

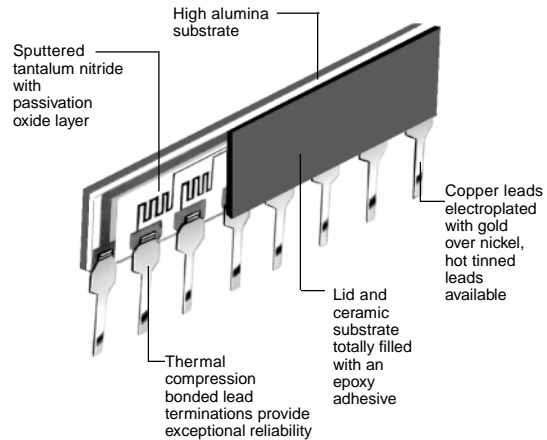
# TANFILM® ULTRA PRECISION SIP NETWORK MIL-PRF-83401 QUALIFIED AND COMMERCIAL

ISO-9001  
Registered



## 4700 SERIES

- High precision
- Low profile
- Absolute TCR to 10 ppm/°C
- Superior TCR tracking available to 2 ppm/°C
- 3 standard sizes
- Proven reliability
- Custom configurations available



IRC's 4700 series brings all of the TanFilm® precision network benefits to the latest low profile MIL SIP configuration. Our SIP product line is qualified to 50 ppm/°C TCR and 0.1% tolerance. Absolute TCRs to 10 ppm/°C and tolerances to 0.01% can also be achieved using the same processes and equipment. Custom circuit configuration and screening is readily available when required.

Our TanFilm® manufacturing process of sputtering tantalum nitride on to ceramic substrates ensures uniform temperature characteristics of all the resistors in the network. The resistance film is then passivated to improve its stability and make it virtually impervious to environmental elements.

When you need high precision and ultimate reliability in a limited space, the TanFilm® 4700 SIP series is the solution.

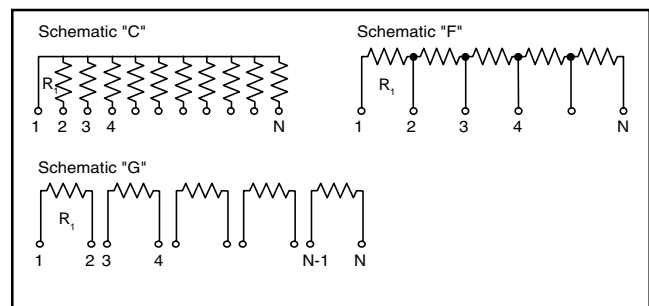
### SPECIFICATIONS:

<b>Resistance Ranges (ohms)</b>	<b>Mil Qualified</b> Schematic C: 100 to 100K Schematic G: 100 to 100K  <b>Commercial</b> Schematic C: 49.9 to 200K Schematic F: 20 to 150K Schematic G: 20 to 400K Higher and lower resistance values available
<b>Standard Resistance Tolerance (±%)</b>	0.05, 0.1, 0.25, 0.5, 1, 2 (0.01 available)
<b>Temperature Coefficient [TCR (ppm/°C)]</b>	<b>Mil Qualified:</b> ±50, ±100, ±300  <b>Commercial:</b> Available to ±15 ppm
<b>TCR Tracking</b>	5 ppm/°C (except Schematic C below 500 ohms 20 ppm/°C) 2 ppm/°C available
<b>Temperature Range</b>	-55°C to +125°C
<b>Noise Level</b>	Less than -30 db
<b>Lead Material</b>	Gold Plated Copper (hot tin/lead available)
<b>Substrate Material</b>	99.6% pure alumina ceramic
<b>Construction</b>	Lid and ceramic substrate totally filled with an epoxy adhesive

### POWER RATING AT 70°C:

Schematic	Resistor	Wattage		
		Network		
		6 Pin	8 Pin	10 Pin
C,F (commercial or military)	0.12	0.60	0.84	1.08
G Military	0.12	0.36	0.48	0.60
G Commercial	0.2	0.60	0.80	1.00

