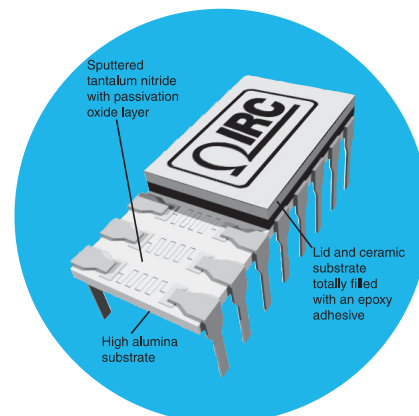


# TaNFilm® Precision DIP Network

## Commercial and MIL Qualified

### 1900 Series

- Inherent reliability
- MIL-PRF-83401 qualified
- Custom configuration available
- Bonded leads not susceptible to solder reflow problems
- Absolute tolerance to  $\pm 0.1\%$  / ratio tolerance to  $\pm 0.05\%$
- Absolute TCR to  $\pm 15\text{ppm}/^\circ\text{C}$  / ratio tracking to  $\pm 5\text{ppm}/^\circ\text{C}$



 All Pb-free parts comply with EU Directive 2011/65/EU (RoHS2)

The IRC 1900 Series is the ultimate combination of precision performance, reliability, and long term stability in a low profile, TaNFilm® DIP package. Rugged welded lead construction combined with the inherent passivation characteristics of tantalum nitride ensure superior ongoing performance over the installed life of the part.

Visit our website to view a graphical demonstration of IRC's TaNFilm® reliability and performance features.

## Electrical Data

Schematic	Resistance Range ( $\Omega$ )	Absolute Tolerance	Optional Ratio Tolerance	Absolute TCR ( $\text{ppm}/^\circ\text{C}$ )	Tracking TCR ( $\text{ppm}/^\circ\text{C}$ )	Military Characteristic	Element Power (mW)
<b>A Commercial</b>	10 - 49.9	F, G, J	F, G	$\pm 50; \pm 100; \pm 300$	$\pm 20$	N/A	200
	50.0 - 199	F, G, J	D, F, G	$\pm 25; \pm 50; \pm 100; \pm 300$	$\pm 10$		
	200 - 999	B, D, F, G, J	A, B, D, F, G	$\pm 25; \pm 50; \pm 100; \pm 300$	$\pm 5$		
	1.0K - 400K	B, D, F, G, J	A, B, D, F, G	$\pm 15; \pm 25; \pm 50; \pm 100; \pm 300$	$\pm 5$		
<b>A Military</b>	50 - 100K	B, D, F, G, J	N/A	N/A	N/A	H, K, M	
<b>B Commercial</b>	50 - 149	B, D, F, G, J	B, D, F, G	$\pm 300; \pm 100$	$\pm 50$	N/A	100
	150 - 249	B, D, F, G, J	B, D, F, G	$\pm 300; \pm 100; \pm 50$	$\pm 20$		
	250 - 999	B, D, F, G, J	B, D, F, G	$\pm 25; \pm 50; \pm 100; \pm 300$	$\pm 5$		
	1.0K - 200K	B, D, F, G, J	B, D, F, G	$\pm 15; \pm 25; \pm 50; \pm 100; \pm 300$	$\pm 5$		
<b>B Military</b>	50 - 70K	B, D, F, G, J	N/A	N/A	N/A	H, K, M	

## Package Specification Data

Schematic	Package Power (W)		Voltage Rating	Temperature Range	Substrate	Lead Finish	Noise
	14-pin	16-pin					
A	1.4	1.6	$\sqrt{PxR}$ not to exceed 100V	$-55^\circ\text{C}$ to $+150^\circ\text{C}$	99.6% Alumina	Gold Plate (60/40 Sn/Pb available)	$< -30\text{dB}$
B	1.3	1.5					

### General Note

TT Electronics reserves the right to make changes in product specification without notice or liability.  
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BI Technologies IRC Welwyn

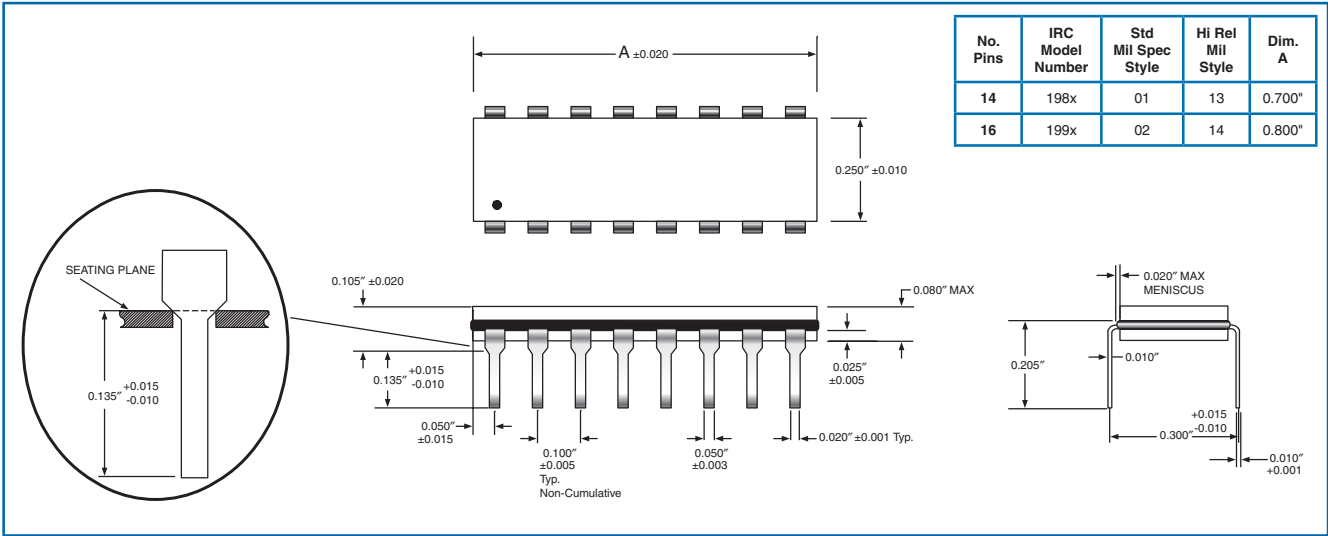
[www.ttelectronicsresistors.com](http://www.ttelectronicsresistors.com)

