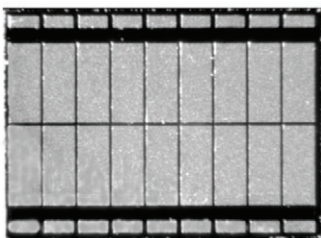


## Wire Bondable Thin Film Filter Resistor Networks



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  $\Omega$  and 50  $\Omega$
- 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](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

### APPLICATIONS

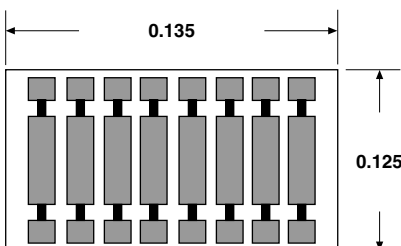
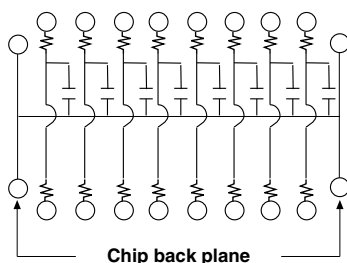
- The RCN filter chips are used for low pass filters, RFI and EMI, CMOS digital filters, ECL terminators and power supply filters.
- Contact our Sales Department for any special configurations or requirements that are needed.

### TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES, AND TOLERANCES

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

### STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	VALUE	UNIT
Noise, MIL-STD-202, Method 308 100 $\Omega$ to 250 k $\Omega$ < 100 $\Omega$ or > 251 k $\Omega$	-35 typ. -20 typ.	dB
Moisture Resistance, MIL-STD-202, Method 106	$\pm 0.5$ max. $\Delta R/R$	%
Stability, 100 h, +125 $^{\circ}$ C, 50 mW/Res, at $W_{VDC}$	$\pm 0.5$ max. $\Delta R/R$ $\pm 2.0$ max. $\Delta R/R$	%
Operating Temperature Range	-55 to +125	$^{\circ}$ C
Thermal Shock, MIL-STD-202, Method 107, Test Condition F	$\pm 0.1$ max. $\Delta R/R$	%
High Temperature Exposure, +150 $^{\circ}$ C, 1000 h	$\pm 0.2$ 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.)	$\pm 0.5$ max. $\Delta R/R$	%

**DIMENSIONS** in inches

**SCHEMATIC**


MECHANICAL SPECIFICATIONS	
PARAMETER	VALUE
Chip Size	0.135" x 0.125" $\pm$ 0.005" (3.429 mm x 3.175 mm $\pm$ 0.127 mm)
Chip Thickness	0.010" $\pm$ 0.002" (0.254 mm $\pm$ 0.05 mm)
Chip Substrate Material	Oxidized silicon, 10 kÅ minimum SiO <sub>2</sub>
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	
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px;">R</div> <div style="border: 1px solid black; padding: 2px 5px;">C</div> <div style="border: 1px solid black; padding: 2px 5px;">N</div> <div style="border: 1px solid black; padding: 2px 5px;">-</div> <div style="border: 1px solid black; padding: 2px 5px;">X</div> <div style="border: 1px solid black; padding: 2px 5px;">X</div> <div style="border: 1px solid black; padding: 2px 5px;">X</div> <div style="border: 1px solid black; padding: 2px 5px;">-</div> <div style="border: 1px solid black; padding: 2px 5px;">X</div> <div style="border: 1px solid black; padding: 2px 5px;">X</div> <div style="border: 1px solid black; padding: 2px 5px;">X</div> <div style="border: 1px solid black; padding: 2px 5px;">X</div> <div style="border: 1px solid black; padding: 2px 5px;">X</div> <div style="border: 1px solid black; padding: 2px 5px;">X</div> </div>	<div style="border: 1px solid black; padding: 5px;"> <div style="display: flex; justify-content: space-between;"> <div>MODEL</div> <div>VEFI ASSIGNED NUMBER</div> <div>PACK CODE</div> </div> <div style="margin-top: 10px;"> <b>WS</b> = waffle pack, 100 min. 1 mult  <b>ST</b> = diced on tape </div> </div>



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