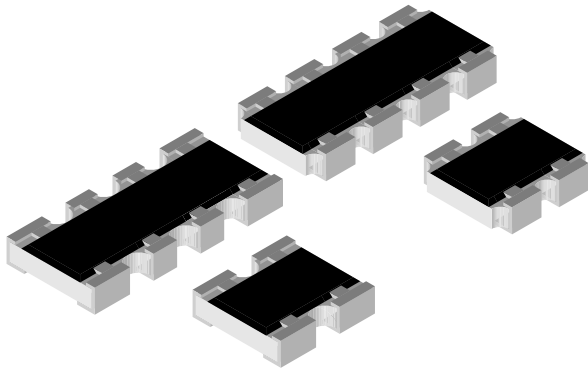


## Thick Film, Resistor Array



### FEATURES

- Convex terminal array available with either scalloped corners (E version) or square corners (S version)
- 4, 8, or 10 terminal package with either isolated resistors or bussed resistors
- Single component reduces board space and component counts
- Automatic placement capability
- Wave and solder paste reflow compatible
- Thick film resistance element
- Solderable wrap around termination
- Nickel barrier for inner electrode protection
- Standard E-24 ( $\pm 2\%$  and  $\pm 5\%$ ) and E-96 ( $\pm 1\%$ ) resistance values
- Operating temperature range of  $-55^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$
- Consult factory for additional schematics, values, etc

| STANDARD ELECTRICAL SPECIFICATIONS   |   |         |   |   |                |                                 |          |
|--------------------------------------|---|---------|---|---|----------------|---------------------------------|----------|
| MODEL                                | POWER RATING<br>$P_{70^{\circ}\text{C}}$<br>W | CIRCUIT | LIMITING ELEMENT<br>VOLTAGE MAX.<br>$V_{\cong}$ | TEMPERATURE<br>COEFFICIENT<br>ppm/ $^{\circ}\text{C}$ | TOLERANCE<br>% | RESISTANCE<br>RANGE<br>$\Omega$ | E-SERIES |
| CRA06S                               | 0.063   | 02, 20  | 50  | 250   | 5              | 22R-1M0                         | 24       |
| CRA06E & S                           | 0.063   | 03      | 50  | 100   | 1              | 10R-1M0                         | 24-96    |
|                                      |   |         |   | 200   | 2, 5           | 10R-1M0                         | 24       |
| Jumper: Zero-Ohm-Resistor on Request |   |         |   |   |                |                                 |          |

- Power rating depends on the max. temperature at the solder point, the component placement density and the substrate material
- Operating temperature Range:  $-55^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$
- Ask about further value ranges
- Packaging: according to EIA 481

| TECHNICAL SPECIFICATIONS                  |                         |                          |                          |
|---|-------------------------|--------------------------|--------------------------|
| PARAMETER                                 | UNIT                    | CRA06S<br>02, 20 CIRCUIT | CRA06E & S<br>03 CIRCUIT |
| Rated Dissipation at $70^{\circ}\text{C}$ | W                       | 0.063                    | 0.063                    |
| Limiting Element Voltage <sup>1)</sup>    | $V_{\cong}$             | 50                       | 50                       |
| Insulation Voltage (1min)                 | $V_{\text{dc/ac peak}}$ | 100                      | 100                      |
| Category Temperature Range                | $^{\circ}\text{C}$      | $-55 / +150$             | $-55 / +150$             |
| Insulation Resistance                     | $\Omega$                | $> 10^{10}$              | $> 10^{10}$              |

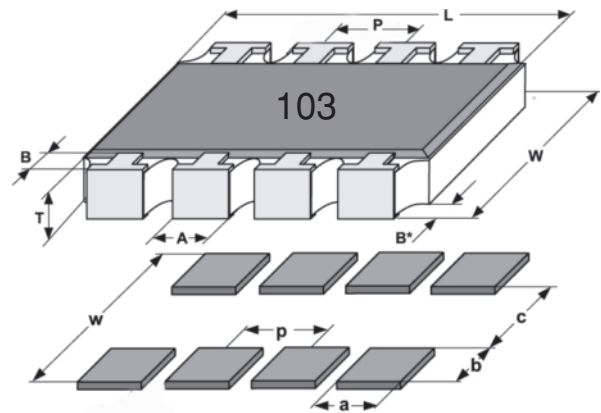
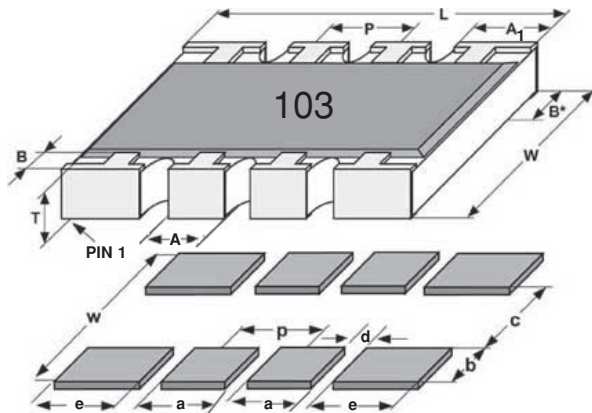
<sup>1)</sup>Rated voltage:  $\sqrt{P \times R}$

