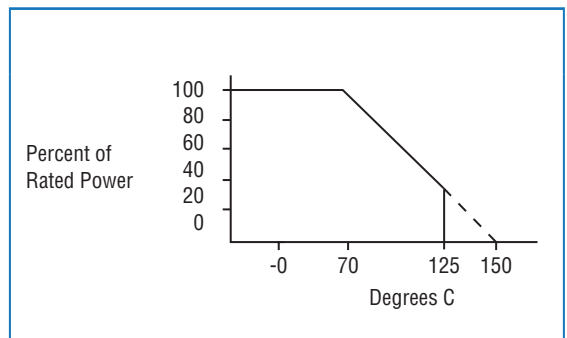
## Tolerances

Accuracy Code	B	D	F
Absolute Resistance Tolerances, at 25°C	0.1%	0.5%	1.0%
Ratio	0.1%	0.1%	0.5%
Temperature Coefficient of Resistance	±25ppm/°C		
Temperature Coefficient of Resistance, Tracking	±5ppm/°C		

## Standard Resistance Values, Ohms

Model	Ohms	Code
688A	50K	5002
	100K	1003
688B	100K	1003

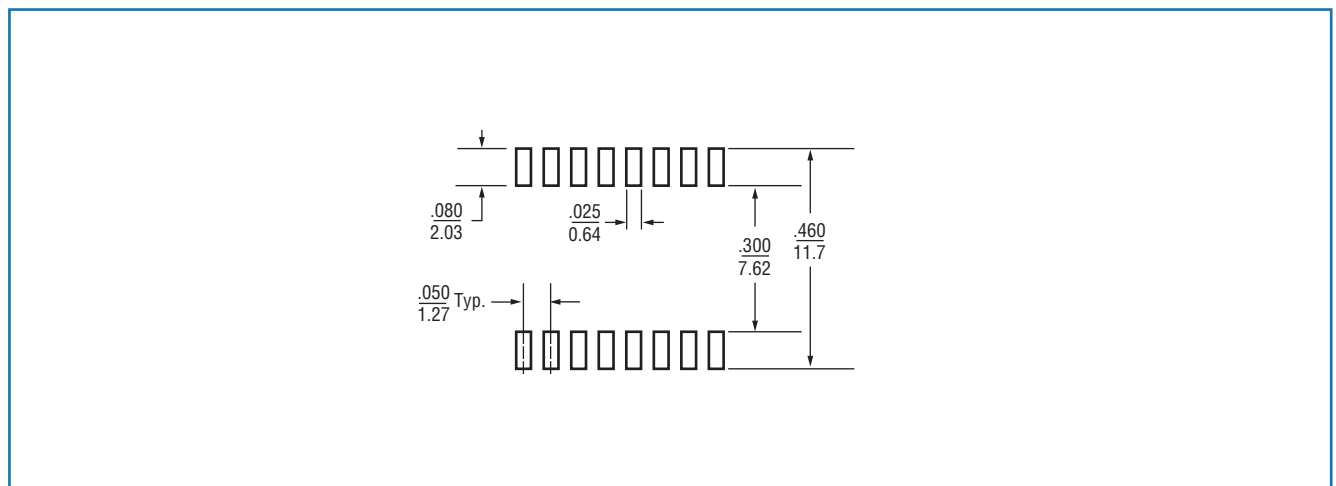
## Power Derating Curve



## Power Dissipation, Watts At 70°C

Model	Package	Per Resistor
688	.7	.1

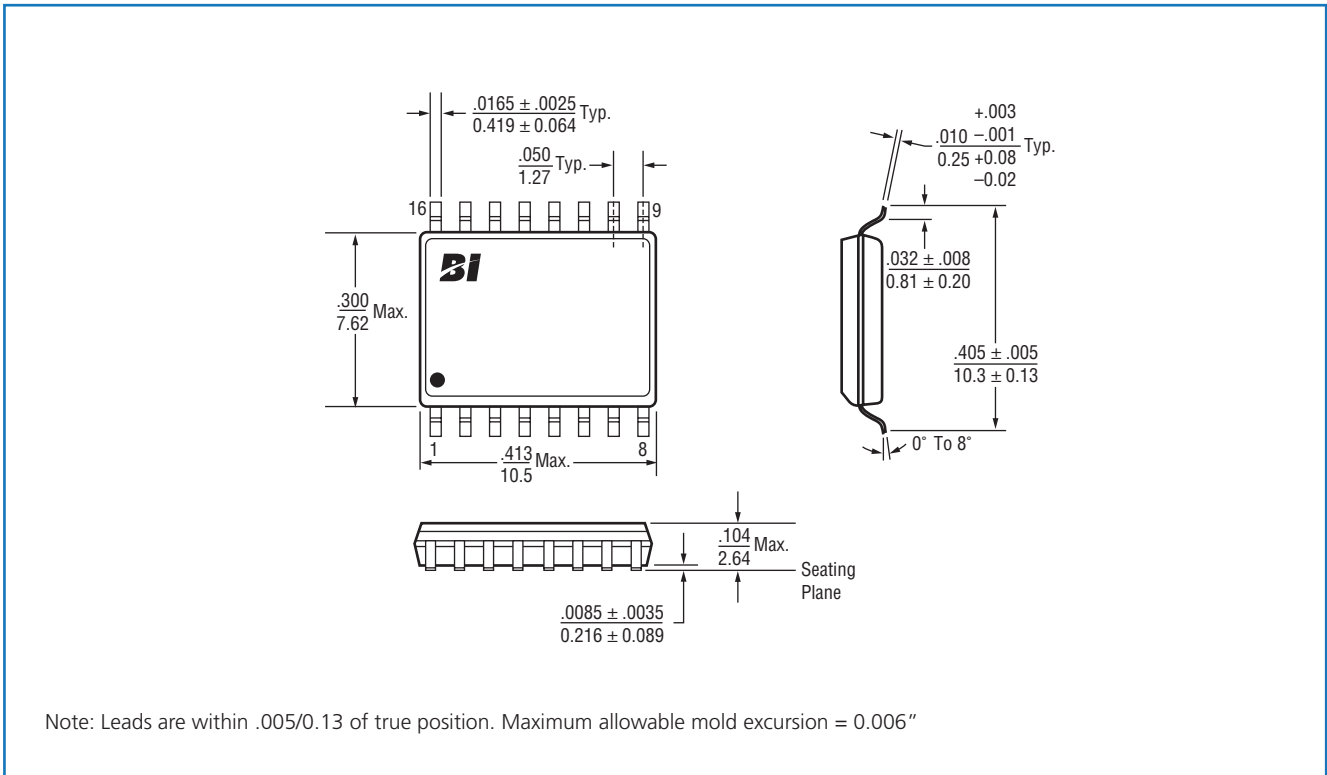
## Solder Pad Layout (Inch/mm)



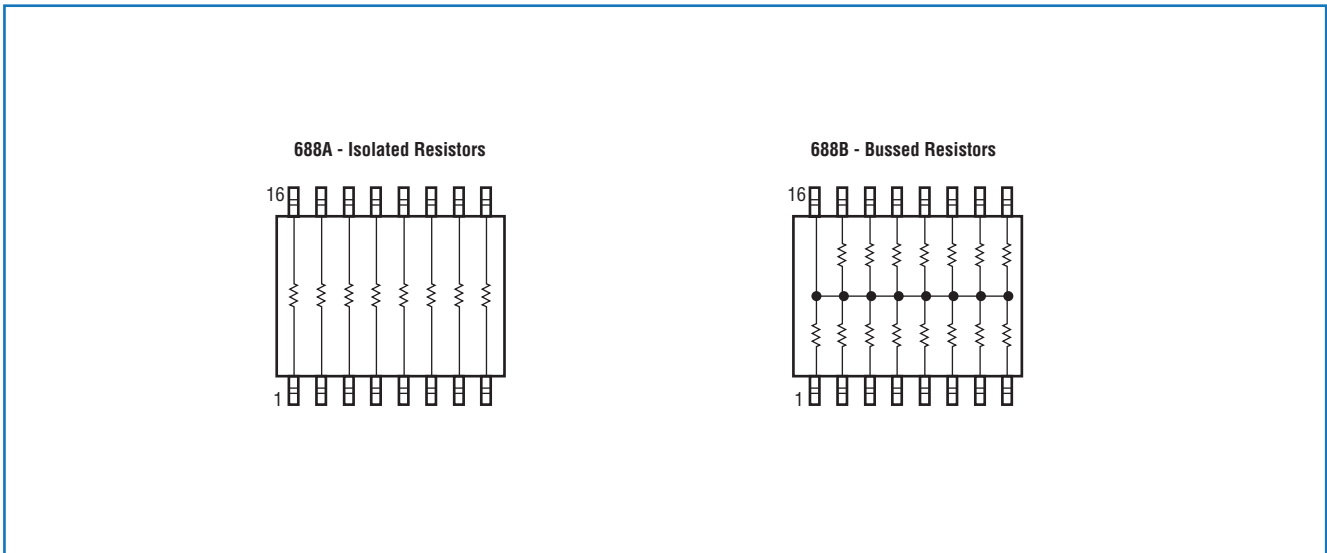
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## Outline Dimensions (Inch/mm)



