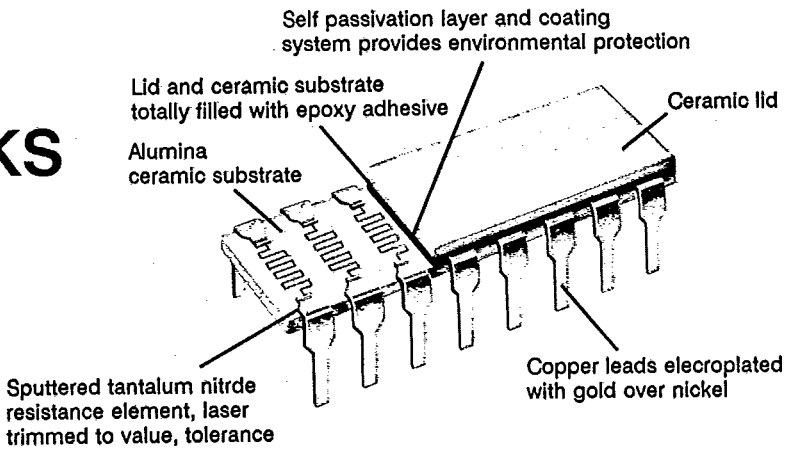
IRC

TANFILM DIP

RESISTOR NETWORKS



- MIL qualified to both MIL-R-83401/01 and MIL-R-83401/02
- MIL spec qualified to .1% Tol, .02% available
- MIL spec qualified to 50 ppm/°C, 25 ppm/°C available
- Superior TCR tracking to 2 ppm/°C
- Ratios available to 0.01%
- Special mechanical and electrical configurations

TaNFilm resistor networks are designed for use in applications requiring a high degree of reliability, stability, tight tolerance, close TCR tracking, and low noise. Our continuous feed, high vacuum sputtering process insures uniform properties from network to network. Precise state-of-the-art laser trimming enables us to easily zero in the tightest ratios. Gold-plated copper leads are thermal pulse bonded to large-area gold conductor pads on the ceramic substrate assuring the most reliable termination and long-term stability. Passivated Tantalum Nitride resistor material offers performance far superior to military specifications and excellent environmental protection.

The versatile nature of our photoetch process makes it readily adaptable to meet special customer requirements. Custom circuit designs and special mechanical configurations can be easily achieved with a modest set up charge. Full military screening is also available with all units.

SPECIFICATIONS:

MIL Qualified Resistance Values:
Schematic A: 100Ω to 100KΩ
Schematic B: 100Ω to 70KΩ
Higher and lower resistance values available
Std Resistance Tolerances:
.1%, .25%, .5%, 1%, 2%, .02% available
Temperature Coefficient of Resistance:
±25 ppm/°C, ±50 ppm/°C, ±100 ppm/°C, ±300 ppm/°C

TCR Tracking: 5 ppm/°C, except Models 1987 & 1998 below 500Ω (20 ppm/°C); 2 ppm/°C
Temperature Range:
-55°C to +150°C
Power Rating @ 70°C:

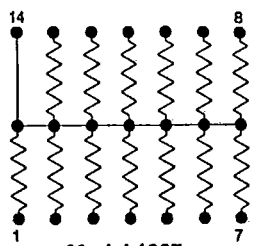
	Wattage	
Model	Resistor	Network
1987	.1	1.3
1998	.1	1.5
1989	.2	1.4
1999	.2	1.6

Noise: Less than -30 dB
Lead Material: Gold plated copper
Substrate Material: 99.5% pure alumina ceramic
Construction: Ceramic sandwich epoxy encapsulant

Custom Circuit and Special Testing Available

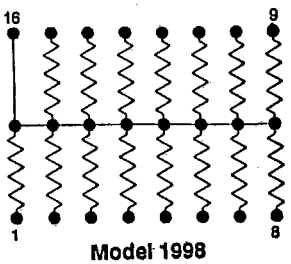
Contact factory for any special features required

STANDARD CIRCUITS:



