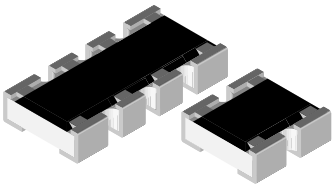
Thick Film Chip Resistor Array



The CRA04S thick film resistor array is constructed on a high grade ceramic body with convex terminations. A small package enables the design of high density circuits. The single component reduces board space, component counts, and assembly costs.

FEATURES

- Convex terminal array with square corners
- Wide ohmic range: 10R to 1M0
- 4 or 8 terminal package with isolated resistors
- AEC-Q200 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS

MODEL	CIRCUIT	POWER RATING $P_{70\,°C}$ W	LIMITING ELEMENT VOLTAGE MAX. V≅	TEMPERATURE COEFFICIENT ± ppm/K	TOLERANCE ± %	RESISTANCE RANGE Ω	E-SERIES
CRA04S	03	0.063	50	100	1	10 to 1M	24 + 96
				200	2; 5		24
		Zero-Ohm-Resistor: $R_{max.} \leq 50\ m\Omega$, $I_{max.} = 1\ A$					

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CRA04S
Rated dissipation at 70 °C (2)	W per element	0.063
Limiting element voltage (1)	V≅	50
Insulation voltage (1 min)	$V_{DC/AC\ peak}$	100
Category temperature range	°C	-55 to +155
Insulation resistance	Ω	> 10^9

Notes

(1) Rated voltage: $\sqrt{P \times R}$

(2) The power dissipation on the resistor generates a temperature rise against the local ambient, depending on the heat flow support of the printed-circuit board (thermal resistance). The rate dissipation applies only if the permitted film temperature of 155 °C is not exceeded

PART NUMBER AND PRODUCT DESCRIPTION

Part Number: CRA04S08347K0JTD (1)

C	R	A	0	4	S	0	8	3	4	7	K	0	J	T	D		

MODEL	TERMINAL STYLE	PIN	CIRCUIT	VALUE	TOLERANCE	PACKAGING (2)	SPECIAL
CRA04	**S**	**04** **08**	**3** = 03	**R** = decimal **K** = thousand **M** = million **0000** = 0 Ω jumper	**F** = ± 1 % **G** = ± 2 % **J** = ± 5 % **Z** = 0 Ω jumper	**TD** **TC** **PZ**	Up to 2 digits

Product Description: CRA04S 08 03 473 J RT7 e3

CRA04S	08	03	473	J	RT7	e3
MODEL	TERMINAL COUNT	CIRCUIT TYPE	RESISTANCE VALUE	TOLERANCE	PACKAGING (4)	LEAD (Pb)-FREE
CRA04S	**04** **08**	**03**	**473** = 47 kΩ **4702** = 47 kΩ **10R0** = 10 Ω **100** = 10 Ω **000** = 0 Ω jumper First two digits (3 for 1 %) are significant. Last digit is the multiplier.	**F** = ± 1 % **G** = ± 2 % **J** = ± 5 % **Z** = 0 Ω jumper	**RT7** **RT6** **PZ**	**e3** = pure tin termination finish

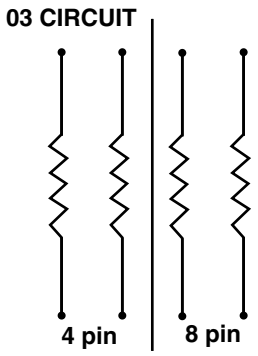
Notes

(1) Preferred way for ordering products is by use of the PART NUMBER

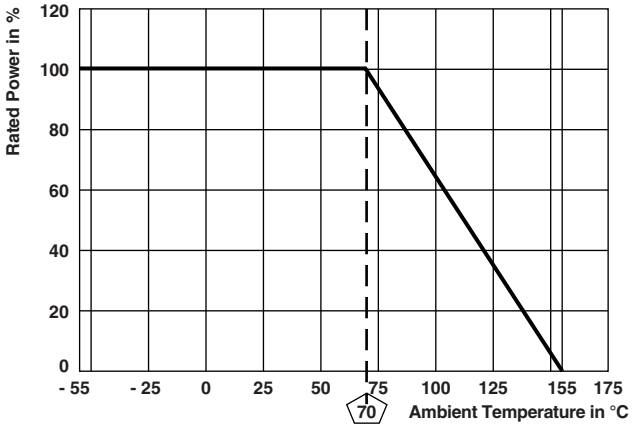
(2) Please refer to the table PACKAGING, see next page

PACKAGING						
MODEL	TAPE WIDTH	DIAMETER	PITCH	PIECES/REEL	PACKAGING CODE	
					PAPER TAPE	
					PART NUMBER	PRODUCT DESCRIPTION
CRA04S	8 mm	180 mm/7"	2 mm	10 000	TD	RT7
		330 mm/13"	2 mm	20 000	TC	RT6
		330 mm/13"	2 mm	50 000	PZ	PZ

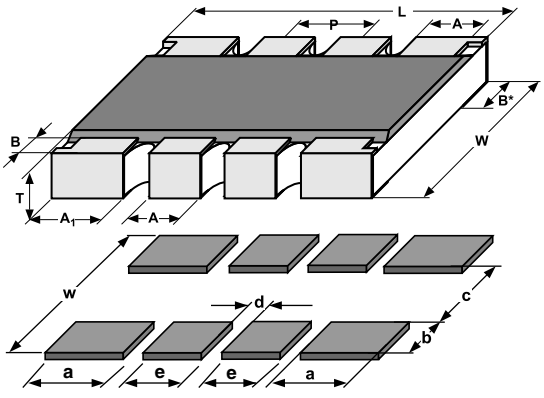
CIRCUIT



DERATING



DIMENSIONS



PIN NO #	DIMENSIONS in millimeters							
	L	A	A_1	B	B*	$P_{NOM.}$	T	W
4	1.0 ± 0.1	-	0.33	0.15	0.25	0.65	0.35	1.0
8	2.0 ± 0.2	0.30	0.4	0.15	0.25	0.50	0.45	1.0
TOL.	-	± 0.15	± 0.15	± 0.10	± 0.1	-	± 0.1	± 0.15

