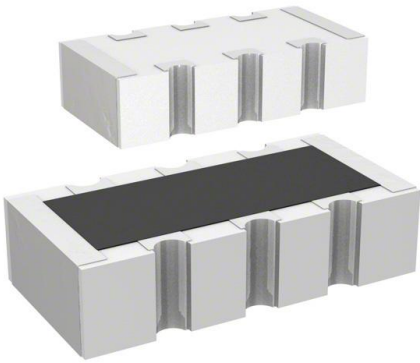


RAVF104DFT680R Datasheet

www.digi-electronics.com



<https://www.DiGi-Electronics.com>

| | |
|------------------------------|--|
| DiGi Electronics Part Number | RAVF104DFT680R-DG |
| Manufacturer | Stackpole Electronics Inc |
| Manufacturer Product Number | RAVF104DFT680R |
| Description | RES ARRAY 4 RES 680 OHM 0804 |
| Detailed Description | 680 Ohm $\pm 1\%$ 62.5mW Power Per Element Isolated 4 Resistor Network/Array $\pm 200\text{ppm}/^\circ\text{C}$ 0804, Conv ex, Long Side Terminals |

This model RAUF104DFT680R is available at DiGi Electronics.

DiGi Electronics offers a global database of semiconductor and electronic component datasheets.

We welcome your inquiries regarding pricing, lead time, or other product-related questions.

 [Request a Quote](#)

 [Datasheet Search](#)



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.

Purchase and inquiry

Manufacturer Product Number:

RAVF104DFT680R

Series:

RAVF

Circuit Type:

Isolated

Tolerance:

±1%

Resistor Matching Ratio:

-

Number of Pins:

8

Temperature Coefficient:

±200ppm/°C

Applications:

Automotive AEC-Q200

Package / Case:

0804, Convex, Long Side Terminals

Size / Dimension:

0.079" L x 0.039" W (2.00mm x 1.00mm)

Manufacturer:

Stackpole Electronics Inc

Product Status:

Active

Resistance (Ohms):

680

Number of Resistors:

4

Resistor-Ratio-Drift:

-

Power Per Element:

62.5mW

Operating Temperature:

-55°C ~ 155°C

Mounting Type:

Surface Mount

Supplier Device Package:

-

Height - Seated (Max):

0.020" (0.50mm)

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8533.21.0020

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

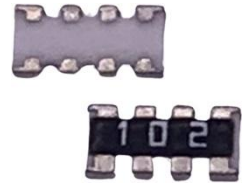
RAVF Series

Convex Termination Thick Film Chip Resistor Array

Stackpole Electronics, Inc.
Resistive Product Solutions

Features:

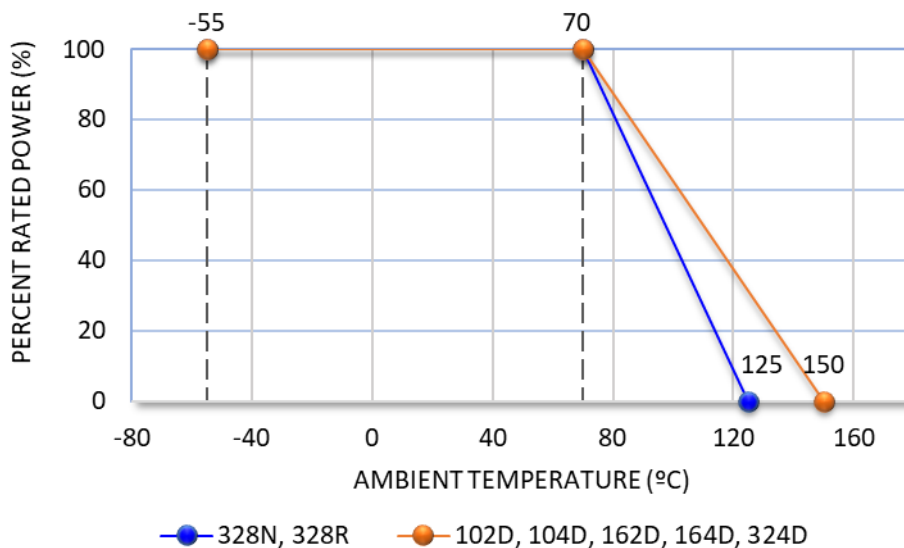
- Square corner construction standard
- RAVF 324D is standard with scalloped corner
- RoHS compliant, REACH compliant and halogen free
- Sizes 102D, 104D and 164D are AEC-Q200 compliant

