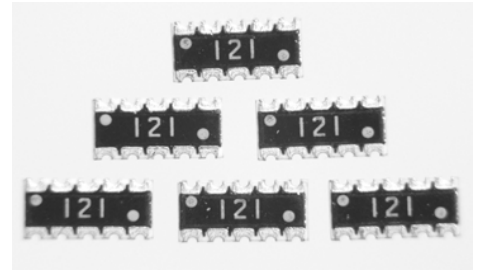


- Features:
- Thick film resistor element
  - Zero ohm available
  - Auto-placement capability
  - Multiple circuit types available
  - Ideal SMD substitute for leaded networks
  - Style 164D is qualified to AEC-Q200
  - RoHS compliant



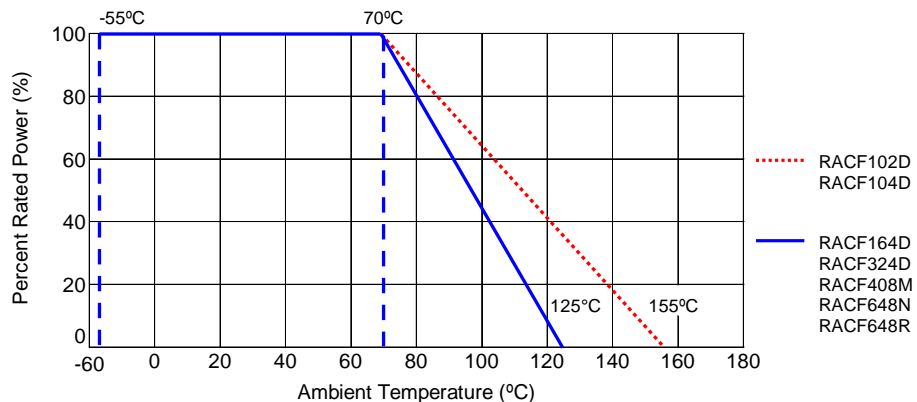
Electrical Specifications							
Type / Code / # of Elements / Circuit Type	Power Rating (per element) @ 70°C	Maximum Working Voltage	Maximum Overload Voltage	Resistance Temperature Coefficient	Ohmic Range (Ω) and Tolerance		
					1%	2%	5%
RACF102D	0.063W	25V	50V	±650 ppm/°C ±250 ppm/°C	3 - 9.88 10 - 1M		
RACF104D	0.063W	25V	50V	±400 ppm/°C ±200 ppm/°C	1 - 9.88 10 - 1M		
RACF164D	0.063W	50V	100V	±200 ppm/°C	22 - 1M	10 - 1M	
RACF324D	0.125W	200V	400V	±200 ppm/°C	22 - 1M	-	10 - 1M
RACF408M	0.063W	25V	50V	±200 ppm/°C	-	-	22 - 1M
RACF648N	0.063W	50V	100V	±200 ppm/°C	-	-	22 - 1M
RACF648R	0.063W	50V	100V	±200 ppm/°C	-	-	22 - 1M

