

# TA Series

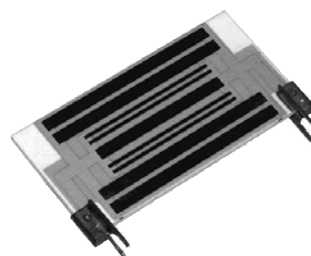


## Power Chip Thick Film on Alumina Substrate

Ohmite's original Power Chip resistors feature our thick film on alumina substrate technology. These planar packages yield space saving, 10W/in<sup>2</sup> power densities that require over 50% less board space than other radial packages. Convection cooling is maximized by the planar package configuration which dissipates heat well above board level.

Ohmite's power chip resistors have a 125% higher operating temperature range than competitive product of similar design. High temperature solder and in-process plating keep terminations secure under self-heating effects by preventing re-flow from full power operation.

Flexible packaging schemes make these resistors ideal for power supplies, audio amplifiers, video fly-back, and other power control applications.



### FEATURES

- High-Temp Terminal Construction
- Wide Resistance Range
- Low Inductance (50nH-100nH)
- High Power Density
- Easy to install. PC-mountable

### SERIES SPECIFICATIONS

| Series | Wattage | Series | Wattage | Series | Wattage | Series | Wattage | Series | Wattage |
|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|
| TA203  | 3.0     | TA205  | 5.0     | TA207  | 7.5     | TA310  | 10.0    | TA025  | 25.0    |
| TA303  | 3.0     | TA305  | 5.0     | TA307  | 7.5     | TA810  | 10.0    | TA050  | 50.0    |
|        |         | TA605  | 5.0     |        |         |        |         | TA100  | 100.0   |
|        |         | TA805  | 5.0     |        |         |        |         |        |         |

### CHARACTERISTICS

|                                        |                                                                                                                               |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>Substrate</b>                       | Alumina                                                                                                                       |
| <b>Resistor</b>                        | Thick Film                                                                                                                    |
| <b>Coating</b>                         | Glass                                                                                                                         |
| <b>Terminals</b>                       | Solder Plated Phosphor Bronze                                                                                                 |
| <b>Temperature Coefficient</b>         | 1 ohm: 450 ppm/°C<br>1 to 100Ω: 100 ppm/°C<br>101Ω and up: 50 ppm/°C                                                          |
| <b>Tolerance</b>                       | ±1%, ±5% and ±10%                                                                                                             |
| <b>Power Rating</b>                    | Based on 25°C free air                                                                                                        |
| <b>Resistance Range</b>                | 0.25 ohm to 10M ohm. Consult factory for other values                                                                         |
| <b>Maximum Operating Voltage</b>       | 350 VAC, 500 VDC through glass, 1000 VAC, 1500 VDC through substrate, not to exceed power rating                              |
| <b>Overload</b>                        | Five times rated power, as long as the one second average dissipation does not exceed the wattage rating. ΔR: ±2%, 2000 hours |
| <b>Derating</b>                        | 100% @ 25°C to 0% @ 180°C ambient.                                                                                            |
| <b>Equivalent Parallel Capacitance</b> | 1.0pf (100 MHz)                                                                                                               |
| <b>Withstanding Voltage</b>            | 5000V thru back side                                                                                                          |
| <b>Operating Temperature Range</b>     | -55°C to +180°C                                                                                                               |
| <b>Overload Current</b>                | 20 x rated current up to 8 ms (ΔR ± 0.5%)                                                                                     |

| Test                         | Test Condition                                                             | Specification           |
|------------------------------|----------------------------------------------------------------------------|-------------------------|
| <b>Life (Rated Power)</b>    | MILR83401<br>40°C, rated power, 90 min ON 30 min OFF, 1000 hrs.            | ΔR<br>±( 1.0% + 0.05Ω)  |
| <b>Life (Moisture Load)</b>  | 60°C, 90 - 95% RH, rated power, 90 min ON 30 min OFF, 1000 hrs.            | ΔR<br>±( 1.0% + 0.05Ω)  |
| <b>Temperature Cycling</b>   | Room temp > -55°C<br>30 min > RT 10 min ± 120°C 30 min > RT10 min 5 cycles | ΔR<br>±( 0.25% + 0.05Ω) |
| <b>Flammability</b>          | UL94V-O rated (not recognized)                                             |                         |
| <b>Soldering Heat</b>        | 350°C Solderpot, 3 secs.                                                   | ΔR<br>±( 0.25% + 0.05Ω) |
| <b>Insulation Resistance</b> | DC 100V, 1 min                                                             | Over 1000M ohm          |

(continued)

rev 6/18-1

# TA Series

## Power Chip Thick Film on Alumina Substrate

### DIMENSIONS

(±.020 in. / ±.508mm)