| ORDERING INFORMATION |                |              |  |  |                   |
|----------------------|----------------|--------------|--|--|-------------------|
| CRA06S               | 08             | 03           | 473  | J  | RT1               |
| MODEL                | TERMINAL COUNT | CIRCUIT TYPE | R-VALUE<br>$\Omega$  | TOLERANCE<br>$\pm \%$  | PACKAGING         |
| CRA06S               | 04, 08, 10     | 03, 02, 20   | First two digits (three for 1%)<br>are significant. Last digit is the<br>multiplier<br>473 = 47K<br>4702 = 47K<br>100 = 10 $\Omega$<br>10R0 = 10 $\Omega$<br>000 = 0 $\Omega$ Jumper | F = $\pm 1\%$<br>G = $\pm 2\%$<br>J = $\pm 5\%$<br>Z = 0 $\Omega$ Jumper | Papertape 5000pcs |
| CRA06E               | 08             | 03           |  |  |                   |

8-Terminal device

S - Version

E - Version

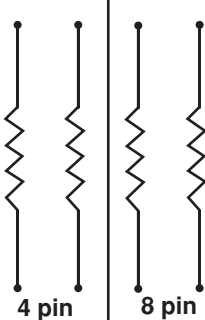


| MODEL | PIN NO#    | DIMENSIONS [in millimeters] |        |                |        |        |       |        |        |
|-------|------------|-----------------------------|--------|----------------|--------|--------|-------|--------|--------|
| CRA   |            | L                           | A      | A <sub>1</sub> | B      | B*     | P     | T      | W      |
| 06S   | 4          | 1.6                         | 0.38   | 0.61           | 0.3    | 0.3    | 0.8   | 0.4    | 1.5    |
| 06E   | 8          | 3.2                         | 0.38   | -              | 0.3    | 0.3    | 0.8   | 0.4    | 1.5    |
| 06S   | 8          | 3.2                         | 0.38   | 0.61           | 0.3    | 0.3    | 0.8   | 0.4    | 1.5    |
| 06S   | 10         | 3.2                         | 0.34   | 0.49           | 0.3    | 0.2    | 0.64  | 0.5    | 1.6    |
|       | <b>Tol</b> | ± 0.15                      | ± 0.15 | ± 0.15         | ± 0.15 | ± 0.15 | ± 0.1 | ± 0.05 | ± 0.15 |

| 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 + S                             | 8    | 0.8 | 3.1 | 0.36 | 0.8  | 0.44 | 1.15 | 0.63 |
| CRA06S                                 | 10   | 0.8 | 3.1 | 0.30 | 0.64 | 0.34 | 1.15 | 0.45 |

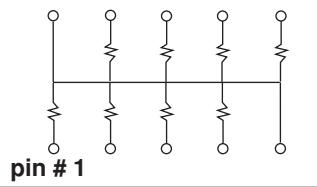
**CIRCUIT SCHEMATIC**

**03 CIRCUIT**



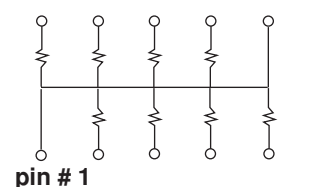
4 pin (CRA06S only)

**02 CIRCUIT**

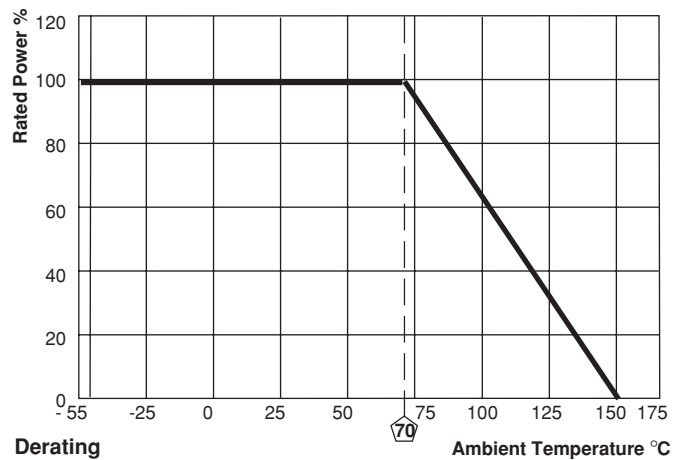


pin # 1

**20 CIRCUIT**



pin # 1



| PERFORMANCE                          |   |              |
|--------------------------------------|---|--------------|
| TEST                                 | CONDITIONS OF TEST  | TEST RESULTS |
| Endurance Test at 70°C per EIA 575   | 1000 hour at 70°C, 1.5 hours "ON", 0.5 hours "OFF"  | ±1.0%        |
| Overload per EIA 575                 | Short time overload 2.5 x rated continuous working voltage for 5 seconds. Not to exceed 2 x max operating voltage | ± 0.5%       |
| Thermal Shock                        | per EIA 575-3.5   | ± 0.5%       |
| Moisture Resistance                  | per EIA 575-3.10  | ± 1.0%       |
| Resistance to Soldering Heat EIA 575 | 10 seconds at 260°C solder bath temperature   | ± 2.0%       |
| High Temperature Exposure            | per EIA 575-3.7   | ± 1.0%       |
| Low Temperature Operations           | per EIA-575-3.6   | ± 0.5%       |
| Solderability & Leaching             | EIA 575-3.12  | 95% Coverage |