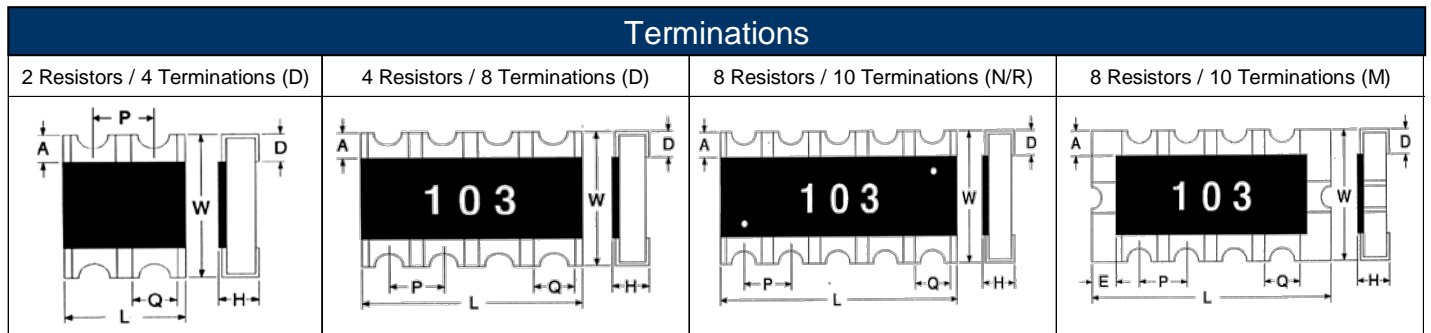
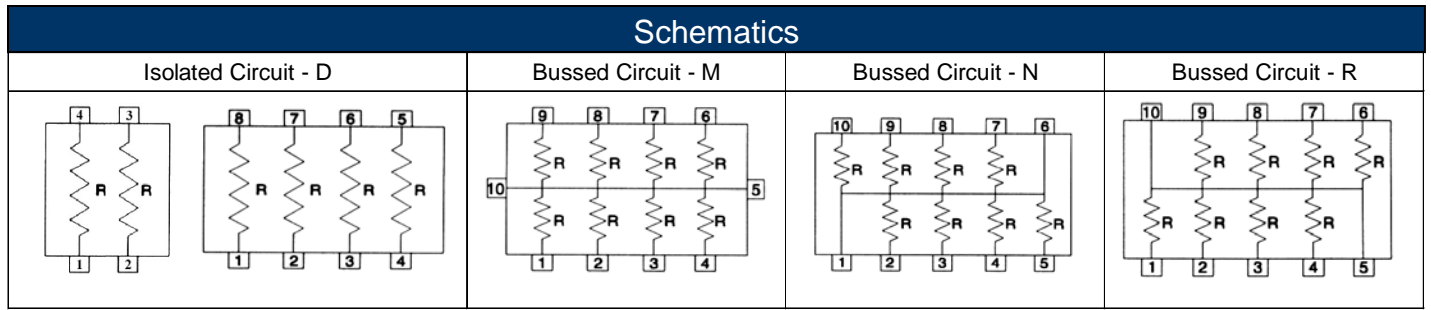
Note: (1) Lesser of  $\sqrt{P \cdot R}$  or maximum working voltage.

Performance Characteristics	
Test	Test Results (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: RACF102D, RACF104D, RACF164D: -55°C to 155°C  
 All other types: -55°C to 125°C

Power Derating Curve:

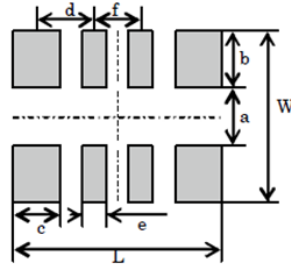




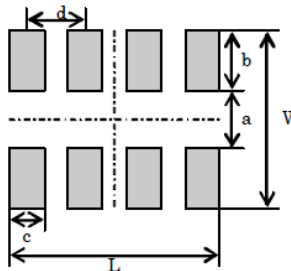
### Mechanical Specifications

Type / Code / # of Elements / Circuit Type	L Body Length	W Body Width	H Body Height	P Element Spacing	Q Termination Width	D Bottom Termination	A Top Termination	E End Termination	Unit
RACF102D	0.039 ± 0.004 1.00 ± 0.10	0.039 ± 0.004 1.00 ± 0.10	0.012 ± 0.004 0.30 ± 0.10	0.020 0.50	0.012 ± 0.004 0.30 ± 0.10	0.010 ± 0.004 0.25 ± 0.10	0.007 ± 0.004 0.18 ± 0.10	-	inches mm
RACF104D	0.079 ± 0.004 2.00 ± 0.10	0.039 ± 0.004 1.00 ± 0.10	0.016 ± 1.000 0.40 ± 0.10	0.020 0.50	0.012 ± 0.004 0.30 ± 0.10	0.010 ± 0.004 0.25 ± 0.10	0.006 ± 0.004 0.15 ± 0.10	-	inches mm
RACF164D	0.126 ± 0.008 3.20 ± 0.20	0.063 ± 0.006 1.60 ± 0.15	0.024 ± 0.006 0.60 ± 0.15	0.031 0.80	0.016 ± 0.008 0.40 ± 0.20	0.016 ± 0.008 0.40 ± 0.20	0.012 ± 0.008 0.30 ± 0.20	-	inches mm
RACF324D	0.200 ± 0.008 5.08 ± 0.20	0.118 ± 0.008 3.00 ± 0.20	0.024 ± 0.004 0.60 ± 0.10	0.050 1.27	0.031 ± 0.004 0.80 ± 0.10	0.020 ± 0.008 0.50 ± 0.20	0.022 ± 0.008 0.55 ± 0.20	-	inches mm
RACF408M	0.157 ± 0.008 4.00 ± 0.20	0.083 ± 0.008 2.10 ± 0.20	0.024 ± 0.004 0.60 ± 0.10	0.031 0.80	0.020 ± 0.008 0.50 ± 0.20	0.016 ± 0.008 0.40 ± 0.20	0.010 ± 0.008 0.25 ± 0.20	0.012 ± 0.008 0.30 ± 0.20	inches mm
RACF648N	0.252 ± 0.008 6.40 ± 0.20	0.122 ± 0.008 3.10 ± 0.20	0.024 ± 0.004 0.60 ± 0.10	0.050 1.27	0.028 ± 0.008 0.70 ± 0.20	0.020 ± 0.008 0.50 ± 0.20	0.014 ± 0.006 0.35 ± 0.15	-	inches mm
RACF648R	0.252 ± 0.008 6.40 ± 0.20	0.122 ± 0.008 3.10 ± 0.20	0.024 ± 0.004 0.60 ± 0.10	0.050 1.27	0.028 ± 0.008 0.70 ± 0.20	0.020 ± 0.008 0.50 ± 0.20	0.014 ± 0.006 0.35 ± 0.15	-	inches mm