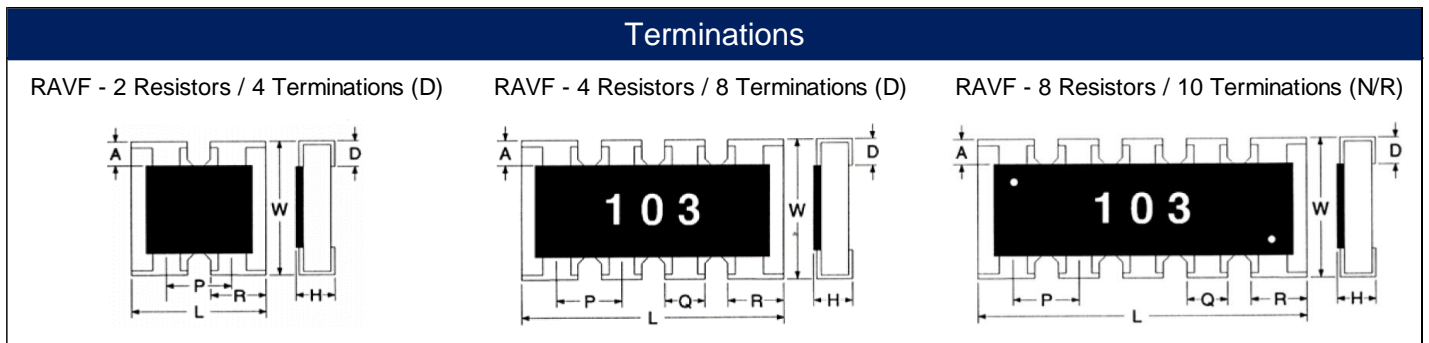
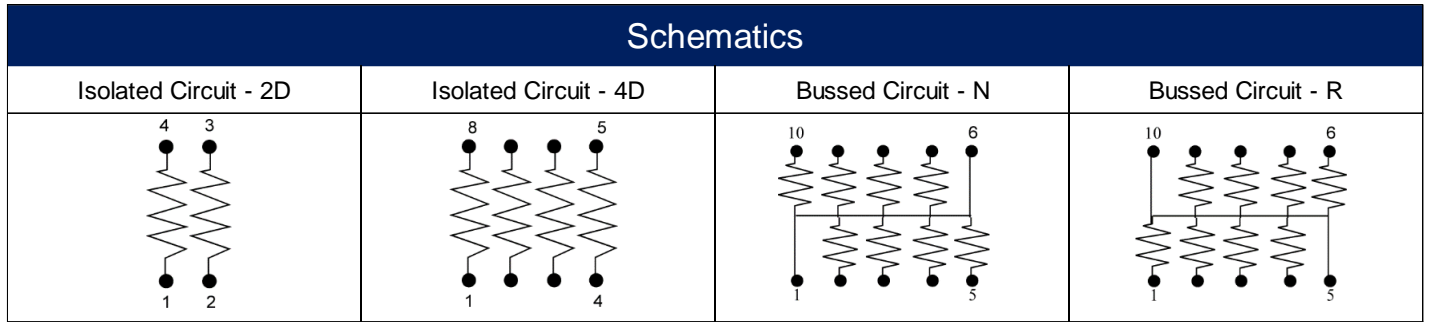


| Electrical Specifications | | | | | | |
|--|---------------------------------------|--|------------------------------|--------------|-------------------------------|----------|
| Type/Code, # of Elements, Circuit Type | Power Rating (W) (per element) @ 70°C | Maximum Working Voltage (V) ⁽¹⁾ | Maximum Overload Voltage (V) | TCR (ppm/°C) | Ohmic Range (Ω) and Tolerance | |
| | | | | | 1% | 2%, 5% |
| RAVF102D | 0.063 Jumper: 1A | 25 | 50 | ± 400 | - | 1 - 9.1 |
| | | | | ± 200 | 10 - 1M | |
| RAVF104D | 0.063 Jumper: 1A | 25 | 50 | ± 400 | - | 1 - 9.1 |
| | | | | ± 200 | 10 - 1M | |
| RAVF162D | 0.063 Jumper: 1A | 50 | 100 | ± 200 | 10 - 1M | 1 - 1M |
| | | | | - | - | 0.05 max |
| RAVF164D | 0.1 Jumper: 1A | 50 | 100 | ± 400 | - | 1 - 9.1 |
| | | | | ± 200 | 10 - 1M | 10 - 1M |
| | | | | | 0.025 max | 0.05 max |
| RAVF324D | 0.125 | 200 | 400 | ± 200 | 22 - 1M | 10 - 1M |
| RAVF328N | 0.063 | 25 | 50 | ± 200 | - | 22 - 1M |
| RAVF328R | 0.063 | 25 | 50 | ± 200 | - | 22 - 1M |