1900 Series

Environmental Data

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	0.1	0.02
Short-term Overload	0.5	0.25	0.1	0.05	0.02
Terminal Strength	0.25	0.25	0.25	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

Physical Data

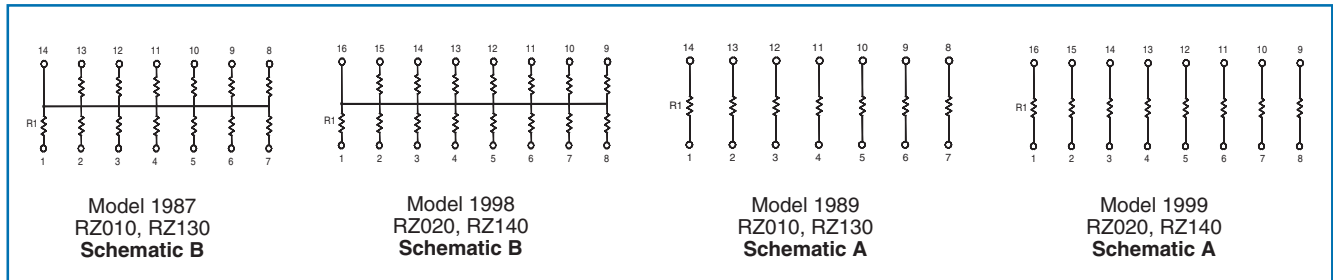


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## 1900 Series

## Schematic Data



## Commercial Ordering Data

Prefix	DIP	1999	03	1001	B	F
<b>Model</b>	1987 = 14-pin DIP, schematic B, gold terminations 1987SD = 14-pin DIP, schematic B, 60/40 Sn/Pb terminations 1989 = 14-pin DIP, schematic A, gold terminations 1989SD = 14-pin DIP, schematic A, 60/40 Sn/Pb terminations  1998 = 16-pin DIP, schematic B, gold terminations 1998SD = 16-pin DIP, schematic B, 60/40 Sn/Pb terminations 1999 = 16-pin DIP, schematic A, gold terminations 1999SD = 16-pin DIP, schematic A, 60/40 Sn/Pb terminations					
<b>Absolute TCR</b>	01 = $\pm 100\text{ppm}/^{\circ}\text{C}$ ; 02 = $\pm 50\text{ppm}/^{\circ}\text{C}$ ; 03 = $\pm 25\text{ppm}/^{\circ}\text{C}$ ; 11 = $\pm 15\text{ppm}/^{\circ}\text{C}$					
<b>Resistance</b>	Standard 4-digit MIL resistance code Example: 1001 = $1000\Omega$ ; 50R0 = $50\Omega$					
<b>Absolute Tolerance</b>	J = $\pm 5\%$ ; G = $\pm 2\%$ ; F = $\pm 1.0\%$ ; D = $\pm 0.5\%$ ; B = $\pm 0.1\%$					
<b>Optional Ratio Tolerance to <math>R_1</math></b>	F = $\pm 1.0\%$ ; D = $\pm 0.5\%$ ; C = $\pm 0.25\%$ ; B = $\pm 0.1\%$ ; A = $\pm 0.05\%$					

Custom schematics and screening available.  
Screening available for non-QPL values and tolerances. Contact factory for ordering information.

## MIL Screened Ordering Data (MIL-PRF-83401)

Prefix	M83401	01	K	1001	F	A
<b>Specification Sheet</b>	01 = 14-pin DIP 02 = 16-pin DIP 13 = 14-pin HI REL DIP 14 = 16-pin HI REL DIP					
<b>Characteristic</b>	M, K, H					
<b>Resistance</b>	Standard 4-digit MIL resistance code Example: 1001 = $1000\Omega$ ; 50R0 = $50\Omega$					
<b>Absolute Tolerance</b>	J = $\pm 5\%$ ; G = $\pm 2\%$ ; F = $\pm 1.0\%$ ; D = $\pm 0.5\%$ ; B = $\pm 0.1\%$					
<b>Schematic</b>	A = Isolated; B = Bussed Schematic  Standard lead termination is gold plate. Contact factory for optional 60/40 Sn/Pb solder dip finish.					

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# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

## TT Electronics:

[DIP-1989-02-2002-B](#) [DIP-1999-02-2002-D](#) [DIP-1999-02-4702-B](#) [DIP-1999-03-4992-D](#) [DIP-1999-02-1002-B](#) [DIP-1998-02-1003-D](#) [DIP-1989-02-1003-B](#)