

# 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

| Parameter                       | Value   | Test Condition  | Specification        |
|---------------------------------|---|---|----------------------|
| Substrate                       | Alumina   | Test MILR83401  |                      |
| Resistor                        | Thick Film  |   |                      |
| Coating                         | Glass   |   |                      |
| Terminals                       | Solder Plated Phosphor Bronze   |   |                      |
| Temperature Coefficient         | 1 ohm: 450 ppm/°C<br>1 to 100Ω: 100 ppm/°C<br>101Ω and up: 50 ppm/°C  |   |                      |
| Tolerance                       | ±1%, ±5% and ±10%   |   |                      |
| Power Rating                    | Based on 25°C free air  |   |                      |
| Resistance Range                | 0.25 ohm to 10M ohm. Consult factory for other values   |   |                      |
| Maximum Operating Voltage       | 350 VAC, 500 VDC through glass, 1000 VAC, 1500 VDC through substrate, not to exceed power rating                              |   |                      |
| Overload                        | Five times rated power, as long as the one second average dissipation does not exceed the wattage rating. ΔR: ±2%, 2000 hours |   |                      |
| Derating                        | 100% @ 25°C to 0% @ 180°C ambient.  |   |                      |
| Equivalent Parallel Capacitance | 1.0pf (100 MHz)   |   |                      |
| Withstanding Voltage            | 5000V thru back side  |   |                      |
| Operating Temperature Range     | -55°C to +180°C   |   |                      |
| Overload Current                | 20 x rated current up to 8 ms (ΔR ± 0.5%)   |   |                      |
| Life (Rated Power)              |   | 40°C, rated power, 90 min ON 30 min OFF, 1000 hrs.                      | ΔR ±( 1.0% + 0.05Ω)  |
| Life (Moisture Load)            |   | 60°C, 90 - 95% RH, rated power, 90 min ON 30 min OFF, 1000 hrs.         | ΔR ±( 1.0% + 0.05Ω)  |
| Temperature Cycling             |   | Room temp > -55°C 30 min > RT 10 min ± 120°C 30 min > RT10 min 5 cycles | ΔR ±( 0.25% + 0.05Ω) |
| Flammability                    |   | UL94V-O rated (not recognized)  |                      |
| Soldering Heat                  |   | 350°C Solderpot, 3 secs.  | ΔR ±( 0.25% + 0.05Ω) |
| Insulation Resistance           |   | 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

Pin spacing (on 3-10W models only)  
 2 = .2"  
 3 = .3"  
 8 = .8"

Tolerance  
 K = 10%  
 J = 5%  
 F = 1%

RoHS compliant

**TA 3 0 5 PA 4 K 5 0 J E**

Series: TA  
 Power Rating: 3 = 3W, 05 = 5W, 07 = 7.5W, 10 = 10W, 025 = 25W, 050 = 50W, 100 = 100W  
 Package: PA = pin terminals, std. for 3-10W; PW = wraparound, std. for 10-100W; PY = high-stability wraparound  
 Resistance Value (Ω): R250 = 0.25, 10R0 = 10.0, 2K00 = 2,000, 45K0 = 45,000

### Standard part numbers for TA series

| Ohmic value | Part No. Prefix Suffix | Part Number | Ohmic value | Part No. Prefix Suffix | Part Number | Ohmic value | Part No. Prefix Suffix | Part Number |
|-------------|------------------------|-------------|-------------|------------------------|-------------|-------------|------------------------|-------------|
| 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