(1) Lesser of $\sqrt{P \cdot R}$ or maximum working voltage.

Power Derating Curve:





Mechanical Specifications

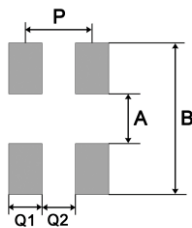
| Type/Code # of Elements Circuit Type | L Body Length | W Body Width | H Body Height | P Element Spacing | Q Termination Width | R Termination Width | D Bottom Termination | A Top Termination | Unit |
|--|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|---|------------------------------|--------------|
| RAVF102D | 0.039 ± 0.004 1.00 ± 0.10 | 0.039 ± 0.004 1.00 ± 0.10 | 0.014 ± 0.004 0.35 ± 0.10 | 0.026 ± 0.039 0.67 ± 1.00 | - - | 0.013 ± 0.004 0.34 ± 0.10 | 0.010 ± 0.039 0.25 ± 1.00 | 0.006 ± 0.004 0.15 ± 0.10 | Inches mm |
| RAVF104D | 0.079 ± 0.008 2.00 ± 0.20 | 0.039 ± 0.006 1.00 ± 0.15 | 0.014 ± 0.006 0.35 ± 0.15 | 0.020 ± 0.006 0.50 ± 0.15 | 0.012 ± 0.004 0.30 ± 0.10 | 0.017 ± 0.004 0.43 ± 0.10 | 0.008 +0.006/-0.004 0.20 +0.15/-0.10 | 0.008 ± 0.004 0.20 ± 0.10 | Inches mm |
| RAVF162D | 0.063 ± 0.006 1.60 ± 0.15 | 0.063 ± 0.006 1.60 ± 0.15 | 0.020 ± 0.006 0.50 ± 0.15 | 0.031 ± 0.002 0.80 ± 0.05 | - - | 0.024 ± 0.006 0.60 ± 0.15 | 0.012 ± 0.006 0.30 ± 0.15 | 0.012 ± 0.006 0.30 ± 0.15 | Inches mm |
| RAVF164D | 0.126 ± 0.008 3.20 ± 0.20 | 0.063 ± 0.008 1.60 ± 0.20 | 0.020 ± 0.004 0.50 ± 0.10 | 0.031 ± 0.008 0.80 ± 0.20 | 0.020 ± 0.006 0.50 ± 0.15 | 0.024 ± 0.006 0.61 ± 0.15 | 0.012 ± 0.008 0.30 ± 0.20 | 0.012 ± 0.008 0.30 ± 0.20 | Inches mm |
| RAVF324D | 0.201 ± 0.009 5.10 ± 0.22 | 0.122 ± 0.008 3.10 ± 0.20 | 0.022 ± 0.006 0.55 ± 0.15 | 0.051 ± 0.008 1.30 ± 0.20 | 0.031 ± 0.008 0.80 ± 0.20 | 0.031 ± 0.008 0.80 ± 0.20 | 0.022 ± 0.012 0.55 ± 0.30 | 0.020 ± 0.008 0.50 ± 0.20 | Inches mm |
| RAVF328N | 0.126 ± 0.006 3.20 ± 0.15 | 0.063 ± 0.006 1.60 ± 0.15 | 0.022 ± 0.004 0.55 ± 0.10 | 0.025 ± 0.002 0.64 ± 0.05 | 0.013 ± 0.006 0.34 ± 0.15 | 0.019 ± 0.006 0.49 ± 0.15 | 0.010 ± 0.006 0.25 ± 0.15 | 0.012 ± 0.008 0.30 ± 0.20 | Inches mm |
| RAVF328R | 0.126 ± 0.006 3.20 ± 0.15 | 0.063 ± 0.006 1.60 ± 0.15 | 0.022 ± 0.004 0.55 ± 0.10 | 0.025 ± 0.002 0.64 ± 0.05 | 0.013 ± 0.006 0.34 ± 0.15 | 0.019 ± 0.006 0.49 ± 0.15 | 0.010 ± 0.006 0.25 ± 0.15 | 0.012 ± 0.008 0.30 ± 0.20 | Inches mm |

