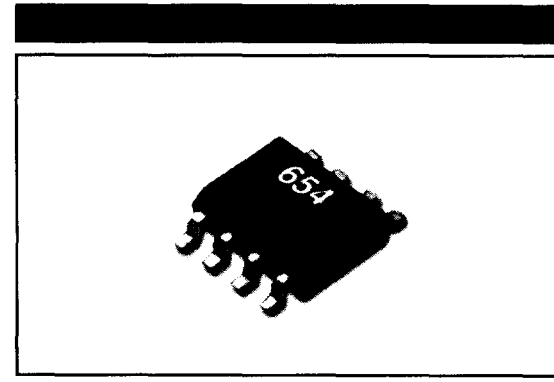
MODEL 654

RF Attenuator
Precision Thin Film
Surface Mount
Resistor Networks



FEATURES

- **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

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ELECTRICAL

Impedance	50 Ohm
Operating Temperature Range	-55°C to +125°C
Resistance Voltco	≈0
Temperature Coefficient	±25ppm/°C
Operating Voltage, Maximum	100Vdc or √PR
Insulation Resistance	≥10,000 Megohms
Noise, Maximum (MIL-STD-202, Method 308)	-40dB

PERFORMANCE

Frequency	DC to 500MHz	500MHz to 1GHz
VSWR	1.05 Max.	1.10 Max.
Attenuation Accuracy	±0.1dB Max.	±0.2dB Max.
Frequency Flatness	±0.1dB Max.	±0.2dB Max.
Phase Shift	±10° Max.	±20° Max.

Specifications subject to change without notice.

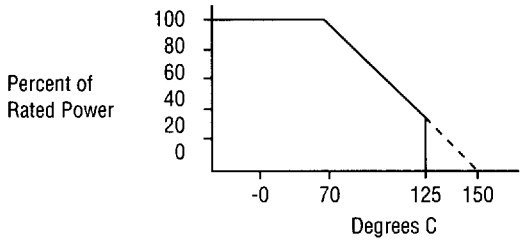
ENVIRONMENTAL

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	per MIL-STD-202, Method 215
Lead Solderability	per MIL-STD 202, Method 208
Flammability	UL-94V-O Rated
Storage Temperature Range	-65°C to +125°C

MECHANICAL

Lead Plating	85/15 Tin Lead
Lead Material	Copper Alloy
Lead Configuration	Gull Wing
Lead Coplanarity	0.004" (0.102mm)
Substrate Material	Alumina
Resistor Material	Nichrome
Body Material	Molded Epoxy

POWER DERATING CURVE



STANDARD ATTENUATION VALUES*

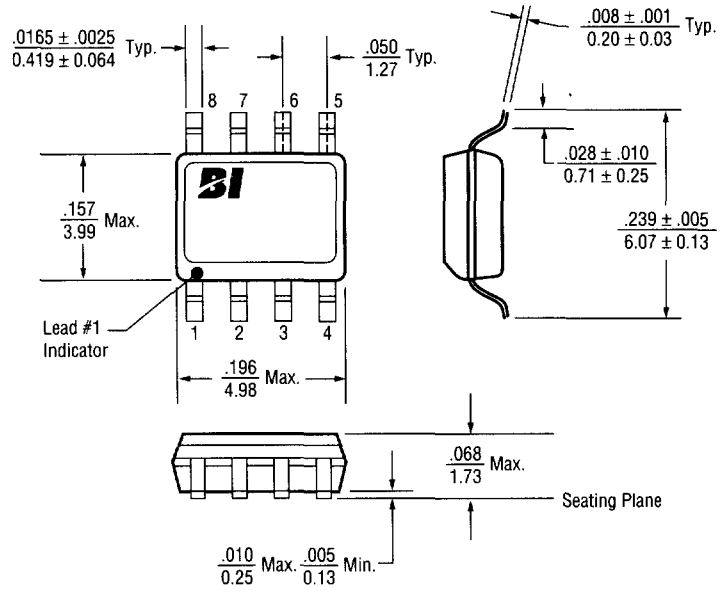
2dB	6dB	12dB
3dB	8dB	14dB
4dB	10dB	16dB

* Consult factory for other values.

POWER (WATTS) DISSIPATION AT 70° C

Model	Package
654	0.4

OUTLINE DIMENSIONS (Inch/mm)



Note: Leads are within .005/0.13 of true position.
Maximum allowable mold excursion = 0.006"

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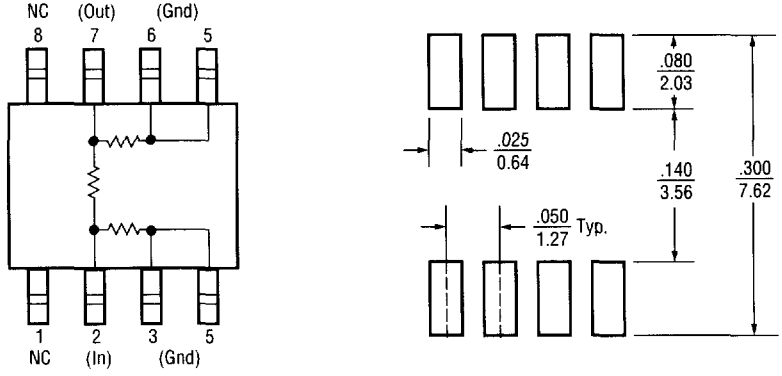
SCHEMATIC/SOLDER PAD LAYOUT (Inch/mm)

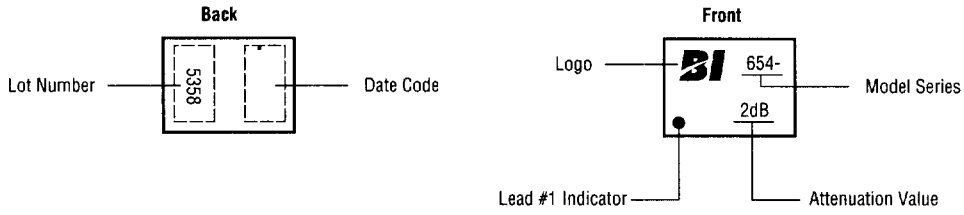


APPLICABLE DOCUMENTS

MIL-R-83401 — Resistor Networks, Fixed, Film, General Specifications

MIL-STD-202 — Test Methods for Electronics and Electrical Component Parts

TYPICAL PART MARKING



PACKAGING

Standard: Magazines

All units oriented with lead #1 to the same side.

Magazine:	Capacity	=	100 Units (8 pin)

Option: Embossed Tape and Reel

Reel:	Diameter	=	**7" Reel**	**13" Reel**
	Capacity	=	1,000 Units	2,500 Units

ORDERING INFORMATION

654 **2dB** **7**

Model Series

Packaging Option:
7 = 7" Tape & Reel
13 = 13" Tape & Reel
(No code used for Magazines.)

Attenuation Value
in Decibels