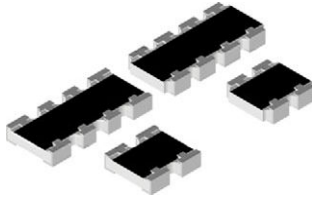


Thick Film Chip Resistor Array



CRA06E and CRA06S Thick Film resistor arrays are 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 available with either scalloped corners (E version) or square corners (S version)
- Wide ohmic range: 10 Ω to 1 M Ω
- 4 or 8 terminal package with isolated resistors
- AEC-Q200 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

STANDARD ELECTRICAL SPECIFICATIONS							
MODEL	CIRCUIT	POWER RATING P_{70} W	LIMITING ELEMENT VOLTAGE MAX. V_{\equiv}	TEMPERATURE COEFFICIENT \pm ppm/K	TOLERANCE \pm %	RESISTANCE RANGE Ω	SERIES
CRA06E CRA06S	03	0.063	50	100 200	1 2; 5	10R to 1M	E24; E96 E24
Zero-Ohm-Resistor: $R_{max.} = 50 \text{ m}\Omega$, $I_{max.} = 1 \text{ A}$							

TECHNICAL SPECIFICATIONS		
PARAMETER	UNIT	CRA06E AND CRA06S
Rated dissipation at 70 °C ⁽¹⁾	W per element	0.063
Limiting element voltage ⁽²⁾	V_{\equiv}	50
Insulation voltage (1 min)	$V_{DC/AC \text{ PEAK}}$	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 rates dissipation applies only if the permitted film temperature of 155 °C is not exceed

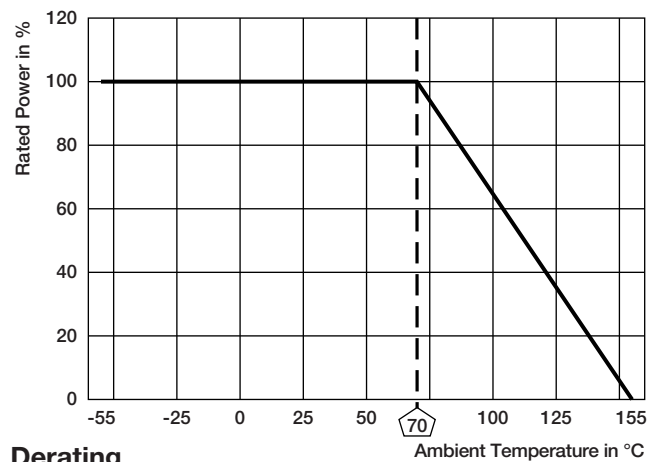
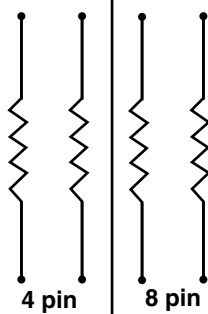
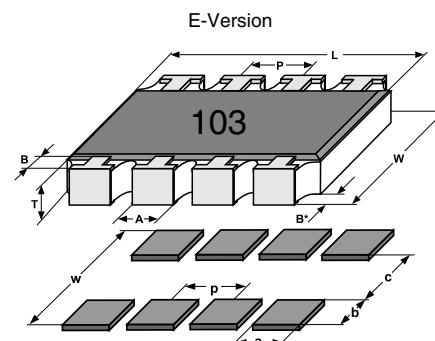
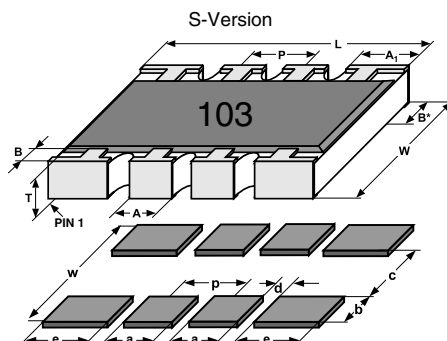
PART NUMBER AND PRODUCT DESCRIPTION																	
Part Number: CRA06S08347K0JTA ⁽¹⁾																	
C	R	A	0	6	S	0	8	3	4	7	K	0	J	T	A		
MODEL	TERMINAL STYLE	PIN	CIRCUIT	VALUE			TOLERANCE	PACKAGING ⁽²⁾	SPECIAL								
CRA06	S E	04 08	3 = 03	R = decimal K = thousand M = million 0000 = 0 Ω jumper	F = ± 1 % G = ± 2 % J = ± 5 % Z = 0 Ω jumper		TA TC	Up to 2 digits									
Product Description: CRA06S 08 03 -05 473 J RT1 e3																	
CRA06S	08	03	473	J	RT1	e3											
MODEL	TERMINAL COUNT	CIRCUIT TYPE	RESISTANCE VALUE	TOLERANCE	PACKAGING	LEAD (Pb)-FREE											
CRA06E CRA06S	04 08	03	1R0 = 1 Ω 10R = 10 Ω 47K = 47 k Ω 1M0 = 1 M Ω 0R0 = jumper	F = ± 1 % G = ± 2 % J = ± 5 % Z = 0 Ω jumper	RT1 RT6	e3 = pure tin termination finish											
First two digits (3 for 1 %) are significant. Last digit is the multiplier																	