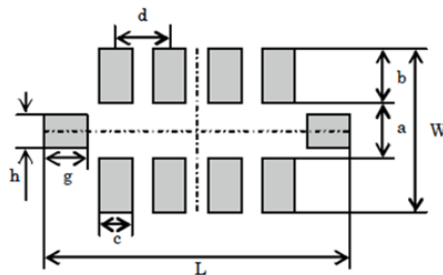
**Recommended Pad Layout**



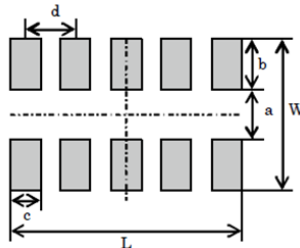
Type	L	W	a	b	c	d	e	f	Unit
RACF104D	0.077	0.059	0.020	0.020	0.014	0.022	0.010	0.020	Inches
	1.95	1.50	0.50	0.50	0.35	0.55	0.25	0.50	mm



Type	L	W	a	b	c	d	Unit
RACF164D	0.114	0.102	0.031	0.035	0.020	0.031	Inches
	2.90	2.60	0.80	0.90	0.50	0.80	mm
RACF324D	0.178	0.165	0.087	0.039	0.028	0.050	Inches
	4.51	4.20	2.20	1.00	0.70	1.27	mm



Type	L	W	a	b	c	d	g	h	Unit
RACF408M	0.213	0.130	0.059	0.035	0.016	0.031	0.039	0.020	Inches
	5.40	3.30	1.50	0.90	0.40	0.80	1.00	0.50	mm



Type	L	W	a	b	c	d	Unit
RACF648N/RACF648R	0.220	0.165	0.087	0.039	0.020	0.047	Inches
	5.58	4.20	2.20	1.00	0.50	1.20	mm

## 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 2). 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.

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)
RACF	Thick Film Surface Mount Chip Resistor Array Concave Terminations	SMD	YES(1)	100% Matte Sn over Ni	Jan-04	04/01

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

1 2 3 4 5 6 7 8 9 10 11 12 13 14

R A C F 1 6 4 D J T 1 0 K 0

Product Series		Code	Power	Tolerance			Packaging				Resistance Value
Code	Description			Code	Tol	Value	Code	Description	Size	Quantity	
RACF	Concave RoHS	102D	0.063W	F	1%	E24, E96	T	Reel - Paper Tape	102D, 104D	10,000	Four characters with the multiplier used as the decimal holder. 1 ohm = 1R00 100 Kohm = 100K 1 Mohm = 1M00 Zero ohm jumper = 0R00
		164D	0.063W	G	2%	E24			164D	5,000	
		324D	0.125W	J	5%			Reel - Plastic Tape	324D, 408M	4,000	
		408M	0.063W	Z	jumper	648N, 648R					
		648N	0.063W								
		648R	0.063W								

D = Isolated  
M, N, R = Bussed