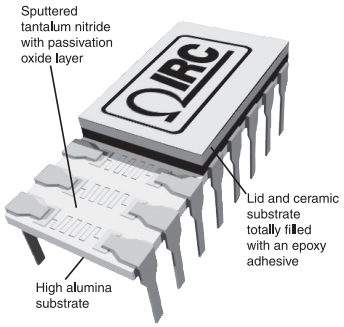
Resistors

TaNFilm® Precision DIP Network
Commercial and MIL Qualified

OBSOLETE



1900 Series

- Inherent reliability
- MIL-PRF-83401 qualified
- Custom configuration available
- Bonded leads not susceptible to solder reflow problems
- Absolute tolerance to ±0.1% / ratio tolerance to ±0.05%
- Absolute TCR to ±15ppm/°C / ratio tracking to ±5ppm/°C

All Pb-free parts comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

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 (Ω)	Absolute Tolerance	Optional Ratio Tolerance	Absolute TCR (ppm/°C)	Tracking TCR (ppm/°C)	Military Characteristic	Element Power (mW)
A Commercial	10 - 49.9	F, G, J	F, G	±50; ±100; ±300	±20	N/A	200
	50.0 - 199	F, G, J	D, F, G	±25; ±50; ±100; ±300	±10		
	200 - 999	B, D, F, G, J	A, B, D, F, G	±25; ±50; ±100; ±300	±5		
	1.0K - 400K	B, D, F, G, J	A, B, D, F, G	±15; ±25; ±50; ±100; ±300	±5		
A Military	50 - 100K	B, D, F, G, J	N/A	N/A	N/A	H, K, M	
B Commercial	50 - 149	B, D, F, G, J	B, D, F, G	±300; ±100	±50	N/A	100
	150 - 249	B, D, F, G, J	B, D, F, G	±300; ±100; ±50	±20		
	250 - 999	B, D, F, G, J	B, D, F, G	±25; ±50; ±100; ±300	±5		
	1.0K - 200K	B, D, F, G, J	B, D, F, G	±15; ±25; ±50; ±100; ±300	±5		
B Military	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
	8-pin	14-pin	16-pin					
A	0.8	1.4	1.6	$\sqrt{PxR}$ not to exceed 100V	-55°C to +150°C	99.6% Alumina	Gold Plate (60/40 Sn/Pb available)	<-30dB
B	0.7	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

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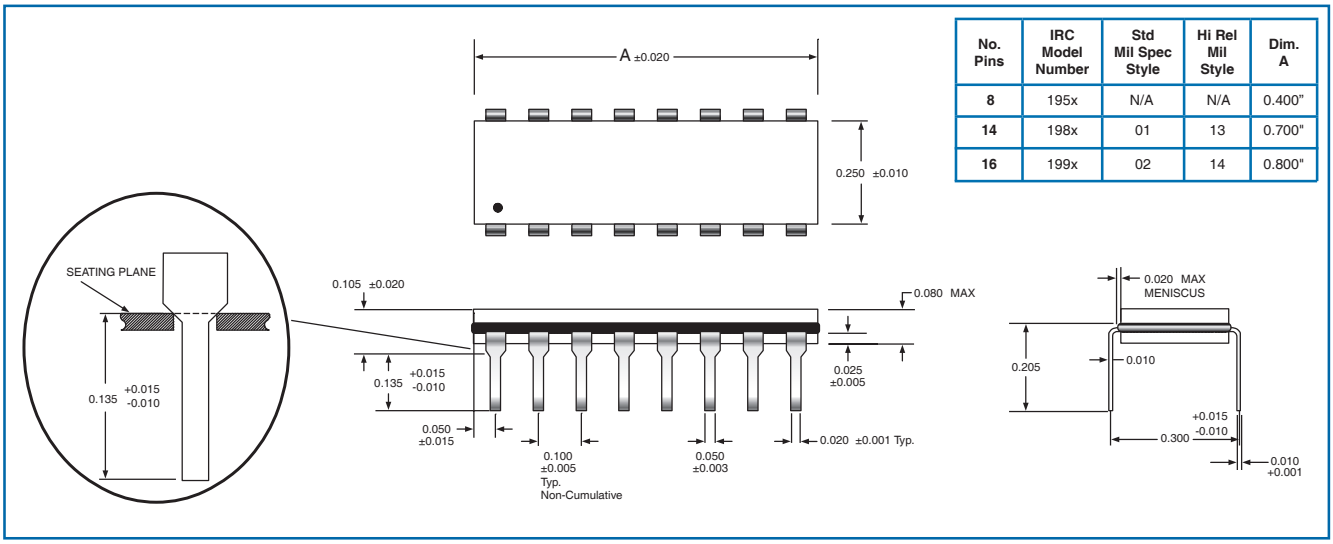
Environmental Data