**PA**  
3, 5, 7.5  
& 10 watt



**PW**  
10, 25, 50  
& 100 watt



| Series   | Wattage | P             | Length L       | Height H      |
|----------|---------|---------------|----------------|---------------|
| TA203PA  | 3.0     | 0.200 / 5.08  | 0.50 / 12.70   | 0.60 / 15.24  |
| TA303PA  | 3.0     | 0.300 / 7.62  | 0.50 / 12.70   | 0.60 / 15.24  |
| TA205PA  | 5.0     | 0.200 / 5.08  | 0.50 / 12.70   | 1.00 / 25.40  |
| TA305PA  | 5.0     | 0.300 / 7.62  | 0.50 / 12.70   | 1.00 / 25.40  |
| TA605PA  | 5.0     | 0.600 / 15.24 | 1.00 / 25.40   | 0.50 / 12.70  |
| TA805PA  | 5.0     | 0.800 / 20.32 | 1.00 / 25.40   | 0.50 / 12.70  |
| TA207PA  | 7.5     | 0.200 / 5.08  | 0.75 / 19.05   | 1.00 / 25.40  |
| TA307PA  | 7.5     | 0.300 / 7.62  | 0.75 / 19.05   | 1.00 / 25.40  |
| TA310PA  | 10.0    | 0.300 / 7.62  | 1.00 / 25.40   | 1.00 / 25.40  |
| TA310PW* | 10.0    | 0.300 / 7.62  | 1.085 / 27.56  | 1.00 / 25.40  |
| TA810PA  | 10.0    | 0.800 / 20.32 | 1.00 / 25.40   | 1.00 / 25.40  |
| TA810PW* | 10.0    | 0.800 / 20.32 | 1.085 / 27.56  | 1.00 / 25.40  |
| TA025PA  | 25.0    | 1.90 / 48.3   | 2.220 / 56.39  | 1.170 / 29.70 |
| TA025PY* | 25.0    | 1.90 / 48.3   | 2.220 / 56.39  | 1.170 / 29.70 |
| TA050PA  | 50.0    | 1.90 / 48.3   | 2.220 / 56.39  | 2.270 / 57.60 |
| TA050PY* | 50.0    | 1.90 / 48.3   | 2.220 / 56.39  | 2.270 / 57.60 |
| TA100PA  | 100.0   | 4.10 / 104.1  | 4.420 / 112.27 | 2.270 / 57.60 |
| TA100PY* | 100.0   | 4.10 / 104.1  | 4.420 / 112.27 | 2.270 / 57.60 |

\*10-100 watts available in PW,PA, and PY packages.

### ORDERING INFORMATION

|                                              |                      |                     |                             |                       |
|----------------------------------------------|----------------------|---------------------|-----------------------------|-----------------------|
| <b>Pin spacing</b><br>(on 3-10W models only) |                      | <b>Tolerance</b>    |                             | <b>RoHS compliant</b> |
| 2 = .2"                                      |                      | K = 10%             |                             |                       |
| 3 = .3"                                      |                      | J = 5%              |                             |                       |
| 8 = .8"                                      |                      | F = 1%              |                             |                       |
| <b>T A 3 0 5 P A 4 K 5 0 J E</b>             |                      |                     |                             |                       |
| <b>Series</b>                                | <b>Power Rating:</b> | <b>Package:</b>     | <b>Resistance Value (Ω)</b> |                       |
|                                              | 03 = 3 W             | PA = pin terminals, | R250 = 0.25                 |                       |
|                                              | 05 = 5               | std. for 3-10 W     | 10R0 = 10.0                 |                       |
|                                              | 07 = 7.5             | PW = wraparound,    | 2K00 = 2,000                |                       |
|                                              | 10 = 10              | std. for 10-100 W   | 45K0 = 45,000               |                       |
|                                              | 025 = 25             | PY = high-stability |                             |                       |
|                                              | 050 = 50             | wraparound          |                             |                       |
|                                              | 100 = 100            |                     |                             |                       |