Notes

- (1) Preferred way for ordering products is by use of the PART NUMBER
- (2) Please refer to table PACKAGING, see next page

AVAILABLE TYPES AND RANGES				
MODEL	TERMINAL COUNT	CIRCUIT	TEMPERATURE COEFFICIENT	TOLERANCE
CRA06S	04	03	± 100 ppm/K	± 1 %
			± 200 ppm/K	± 2 %; ± 5 %
	08	03	± 100 ppm/K	± 1 %
			± 200 ppm/K	± 2 %; ± 5 %
CRA06E	08	03	± 100 ppm/K	± 1 %
			± 200 ppm/K	± 2 %; ± 5 %

PACKAGING					
MODEL	TAPE WIDTH	PITCH	PIECES / REEL	PACKAGING CODE	
				PAPER TAPE	
				PART NUMBER	PRODUCT DESCRIPTION
CRA06	180 mm/7"	4 mm	5000	TA	RT1
	330 mm/13"	4 mm	20 000	TC	RT6

CIRCUIT
03 CIRCUIT

Derating
DIMENSIONS


MODEL	PIN NO#	DIMENSIONS in millimeters							
		L	A	A ₁	B	B*	P	T	W
CRA06S	4	1.6	0.38	0.61	0.3	0.3	0.8	0.5	1.5
CRA06E	8	3.2	0.38	-	0.3	0.3	0.8	0.5	1.5
CRA06S	8	3.2	0.38	0.61	0.3	0.3	0.8	0.5	1.5
	TOL.	± 0.15	± 0.15	± 0.15	± 0.15	± 0.15	± 0.1	± 0.1	± 0.15

REFLOW SOLDER PAD DIMENSIONS in millimeters								
MODEL	PINS	c	w	d	p	a	b	e
CRA06S	4	0.8	3.1	0.36		0.44	1.15	
CRA06E CRA06S	8	0.8	3.1	0.36	0.8	0.44	1.15	0.63



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: CRA06E / CRA06S	10 Ω to 1 M Ω	10 Ω to 1 M Ω
Resistance (4.5)	-	$\pm 1 \%$	$\pm 2 \%$; $\pm 5 \%$
Temperature coefficient (4.8.4.2)	(20 / -55 / 20) °C and (20 / 125 / 20) °C	± 100 ppm/K	± 200 ppm/K
Overload (4.13)	$U = 2.5 \times (P_{70} \times R)^{1/2}$ $\leq 2 \times U_{max.}$; 0,5 s	$\pm (0.25 \% R + 0.05 \Omega)$	$\pm (0.5 \% R + 0.05 \Omega)$
Solderability (4.17.5) ⁽²⁾	Aging 4 h at 155 °C, dry heat solder bath method; 235 °C; 2 s visual examination	Good tinning ($\geq 95 \%$ covered) no visible damage	
Resistance to soldering heat (4.18.2)	Solder bath method; (260 \pm 5) °C; (10 \pm 1) s	$\pm (0.25 \% R + 0.05 \Omega)$	$\pm (0.5 \% R + 0.05 \Omega)$
Rapid change of temperature (4.19)	30 min at LCT = -55 °C; 30 min at UCT = 125 °C; 5 cycles	$\pm (0.25 \% R + 0.05 \Omega)$	$\pm (0.5 \% R + 0.05 \Omega)$
Damp heat, steady state (4.24)	(40 \pm 2) °C; 56 days; (93 \pm 3) % RH	$\pm (1 \% R + 0.05 \Omega)$	$\pm (2 \% R + 0.1 \Omega)$
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	$\pm (1 \% R + 0.05 \Omega)$	$\pm (2 \% R + 0.1 \Omega)$
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	$\pm (1 \% R + 0.05 \Omega)$	$\pm (2 \% R + 0.1 \Omega)$
Extended endurance (4.25.1.8)	Duration extended to 8000 h	$\pm (2 \% R + 0.1 \Omega)$	$\pm (4 \% R + 0.1 \Omega)$
Endurance at upper category temperature (4.25.3)	UCT = 125 °C; 1000 h	$\pm (1 \% R + 0.05 \Omega)$	$\pm (2 \% R + 0.1 \Omega)$

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



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