SOLDER PAD DIMENSIONS in millimeters						
	c	w	d	a	b	e
WAVE	0.45	1.45	0.2	0.4	0.5	0.3

The dimensions shown are for a 8 pin part. For parts with different pin numbers use the same pitch and add or subtract pads as required.

TEST PROCEDURES AND REQUIREMENTS

EN 60115-1

TEST (clause)	CONDITIONS OF TEST	REQUIREMENTS PERMISSIBLE CHANGE ($\Delta R/R$) (1)	
		STABILITY CLASS 1 OR BETTER	STABILITY CLASS 2 OR BETTER
	Stability for product types: CRA04S	10 Ω to 1 MΩ	10 Ω to 1 MΩ
Resistance (4.5)	-	± 1 %	± 2 %; ± 5 %
Temperature coefficient (4.8.4.2)	(20 / -55 / 20) °C and (20 / 125 / 20) °C	± 100 ppm/K	± 200 ppm/K
Overload (4.13)	$U = 2.5 \times (P_{70} \times R)^{1/2}$ ≤ 2 x $U_{max.}$; 0.5 s	± (0.25 % R + 0.05 Ω)	± (0.5 % R + 0.05 Ω)
Solderability (4.17.5) (2)	Aging 4 h at 155 °C, dry heat solder bath method; 235 °C; 2 s visual examination	Good tinning (≥ 95 % covered) no visible damage	
Resistance to soldering heat (4.18.2)	Solder bath method; (260 ± 5) °C; (10 ± 1) s	± (0.25 % R + 0.05 Ω)	± (0.5 % R + 0.05 Ω)
Rapid change of temperature (4.19)	30 min at LCT = -55 °C; 30 min at UCT = 125 °C; 5 cycles	± (0.25 % R + 0.05 Ω)	± (0.5 % R + 0.05 Ω)
Damp heat, steady state (4.24)	(40 ± 2) °C; 56 days; (93 ± 3) % RH	± (1 % R + 0.05 Ω)	± (2 % R + 0.1 Ω)
Climatic sequence (4.23)	16 h at UCT = 125 °C; 1 cycle at 55 °C; 2 h at LCT = -55 °C; 1 h/1 kPa at 15 °C to 35 °C; 5 cycles at 55 °C $U = (P_{70} \times R)^{1/2}$ $U = U_{max.}$; whichever is less severe	± (1 % R + 0.05 Ω)	± (2 % R + 0.1 Ω)
Endurance at 70 °C (4.25.1)	$U = (P_{70} \times R)^{1/2}$ $U = U_{max.}$; whichever is less severe 1.5 h “ON”; 0.5 h “OFF”; 70 °C; 1000 h	± (1 % R + 0.05 Ω)	± (2 % R + 0.1 Ω)
Extended endurance (4.25.1.8)	Duration extended to 8000 h	± (2 % R + 0.1 Ω)	± (4 % R + 0.1 Ω)
Endurance at upper category temperature (4.25.3)	UCT = 125 °C; 1000 h	± (1 % R + 0.05 Ω)	± (2 % R + 0.1 Ω)

Notes

(1) Figures are given for a single element

(2) Solderability is specified for 2 years after production or requalification. Permitted storage time is 20 years

APPLICABLE SPECIFICATIONS

• EN 60115-1	Generic specification
• EN 140400	Sectional specification
• EN 140401-802	Detail specification
• IEC 60068-2-X	Variety of environmental test procedures
• EIA 481	Packaging of SMD components

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.

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.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Resistor Networks & Arrays ***category:***

Click to view products by Vishay ***manufacturer:***

Other Similar products are found below :

CS6600552K000B8768 CSC08A01470KGEK M8340105K1002FGD03 M8340106K1002GCD03 M8340106MA010FHD03 M8340107K1471FGD03 M8340108K1001FCD03 M8340108K2402GGD03 M8340108K3242FGD03 M8340108K6202GGD03 M8340109K2002FCD03 M8340109MA010GHD03 EXB-24N121JX EXB-24N470JX EXB-A10E102J EXB-A10E104J 744C083101JTR MDP1603100KGE04 PRA100I2-1KBWNW GUS-SS4-BLF-01-1002-G ACAS06S0830339P100 ACAS06S0830343P100 ACAS06S0830344P100 RM2012A-102/104-PBVW10 RM2012A-102503-PBVW10 RM3216B-102302-PBVW10 L091S102LF ACAS06S0830341P100 ACAS06S0830342P100 ACAS06S0830345P100 EXB-14V300JX EXB-U18330JX EXB-V8V220GV PRA100I2-10KBWN PRA100I4-10KBWN M8340102M4701JAD04 M8340105K1002GGD03 M8340105M1001JCD03 M8340107K3402FCD03 M8340108K1000FGD03 M8340108K1000GGD03 M8340108K1002GGD03 M8340108K2002FCD03 M8340108K3901GGD03 M8340108K4992FGD03 M8340109K2002GCD03 M8340109K2202GCD03 RKC8BD104J RM3216B-103103-PBXW10 TDP16031001BUF