### Standard part numbers for TA series

| Ohmic value | Part Number                      |         |         |         |         |         |         |         |         |         |         |                                  | Ohmic value | Part Number |         |         |         |         |         |         |         |         |         |                                  |         | Ohmic value | Part Number |         |         |         |         |         |         |         |         |   |   |   |
|-------------|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------------------------------|-------------|-------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------------------------------|---------|-------------|-------------|---------|---------|---------|---------|---------|---------|---------|---------|---|---|---|
|             | Part No.<br>Prefix ▶<br>Suffix ▼ | TA203PA | TA303PA | TA205PA | TA305PA | TA207PA | TA310PA | TA810PW | TA025PW | TA050PW | TA100PW | Part No.<br>Prefix ▶<br>Suffix ▼ |             | TA203PA     | TA303PA | TA205PA | TA305PA | TA207PA | TA310PA | TA810PW | TA025PW | TA050PW | TA100PW | Part No.<br>Prefix ▶<br>Suffix ▼ | TA203PA |             | TA303PA     | TA205PA | TA305PA | TA207PA | TA310PA | TA810PW | TA025PW | TA050PW | TA100PW |   |   |   |
|             |                                  |         |         |         |         |         |         |         |         |         |         |                                  |             |             |         |         |         |         |         |         |         |         |         |                                  |         |             |             |         |         |         |         |         |         |         |         |   |   |   |
| 0.25        | —R250J                           | +       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 50.00                            | —50R0J      | +           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 2,500.00                         | —2K50J  | ✓           | ✓           | ✓       | +       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓ | ✓ |   |
| 1.00        | —1R00J                           | ✓       | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 62.00                            | —62R0J      | ✓           | ✓       | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓       | ✓       | 3,000.00                         | —3K00J  | ✓           | ✓           | ✓       | +       | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓ | ✓ |   |
| 1.50        | —1R50J                           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 68.00                            | —68R0J      | ✓           | ✓       | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓       | ✓       | 4,000.00                         | —4K00J  | ✓           | ✓           | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓ | ✓ | ✓ |
| 2.00        | —2R00J                           | +       | ✓       | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓       | ✓       | 75.00                            | —75R0J      | ✓           | ✓       | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓       | ✓       | 4,700.00                         | —4K70J  | ✓           | ✓           | ✓       | +       | +       | +       | ✓       | ✓       | ✓       | ✓       | ✓ | ✓ |   |
| 4.70        | —4R70J                           | ✓       | ✓       | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓       | ✓       | 100.00                           | —100RJ      | +           | ✓       | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓       | ✓       | 5,000.00                         | —5K00J  | ✓           | ✓           | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓ | ✓ | ✓ |
| 5.00        | —5R00J                           | +       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 150.00                           | —150RJ      | ✓           | ✓       | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓       | ✓       | 5,100.00                         | —5K10J  | ✓           | ✓           | ✓       | +       | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓ | ✓ |   |
| 5.10        | —5R10J                           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 200.00                           | —200RJ      | ✓           | ✓       | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓       | ✓       | 7,500.00                         | —7K50J  | ✓           | ✓           | ✓       | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓       | ✓ | ✓ |   |
| 7.50        | —7R50J                           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 250.00                           | —250RJ      | ✓           | ✓       | ✓       | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓       | 10,000.00                        | —10K0J  | +           | ✓           | ✓       | ✓       | +       | +       | +       | +       | ✓       | ✓       | ✓ | ✓ |   |
| 8.20        | —8R20J                           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 270.00                           | —270RJ      | ✓           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 15,000.00                        | —15K0J  | ✓           | ✓           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓ | ✓ |   |
| 10.00       | —10R0J                           | +       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 300.00                           | —300RJ      | +           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 18,000.00                        | —18K0J  | ✓           | +           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓ | ✓ | ✓ |
| 11.00       | —11R0J                           | ✓       | ✓       | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓       | ✓       | 470.00                           | —470RJ      | +           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 20,000.00                        | —20K0J  | ✓           | ✓           | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓ | ✓ | ✓ |
| 12.00       | —12R0J                           | +       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 500.00                           | —560        | +           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 30,000.00                        | —30K0J  | ✓           | ✓           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓ | ✓ | ✓ |
| 15.00       | —15R0J                           | +       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 620.00                           | —620RJ      | ✓           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 39,000.00                        | —39K0J  | ✓           | ✓           | ✓       | ✓       | ✓       | +       | ✓       | ✓       | ✓       | ✓       | ✓ | ✓ | ✓ |
| 20.00       | —20R0J                           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 680.00                           | —680RJ      | ✓           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 50,000.00                        | —50K0J  | ✓           | ✓           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓ | ✓ | ✓ |
| 24.00       | —24R0J                           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 1,000.00                         | —1K00J      | +           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 75,000.00                        | —75K0J  | ✓           | ✓           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓ | ✓ | ✓ |
| 27.00       | —27R0J                           | +       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 1,500.00                         | —1K50J      | ✓           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 100,000                          | —100KJ  | +           | ✓           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓ | ✓ | ✓ |
| 33.00       | —33R0J                           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 1,800.00                         | —1K80J      | ✓           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 150,000                          | —150KJ  | +           | ✓           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓ | ✓ | ✓ |
| 47.00       | —47R0J                           | +       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 2,000.00                         | —2K00J      | +           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | 200,000                          | —200KJ  | ✓           | +           | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓ | ✓ | ✓ |

+= Most popular standard values, ✓ = Stock values