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



No. Pins	IRC Model Number	Std Mil Spec Style	Hi Rel Mil Style	Dim. A
8	195x	N/A	N/A	0.400"
14	198x	01	13	0.700"
16	199x	02	14	0.800"

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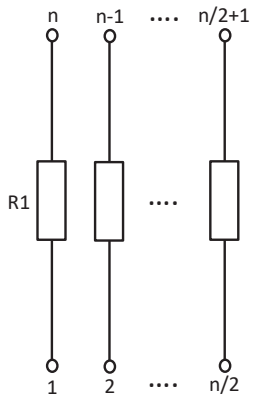
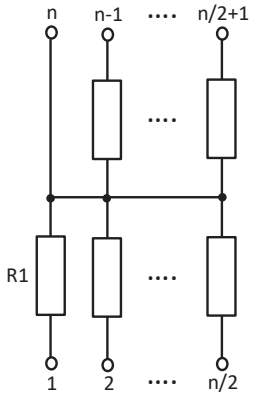
Schematic Data



Schematic A

Model 1959: n=8
Model 1989: n=14
Model 1999: n=16



Schematic B

Model 1954: n=8
Model 1987: n=14
Model 1998: n=16

Commercial and MIL-Screened (Non-QPL) Ordering Data

Prefix ..... DIP | 1999 | 03 | 1001 | B | F

Model

1954 = 8-pin DIP, schematic B, gold terminations
1954SD = 8-pin DIP, schematic B, 60/40 Sn/Pb terminations
1959 = 8-pin DIP, schematic A, gold terminations
1959SD = 8-pin DIP, schematic A, 60/40 Sn/Pb terminations

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

Absolute TCR

01 = ±100ppm/°C; 02 = ±50ppm/°C; 03 = ±25ppm/°C; 11 = ±15ppm/°C

MIL-PRF-83401 Group A Screening
04 = ±300ppm/°C Characteristic M; 05 = ±100ppm/°C Characteristic K
06 = ±50ppm/°C Characteristic H; 07 = ±25ppm/°C Characteristic H

Resistance

Standard 4-digit MIL resistance code
Example: 1001 = 1000Ω; 50R0=50Ω

Absolute Tolerance

J = ±5%; G = ±2%; F = ±1.0%; D = ±0.5%; B = ±0.1%

Optional Ratio Tolerance to R_1

F = ±1.0%; D = ±0.5%; C = ±0.25%; B = ±0.1%; A = ±0.05%

Custom schematics and screening available.

MIL-PRF-83401 Ordering Data

Prefix ..... M83401 | 01 | K | 1001 | F | A

Specification Sheet
01 = 14-pin DIP = RZ010
02 = 16-pin DIP = RZ020
13 = 14-pin HI REL DIP = RZ130
14 = 16-pin HI REL DIP = RZ140

Characteristic
M, K, H

Resistance

Standard 4-digit MIL resistance code
Example: 1001 = 1000Ω; 50R0=50Ω

Absolute Tolerance

J = ±5%; G = ±2%; F = ±1.0%; D = ±0.5%; B = ±0.1%

Schematic

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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