### STANDARD CIRCUITS:

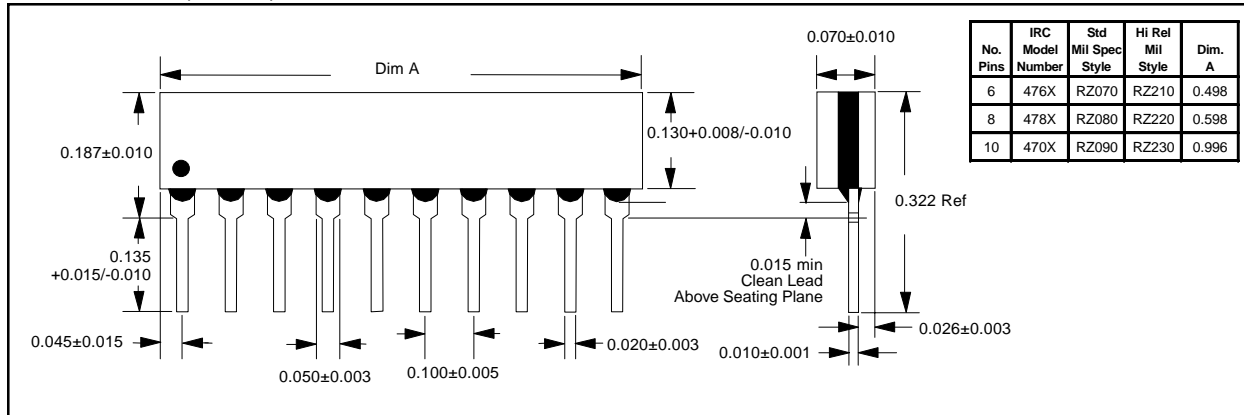


Consult factory for any special features required.  
Custom circuits and special testing available.

**4700 SERIES ENVIRONMENTAL TESTING:**

Test Per MIL-PRF-83401	MIL-PRF-83401 Limits (Delta R%)			TanFilm Test Data (Delta R%)	
	M	K	H	Max	Typical
Thermal Shock and Power Conditioning	0.7	0.7	0.5	0.10	0.02
Low Temperature Operation	0.5	0.25	0.1	0.05	0.02
Short Term Overload	0.5	0.25	0.1	0.1	0.02
Terminal Strength	0.25	0.25	0.1	0.1	0.02
Resistance to Solder Heat	0.25	0.25	0.1	0.1	0.02
Moisture Resistance	0.5	0.5	0.4	0.1	0.02
Shock	0.25	0.25	0.25	0.1	0.02
Vibration	0.25	0.25	0.25	0.1	0.02
Life	2.0	0.5	0.5	0.1	0.02
High Temperature Exposure	1.0	0.5	0.2	0.1	0.02
Low Temperature Storage	0.5	0.25	0.1	0.1	0.02
25°C Double Load	2.0	0.5	0.5	0.05	0.02

**DIMENSIONS (Inches):**



**HOW TO ORDER:**

Sample Part No.

**SIP - 4781 - 03 - 1001 B X**

Model

Model	Pins	Schematic	MIL Type
4761 4761HR	6	C	RZ070 RZ210
4768	6	F	N/A
4769 4769HR	6	G	R7070 RZ210
4781 4781HR	8	C	RZ080 RZ220
4788	8	F	N/A
4789 4789HR	8	G	RZ080 RZ220
4701 4701HR	10	C	RZ090 RZ230
4708	10	F	N/A
4709 4709HR	10	G	RZ090 RZ230

**Ratio Tolerance to R<sub>1</sub>**  
(if specified)

**Absolute Tolerance Code**  
A=±0.05%; B=±0.1%; C=±0.25%;  
D=±0.5%; F=±1.0%; G=±2.0%;  
J=±5%; Q=±0.02%; T=0.01%

**Resistance**  
Standard MIL resistance code.  
Example: 1001 = 1000 ohms

**Characteristic**

Code	Classification	TCR (ppm/°C)	Code	Classification	TCR (ppm/°C)
01	Commercial	100	06	MIL-PRF-83401	50
02	Commercial	50	07	Military Screened	25
03	Commercial	25	10	Commercial	20
04	MIL-PRF-83401	300	11	Commercial	15
05	MIL-PRF-83401	100	10	Commercial	10