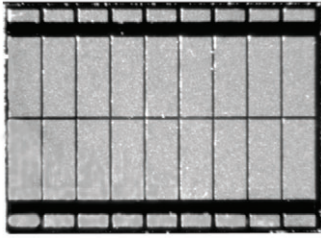


Wire Bondable Thin Film Filter Resistor Networks



Product may not be to scale

The RCN series combines resistor and capacitor technology on a single chip to provide filtering capability together with excellent stability. Specifications below are standard but may be changed and customized for the application and are available in widebody SOIC or DIP packages.

These chips are manufactured using Vishay (EFI) sophisticated thin film equipment and manufacturing technology. The RCNs are 100 % electrically tested and visually inspected to MIL-STD-883.

FEATURES

- Wire bondable
- Standard resistance range: 25 Ω and 50 Ω
- Standard capacitance range: 50 pF, 100 pF, 200 pF, 400 pF
- Resistance tolerance to 1 %, capacitance tolerance to 5 %
- Capacitor MOS/MNOS
- Chip size: 0.135" x 0.125"
- Case: 1210
- Resistor material: Tantalum nitride, self-passivating
- Oxidized silicon substrate
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



APPLICATIONS

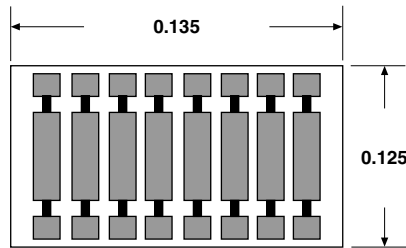
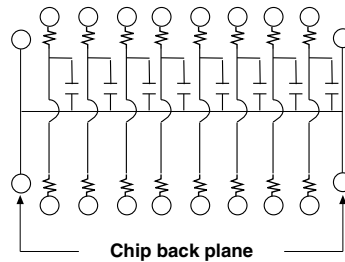
- The RCN filter chips are used for low pass filters, RFI and EMI, CMOS digital filters, ECL terminators and power supply filters.
- Contact our Sales Department for any special configurations or requirements that are needed.

TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES, AND TOLERANCES

PARAMETER	VALUE	UNIT
Total Resistance Range	25, 50	Ω
Standard Capacitance Range	50, 100, 200, 400	pF
Standard Tolerances	$\pm 0.01, \pm 0.1, \pm 1$	%
TCR	± 100	ppm/ $^{\circ}$ C
Absolute TCC	$+ 45 \pm 75$	ppm/ $^{\circ}$ C

STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	VALUE	UNIT
Noise, MIL-STD-202, Method 308 100 Ω to 250 k Ω < 100 Ω or > 251 k Ω	-35 typ. -20 typ.	dB
Moisture Resistance, MIL-STD-202, Method 106	± 0.5 max. $\Delta R/R$	%
Stability, 100 h, +125 $^{\circ}$ C, 50 mW/Res, at W_{VDC}	± 0.5 max. $\Delta R/R$ ± 2.0 max. $\Delta R/R$	%
Operating Temperature Range	-55 to +125	$^{\circ}$ C
Thermal Shock, MIL-STD-202, Method 107, Test Condition F	± 0.1 max. $\Delta R/R$	%
High Temperature Exposure, +150 $^{\circ}$ C, 1000 h	± 0.2 max. $\Delta R/R$	%
Insulation Resistance	10^9 min.	
Operating Voltage	25 max.	V
DC Power Rating at -55 $^{\circ}$ C to +125 $^{\circ}$ C (100 V max.)	0.05	W
5 x Rated Power Short-Time Overload, +25 $^{\circ}$ C, 5 s (100 V max.)	± 0.5 max. $\Delta R/R$	%

DIMENSIONS in inches

SCHEMATIC


MECHANICAL SPECIFICATIONS	
PARAMETER	VALUE
Chip Size	0.135" x 0.125" ± 0.005" (3.429 mm x 3.175 mm ± 0.127 mm)
Chip Thickness	0.010" ± 0.002" (0.254 mm ± 0.05 mm)
Chip Substrate Material	Oxidized silicon, 10 kÅ minimum SiO ₂
Resistor Material	Tantalum nitride, self-passivating
Bonding Pad Size	0.005" x 0.007" (0.127 mm x 0.178 mm)
Number of Pads	16 (8 x RC)
Pad Material	10 kÅ minimum aluminum
Backing	3 kÅ minimum gold

Options: gold bonding pads 15 kÅ minimum thickness. Consult Applications Engineer

GLOBAL PART NUMBER INFORMATION												
Custom Global Part Number: RCN-124-1521 WS												
Custom Global Part Number Description: Custom Resistor / Capacitor Network												
R	C	N	-	X	X	X	-	X	X	X	X	X
MODEL				VEFI ASSIGNED NUMBER							PACK CODE	
											WS = waffle pack, 100 min. 1 mult ST = diced on tape	



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.