

# 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

| Substrate Alumina               |                                                                                                                               | Test Condition MILR83401 |                                                                            | Specification           |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------|-------------------------|
| Resistor                        | Thick Film                                                                                                                    | Test                     |                                                                            |                         |
| Coating                         | Glass                                                                                                                         | Life (Rated Power)       | 40°C, rated power, 90 min ON 30 min OFF, 1000 hrs.                         | ΔR<br>±( 1.0% + 0.05Ω)  |
| Terminals                       | Solder Plated Phosphor Bronze                                                                                                 | Life (Moisture Load)     | 60°C, 90 - 95% RH, rated power, 90 min ON 30 min OFF, 1000 hrs.            | ΔR<br>±( 1.0% + 0.05Ω)  |
| Temperature Coefficient         | 1 ohm: 450 ppm/°C<br>1 to 100Ω: 100 ppm/°C<br>101Ω and up: 50 ppm/°C                                                          | Temperature Cycling      | Room temp > -55°C<br>30 min > RT 10 min ± 120°C 30 min > RT10 min 5 cycles | ΔR<br>±( 0.25% + 0.05Ω) |
| Tolerance                       | ±1%, ±5% and ±10%                                                                                                             | Flammability             | UL94V-O rated (not recognized)                                             |                         |
| Power Rating                    | Based on 25°C free air                                                                                                        | Soldering Heat           | 350°C Solderpot, 3 secs.                                                   | ΔR<br>±( 0.25% + 0.05Ω) |
| Resistance Range                | 0.25 ohm to 10M ohm. Consult factory for other values                                                                         | Insulation Resistance    | DC 100V, 1 min                                                             | Over 1000M ohm          |
| 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%)                                                                                     |                          |                                                                            |                         |

(continued)

rev 6/18-1

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### 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<br>(on 3-10W models only) |  | Tolerance |  | RoHS compliant |
|---------------------------------------|--|-----------|--|----------------|
| 2 = .2"                               |  | K = 10%   |  |                |
| 3 = .3"                               |  | J = 5%    |  |                |
| 8 = .8"                               |  | F = 1%    |  |                |

  

| Series | Power Rating: | Package:            | Resistance Value (Ω) |
|--------|---------------|---------------------|----------------------|
| TA     | 03 = 3 W      | PA = pin terminals, | R250 = 0.25          |
| 3      | 05 = 5        | std. for 3-10 W     | 10R0 = 10.0          |
| 0      | 07 = 7.5      | PW = wraparound,    | 2K00 = 2,000         |
| 5      | 10 = 10       | std. for 10-100 W   | 45K0 = 45,000        |
| P      | 025 = 25      | PY = high-stability |                      |
| A      | 050 = 50      | wraparound          |                      |
| 4      | 100 = 100     |                     |                      |
| K      |               |                     |                      |
| 5      |               |                     |                      |
| 0      |               |                     |                      |
| J      |               |                     |                      |
| E      |               |                     |                      |

Standard part numbers for TA series

| Ohmic value | Part No.<br>Prefix ▶<br>Suffix ▼ | Part Number | Ohmic value | Part No.<br>Prefix ▶<br>Suffix ▼ | Part Number | Ohmic value | Part No.<br>Prefix ▶<br>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



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**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331