Performance Characteristics

| Test | Test Result (JIS C 5202) |
|------------------------------|--------------------------|
| Load Life in Moisture | ±3% |
| Temperature cycle | ±1% |
| Load Life | ±3% |
| Resistance to Soldering heat | ±1% |
| Terminal Adhesion | ±1% |
| Short Time Overload | ±2% |

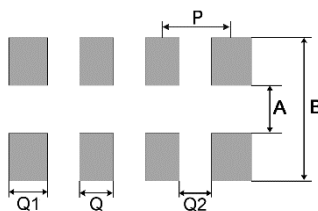
Operating temperature range is -55 to +155°C, except for RA VF328N and RA VF328R
 Operating temperature range for RA VF328N and RA VF328R is -55°C to +125°C

Recommended Pad Layout - 102D/162D



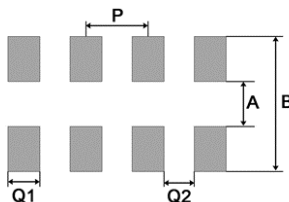
| Type/Code | A | B | P | Q1 | Q2 | Unit |
|-----------|---------------|---------------|---------------|---------------|---------------|--------------|
| RAVF102D | 0.020 0.50 | 0.079 2.00 | 0.026 0.67 | 0.013 0.33 | 0.013 0.34 | Inches mm |
| RAVF162D | 0.039 1.00 | 0.102 2.60 | 0.031 0.80 | 0.016 0.40 | 0.016 0.40 | Inches mm |

Recommended Pad Layout - 104D



| Type/Code | A | B | P | Q | Q1 | Q2 | Unit |
|-----------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|
| RAVF104D | 0.020 0.50 | 0.079 2.00 | 0.020 0.50 | 0.012 0.30 | 0.016 0.40 | 0.008 0.20 | Inches mm |

Recommended Pad Layout - 164D/324D



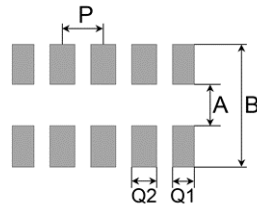
| Type/Code | A | B | P | Q1 | Q2 | Unit |
|-----------|---------------|---------------|---------------|---------------|---------------|--------------|
| RAVF164D | 0.039 1.00 | 0.102 2.60 | 0.031 0.80 | 0.016 0.40 | 0.016 0.40 | Inches mm |
| RAVF324D | 0.079 2.00 | 0.187 4.75 | 0.051 1.30 | 0.035 0.90 | 0.015 0.38 | Inches mm |

RAVF Series

Convex Termination Thick Film Chip Resistor Array

Stackpole Electronics, Inc.
Resistive Product Solutions

Recommended Pad Layout - 328R



| Type/Code | A | B | P | Q1 | Q2 | Unit |
|-----------|---------------|---------------|---------------|---------------|---------------|--------------|
| RAVF328R | 0.031 0.80 | 0.122 3.10 | 0.025 0.64 | 0.013 0.34 | 0.018 0.45 | Inches mm |

Recommended Solder Profile

This information is intended as a reference for solder profiles for Stackpole resistive components. These profiles should be compatible with most soldering processes. These are only recommendations. Actual numbers will depend on board density, geometry, packages used, etc., especially those cells labeled with “**”.

100% Matte Tin / RoHS Compliant Terminations

Soldering iron recommended temperatures: 330 to 350°C with minimum duration.
Maximum number of reflow cycles: 3.

Wave Soldering

| Description | Maximum | Recommended | Minimum |
|--------------------|------------|-------------|------------|
| Preheat Time | 80 seconds | 70 seconds | 60 seconds |
| Temperature Diff. | 140°C | 120°C | 100°C |
| Solder Temp. | 260°C | 250°C | 240°C |
| Dwell Time at Max. | 10 seconds | 5 seconds | * |
| Ramp DN (°C/sec) | N/A | N/A | N/A |

Temperature Diff. = Difference between final preheat stage and soldering stage.