## Schematics



## Applicable Documents

- MIL-R-83401 — Resistor Networks, Fixed, Film, General Specifications
- MIL-STD-202 — Test Methods for Electronics and Electrical Component Parts

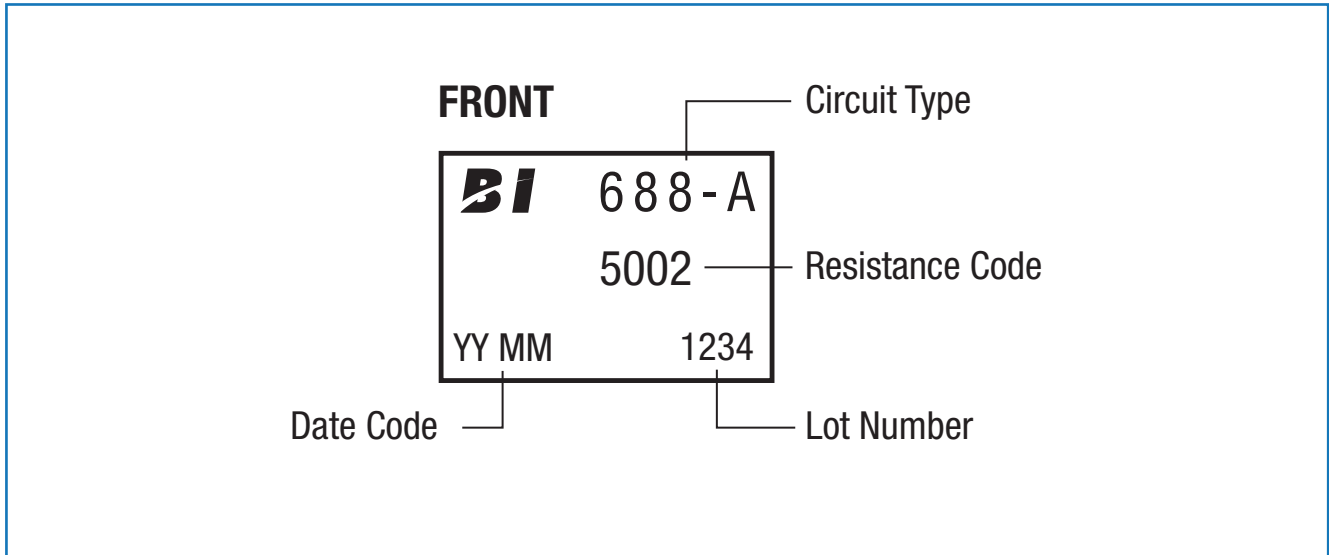
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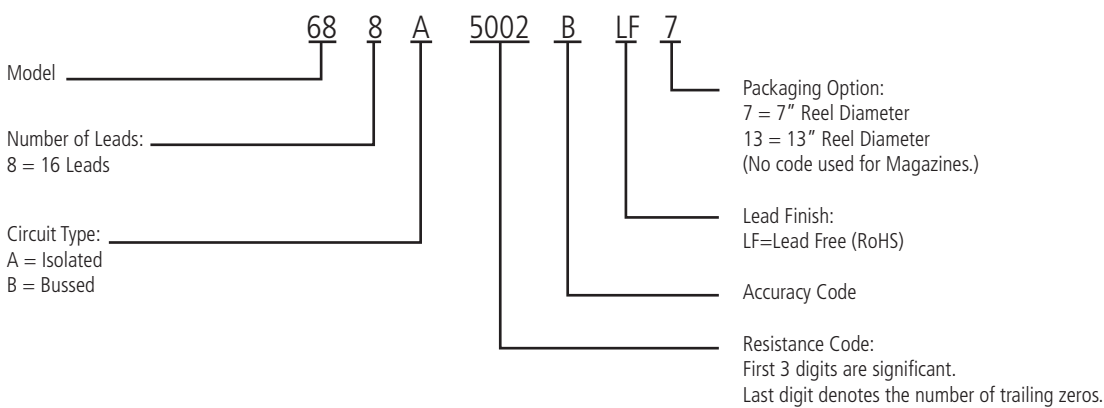
## Typical Marking



## Packaging

Standard:	Magazines All units oriented with lead #1 to the same side.		
Magazine:	Capacity =	50 units	
Option	Embossed Tape & Reel		
Option:	Magazines Conforms to EIA and JEDEC standards. All units oriented with lead #1 to the same side.		
Reel:	Diameter =	7" Reel	13" Reel
	Capacity =	500 Units	1,500 Units

## Ordering Information



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