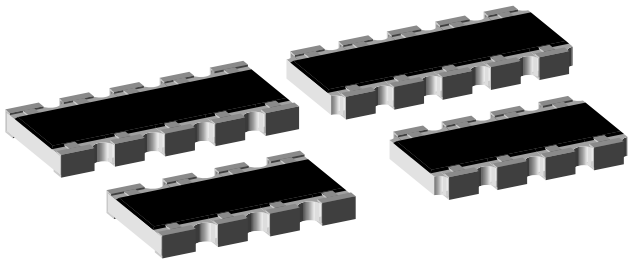
Thick Film Array, Resistor/Capacitor



FEATURES

- Single component reduces board space and component counts
- Choice of dielectric characteristics X7R or Y5U
- Wrap around termination
- Thick film R/C element
- Inner electrode protection
- Flow & Reflow solderable
- Automatic placement capability, standard size
- 8 or 10 pin configurations

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	RESISTOR				CAPACITOR				
	POWER RATING $P_{70\,°C}$ W	TEMPERATURE COEFFICIENT ppm/°C	TOLERANCE %	VALUE RANGE Ω	DIELECTRIC	TEMPERATURE COEFFICIENT %	TOLERANCE %	VOLTAGE RATING VDC	VALUE RANGE pF
CRCA12E CRCA12S	0.125	200	5	10R - 1M0	X7R	± 15	20	50	10 - 270
CRCA12E CRCA12S	0.125	200	5	10R - 1M0	Y5U	+ 20, - 56	20	50	270 - 1800

RESISTOR
- Operating Temperature Range: X7R - 55 °C to + 125 °C
- Technology: Thick Film

CAPACITOR
- Operating Temperature Range: X7R - 55 °C to + 125 °C
  Y5U - 30 °C to + 85 °C
- Maximum Dissipation Factor: 2.5 %
- Dielectric Withstanding Voltage: 125 V_{dc} , 5 sec, 50 mA Charge

Notes
- Ask about extended value ranges
- Packaging: according to EIA 481
- Power rating depends on the max. temperature at the solder point, the component placement density and the substrate material

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR	X7R CAPACITOR	Y5U CAPACITOR
Rated Dissipation at 70 °C (CECC 40401 I EIA 575)	W	0.125	-	-
Capacitor Voltage Rating	V	-	50	50
Dielectric Withstanding Voltage (5 sec, 50 mA Charge)	V_{dc}	-	125	125
Category Temperature Range	°C	- 55/+ 155	- 55/+ 125	- 30/+ 85
Insulation Resistance	Ω	$> 10^{10}$		

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CRCA12E081472220R (preferred part numbering format)

C	R	C	A	1	2	E	0	8	1	4	7	2	2	2	0	R	

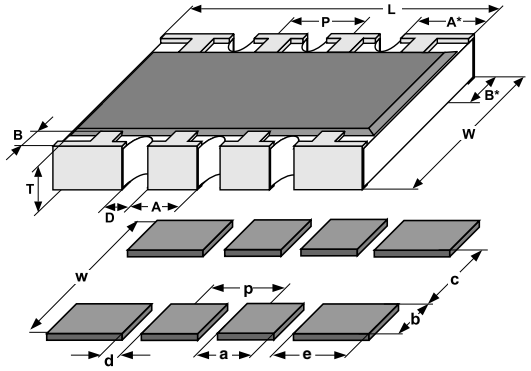
MODEL	PIN COUNT	SCHEMATIC	RESISTANCE VALUE	CAPACITANCE VALUE	PACKAGING	SPECIAL
CRCA12E **CRCA12S**	**08** = 8 Pin **10** = 10 Pin	**1** = 01 **2** = 02 **3** = 03 **0** = Special	2 digit significant figures, followed by a multiplier **100** = 10 Ω **683** = 68 kΩ **105** = 1.0 MΩ (Tolerance = ± 5 %)	2 digit significant figures, followed by multiplier **100** = 10 pF **271** = 270 pF **182** = 1800 pF (Tolerance = ± 20 %)	**E** = Lead (Pb)-free, T/R (2000 pcs) **R** = Tin/Lead, T/R (2000 pcs)	(Dash Number) (up to 1 digit) Blank = Standard

Historical Part Number example: CRCA12E0801472J220MRB8 (will continue to be accepted)