Convection IR Reflow

| Description | Maximum | Recommended | Minimum |
|--------------------|-------------|-------------|------------|
| Ramp Up (°C/sec) | 3°C/sec | 2°C/sec | * |
| Dwell Time > 217°C | 150 seconds | 90 seconds | 60 seconds |
| Solder Temp. | 260°C | 245°C | * |
| Dwell Time at Max. | 30 seconds | 15 seconds | 10 seconds |
| Ramp DN (°C/sec) | 6°C/sec | 3°C/sec | * |

Recommended Resistor Reflow Profile



RoHS Compliance

Stackpole Electronics has joined the worldwide effort to reduce the amount of lead in electronic components and to meet the various regulatory requirements now prevalent, such as the European Union's directive regarding "Restrictions on Hazardous Substances" (RoHS 3). As part of this ongoing program, we periodically update this document with the status regarding the availability of our compliant components. All our standard part numbers are compliant to EU Directive 2011/65/EU of the European Parliament as amended by Directive (EU) 2015/863/EU as regards the list of restricted substances.

RoHS Compliance Status

| Standard Product Series | Description | Package / Termination Type | Standard Series RoHS Compliant | Lead-Free Termination Composition | Lead-Free Mfg. Effective Date (Std Product Series) | Lead-Free Effective Date Code (YY/WW) |
|-------------------------|---|----------------------------|--------------------------------|-----------------------------------|--|---------------------------------------|
| RAVF | Convex Termination Thick Film Chip Resistor Array | SMD | YES(1) | 100% Matte Sn over Ni | Jan-04 (Japan) Jul-04 (Taiwan) | 04/01 04/27 |

Note (1): RoHS Compliant by means of exemption 7c-l.

"Conflict Metals" Commitment

We at Stackpole Electronics, Inc. are joined with our industry in opposing the use of metals mined in the "conflict region" of the eastern Democratic Republic of the Congo (DRC) in our products. Recognizing that the supply chain for metals used in the electronics industry is very complex, we work closely with our own suppliers to verify to the extent possible that the materials and products we supply do not contain metals sourced from this conflict region. As such, we are in compliance with the requirements of Dodd-Frank Act regarding Conflict Minerals.

Compliance to "REACH"

We certify that all passive components supplied by Stackpole Electronics, Inc. are SVHC (Substances of Very High Concern) free and compliant with the requirements of EU Directive 1907/2006/EC, "The Registration, Evaluation, Authorization and Restriction of Chemicals", otherwise referred to as REACH. Contact us for complete list of REACH Substance Candidate List.

Environmental Policy

It is the policy of Stackpole Electronics, Inc. (SEI) to protect the environment in all localities in which we operate. We continually strive to improve our effect on the environment. We observe all applicable laws and regulations regarding the protection of our environment and all requests related to the environment to which we have agreed. We are committed to the prevention of all forms of pollution.

How to Order



| Product Series | | Size | | Tolerance ⁽¹⁾ | | | Packaging | | | | Resistance Value |
|----------------|--------------------|------|-------|--------------------------|--------|-------|-----------|---------------|------------|----------|---|
| Code | Description | Code | W | Code | Tol | Value | Code | Description | Size | Quantity | |
| RAVF | Convex Termination | 102D | 0.063 | F | 1% | E24 | T | Tape and Reel | 102D, 104D | 10000 | Four characters with the multiplier used as the decimal holder. 10 ohm = 10R0 10.2 Kohm = 10K2 1 Mohm = 1M00 Zero ohm jumper = 0R00 |
| | | 104D | 0.063 | G | 2% | | | | 162D, 164D | 5000 | |
| | | 162D | 0.063 | J | 5% | | | | 328N, 328R | | |
| | | 164D | 0.1 | Z | jumper | | | | 324D | 4000 | |
| | | 324D | 0.125 | | | | | | | | |
| | | 328N | 0.063 | | | | | | | | |
| | | 328R | 0.063 | | | | | | | | |

Note (1): 1% tolerance is available in E24 values only.
E96 values are generally not available. Contact Stackpole for details.

OUR CERTIFICATE

DiGi provide top-quality products and perfect service for customer worldwide through standardization, technological innovation and continuous improvement. DiGi through third-party certification, we strictly control the quality of products and services. Welcome your RFQ to

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