

## Molded, SOT-23 Thin Film Surface Mount Resistor/Capacitor Network



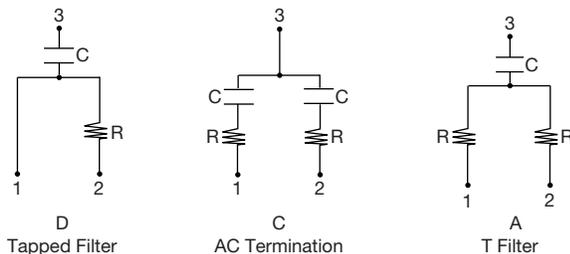
Vishay's R/C Network, packaged in the standard SOT-23, can be strategically placed on your PC board to do localized filtering. The R/C Network can be located at the point of emission before transients are carried through the design.

The sophisticated process of integrating the Resistor and Capacitor on a single substrate provides you with higher performance and more consistent results over discrete components. A real estate savings will also be gained.

Applications include EMI/RFI suppression and AC termination. These networks, in the SOT-23, along with Vishay's high component count R Networks and R/C Networks in a variety of standard IC packages, provides you with the exact solution for your redesign or new design.

Visit our website for the total picture on available R Networks and R/C Networks from our guaranteed stock program.

### SCHEMATIC



### FEATURES

- Resistor and capacitor **integrated** into a Thin Film network
- Filters at the source of emissions
- More consistent performance characteristics than discretés
- Compliant to RoHS Directive 2002/95/EC
- Halogen-free according to IEC 61249-2-21 definition



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

### TYPICAL PERFORMANCE

	TCR	TOLERANCE
<b>RESISTOR</b>	200	10
	TCC	TOLERANCE
<b>CAPACITOR</b>	200	20

### VR TOOLED VALUES (1)

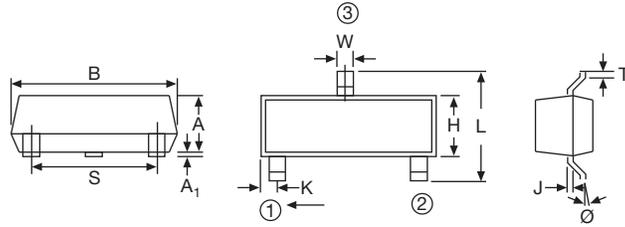
SCHEMATIC	R ( $\Omega$ )	C (pF)
D	33	47
C	47	47
A	100	80

#### Note

- Consult application engineering for custom values

### STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
<b>Material</b>	Tantalum nitride	-
<b>Pin/Lead Number</b>	3	-
<b>Resistance Range</b>	10 $\Omega$ to 500 $\Omega$	-
<b>TCR: Absolute</b>	$\pm 200$ ppm/ $^{\circ}$ C	0 $^{\circ}$ C to + 70 $^{\circ}$ C
<b>TCR: Tracking</b>	-	-
<b>Tolerance: Absolute</b>	$\pm 10$ % standard (R), $\pm 20$ % standard (C)	At 1 MHz and $V_{RMS}$ over + 10 $^{\circ}$ C to + 70 $^{\circ}$ C
<b>Power Rating: Resistor</b>	100 mW	-
<b>Power Rating: Package</b>	1 W	at + 70 $^{\circ}$ C
<b>Stability: Ratio</b>	-	-
<b>Operating Temperature Range</b>	0 $^{\circ}$ C to + 70 $^{\circ}$ C	-
<b>Storage Temperature Range</b>	- 55 $^{\circ}$ C to + 125 $^{\circ}$ C	-
<b>Capacitance Range</b>	10 pF to 80 pF	-
<b>ESD Protection</b>	-	-
<b>Breakdown Voltage</b>	25 V to 45 V	-

**DIMENSIONS** in inches and millimeters


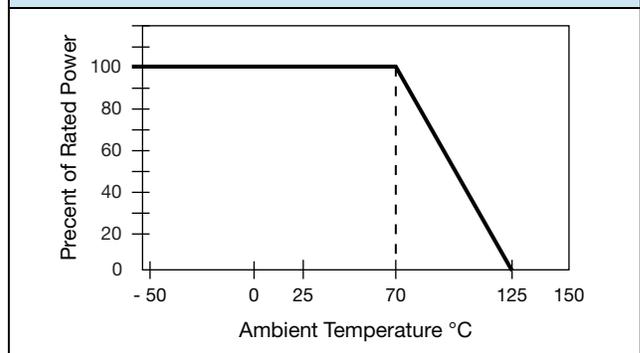
DIMENSION	JEDEC STANDARD TO-236			
	INCHES		MILLIMETERS	
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
A	0.027	0.040	0.70	1.02
A <sub>1</sub>	0.001	0.004	0.02	0.15
B	0.105	0.120	2.67	3.04
S	0.071	0.079	1.80	2.00
W	0.015	0.021	0.38	0.54
L	0.083	1.03	2.10	2.64
H	0.047	0.055	1.20	1.40
T	0.050	0.157	0.13	0.40
J	0.003	0.008	0.089	0.15
K	0.017	0.022	0.44	0.55
Ø	0	8°	0	8°

**IMPRINTING**

	SCHEMATIC
VRA	AA
VRC	AC
VRD	AD

**MECHANICAL SPECIFICATIONS**

Resistive Element	Tantalum nitride
Capacitive Material	Thin film
Substrate Material	Silicon
Body	Molded epoxy
Terminals	Copper alloy
Plating	100 % matte Sn
Lead Coplanarity	0.0005"
Marking Resistance to Solvents	Permanency testing per MIL-STD-202, method 215

**DERATING CURVE**

**PACKAGING INFORMATION**

MODEL	LEADS	TAPE AND REEL
VR	3	3000



**GLOBAL PART NUMBER INFORMATION**

New Global Part Numbering: **VRD330K470MTF**

<b>V</b>	<b>R</b>	<b>D</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>K</b>	<b>4</b>	<b>7</b>	<b>0</b>	<b>M</b>	<b>T</b>	<b>F</b>
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GLOBAL MODEL	SCHEMATICS	RESISTANCE AND TOLERANCE/ CAPACITANCE AND TOLERANCE	PACKAGING
<b>VR</b>	<b>D</b> = Tapped filter <b>C</b> = AC termination <b>A</b> = T filter	<b>xxxK/yyyM</b>  First 2 digits are significant figures. Last digit specifies number of zeros to follow e.g. 330K/470M = 330 W 10 % 47 pF 20 % K = 10 % M = 20 %	<b>UF</b> = TUBED  TAPE AND REEL <b>TF</b> = Full reels

Historical Part Number example: **VRD330K479MT/R** (for reference purposes only)

<b>VR</b>	<b>D</b>	<b>330K</b>	<b>470M</b>	<b>T/R</b>
MODEL	SCHEMATIC	RESISTANCE	TOLERANCE	PACKAGING



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