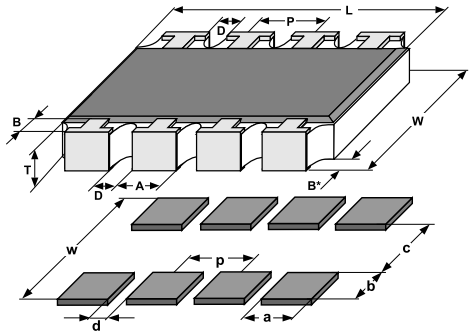
CRCA12E	08	01	472	J	220	M	RB8
MODEL	PIN COUNT	SCHEMATIC	RESISTANCE VALUE	TOLERANCE	CAPACITANCE VALUE	TOLERANCE	PACKAGING

DIMENSIONS

8-Terminal device S-Version



E-Version



GLOBAL MODEL	PIN NO#	SIZE		DIMENSIONS [in millimeters]								
		INCH	METRIC	L	W	T	B	B*	A	A*	D_{NOM}	P_{NOM}
CRCA12E	8	2012	5032	5.1 ± 0.15	3.05 ± 0.15	0.61 ± 0.10	0.51 ± 0.25	0.38 ± 0.2	0.79 ± 0.15	-	0.25	1.27
CRCA12S	8	2012	5032	5.1 ± 0.15	3.05 ± 0.15	0.61 ± 0.10	0.51 ± 0.25	0.38 ± 0.2	0.79 ± 0.15	0.89 ± 0.15	0.25	1.27
CRCA12E	10	2512	6432	6.4 ± 0.15	3.05 ± 0.15	0.61 ± 0.10	0.51 ± 0.25	0.38 ± 0.2	0.79 ± 0.15	-	0.25	1.27
CRCA12S	10	2512	6432	6.4 ± 0.15	3.05 ± 0.15	0.61 ± 0.10	0.51 ± 0.25	0.38 ± 0.2	0.79 ± 0.15	0.89 ± 0.15	0.25	1.27

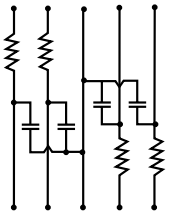
SOLDER PAD DIMENSIONS [in millimeters]							
	c	w	d	p	a	b	e
WAVE SOLDERING	2.2	4.3	0.57	1.27	0.71	1.05	1.09
REFLOW SOLDERING	2.2	3.9	0.57	1.27	0.71	0.86	1.09

Note

1. The images shown are for an 8 pin Part. For a 10 pin part, use the same pitch and add another pair of “a” dimension pads to the inner solder pads.

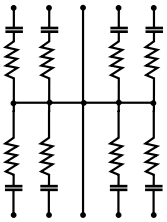
SCHEMATICS

01 Circuit
CRCA12E & S



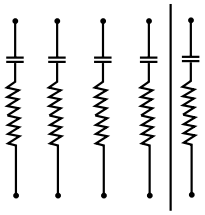
10 Pin only

02 Circuit
CRCA12E & S

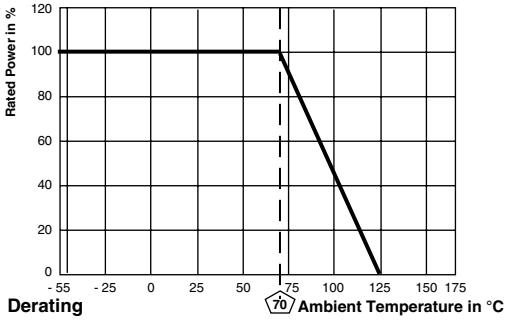


10 Pin only

03 Circuit
CRCA12E & S



8 Pin 10 Pin



PERFORMANCE

TEST	CONDITIONS OF TEST	TEST RESULTS	
		R	C
Endurance Test at 70 °C MIL-Std-202 Method 108	1000 hours at 70 °C, 1.5 hours "ON", 0.5 hours "OFF"	± (5 % + 2 Ω)	± 20 %
Dielectric Withstanding Voltage MIL-Std-202 Method 301	125 V_{dc}, 5 seconds, 50 mA charge	no physical damage	
Thermal Shock MIL-Std-202 Method 107	100 cycles, - 55 to + 125 °C	± (5 % + 2 Ω)	± 20 %
Moisture MIL-Std-202 Method 106	Omit steps 7A and B	± (5 % + 2 Ω)	± 20 %
Resistance to Soldering Heat EIA 575	10 seconds at 260 °C solder bath temperature	± (5 % + 2 Ω)	± 20 %
High Temperature Exposure EIA 575	125 °C for 100 hours	± (5 % + 2 Ω)	± 20 %
Low Temperature Operation EIA 575	1 hour at - 55 °C then 45 minutes at 50 V	± (5 % + 2 Ω)	± 20 %
Solderability & Leaching EIA 575 3.12	Condition C	95 % Coverage	

APPLICABLE SPECIFICATIONS

- IPC Standards
- EIA 575

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