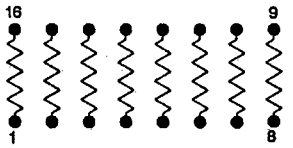
Model 1987

Schematic B



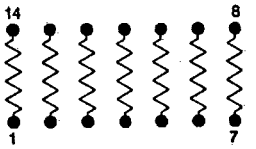
Model 1998

Schematic B



Model 1999

Schematic A



Model 1989

Schematic A

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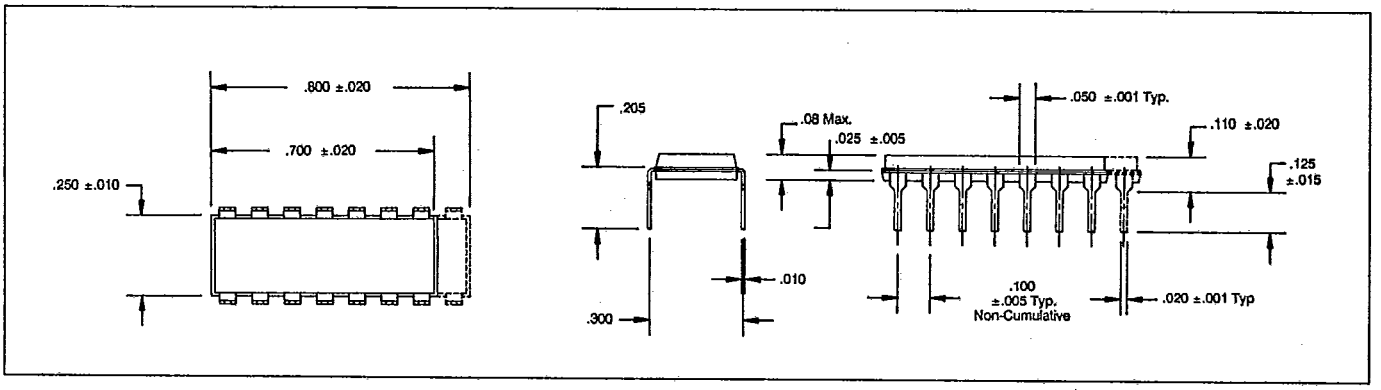
TANFILM DIP PERFORMANCE DATA:

Test Per MIL-R-83401	MIL-R-83401 Limits (ΔR%)			TaNFilm Test Data (ΔR%)	
	M	K	H	Maximum	Typical
Thermal Shock and Power Conditioning	0.70	.70	.50	.10	.02
Low Temperature Operation	0.50	.25	.10	.10	.02
Short Time Overload	0.50	.25	.10	.05	.02
Terminal Strength	0.25	.25	.25	.10	.02
Resistance to Soldering Heat	0.25	.25	.10	.10	.02
Moisture Resistance	0.50	.50	.40	.10	.02
Shock	0.25	.25	.25	.10	.02
Vibration	0.25	.25	.25	.10	.02
Life	2.00	.50	.50	.10	.02
High Temperature Exposure	1.00	.50	.20	.10	.02
Low Temperature Storage	0.50	.25	.10	.10	.02
25°C Double Load	2.00	.50	.50	.05	.02

DIMENSIONS - INCHES:



HOW TO ORDER

Sample Part No.

Model	Characteristic	Resistance	Absolute Tolerance Code	Ratio Tolerance to R_1
1999	06	1001	B	(if specified)

1989 7-resistor 14 Pin DIP, straight thru (MIL-R-83401-01, schematic A)

1999 8-resistor 16 Pin DIP, straight thru (MIL-R-83401-02, schematic A)

1987 13-resistor, 14 Pin DIP, one common lead (MIL-R-83401-01, schematic B)

1998 15-resistor, 16 Pin DIP, one common lead (MIL-R-83401-02, schematic B)

Characteristic

Code	Classification	TCR (ppm/°C)
01	Commercial Grade	±100
02	Commercial Grade	±50
03	Commercial Grade	±25
04	Military Screening	±300
05	Military Screening	±100
06	Military Screening	±50
07	Military Screening	±25

Resistance

Standard MIL resistance code

Example:
1001 = 1000Ω

Absolute/Ratio Tolerance Code

Standard MIL tolerance code

A ±.05%
B ±.1%
C ±.25%
D ±.50%
F ±1.0%
G ±2.0%
T ±.01%
Q ±.02%