

PRODUCT BULLETIN



PRC-SERIES

PRECISION SURFACE MOUNT

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- THIN FILM
- STANDARD INDUSTRY CASE SIZES
0201 0402 0603 0805 1206 1210 2010
- POWER RATINGS 1/20W, 1/16W, 1/10W
1/8W, 1/4W & 1/2W
- TEMPERATURE COEFFICIENTS
TO 2PPM°C
- RESISTANCE TOLERANCES
TO 0.05%
- CUSTOM VALUES TO 3 DECIMAL PLACES
- PACKAGING IS TAPE & REEL
1,000; 5,000; 10,000 pcs.

Specifications

| TYPE | RATED PWR | MAX CWV | INCHES MILLIMETERS | | | |
|----------|-----------|---------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | | | L | W | H | P |
| PRC 0201 | 1/20W | 15V | 0.024 ±0.002 (0.60±0.05) | 0.012 ±0.002 (0.30±0.05) | 0.009 ±0.001 (0.23±0.03) | 0.005 ±0.002 (0.12±0.05) |
| PRC 0402 | 1/16W | 25V | 0.390 ±0.002 (1.00±0.05) | 0.020 ±0.002 (0.50±0.05) | 0.014 ±0.002 (0.35±0.05) | 0.008 ±0.004 (0.20±0.10) |
| PRC 0603 | 1/16W | 75V | 0.063 ±0.004 (1.60±0.10) | 0.031 ±0.004 (0.08±0.10) | 0.020 ±0.004 (0.50±0.10) | 0.008 ±0.004 (0.20±0.10) |
| PRC 0805 | 1/10W | 100V | 0.079 ±0.006 (2.00±0.15) | 0.049 ±0.006 (1.25±0.15) | 0.020 ±0.006 (0.50±0.15) | 0.016 ±0.010 (0.40±0.25) |
| PRC 1206 | 1/8W | 150V | 0.126 ±0.006 (3.20±0.15) | 0.063 ±0.006 (1.60±0.15) | 0.024 ±0.006 (0.60±0.15) | 0.020 ±0.010 (0.50±0.25) |
| PRC 1210 | 1/4W | 200V | 0.126 ±0.006 (3.20±0.15) | 0.098 ±0.006 (2.50±0.15) | 0.022 ±0.006 (0.56±0.15) | 0.020 ±0.010 (0.50±0.25) |
| PRC 2010 | 1/2W | 200V | 0.200 ±0.006 (5.00±0.15) | 0.100 ±0.006 (2.50±0.15) | 0.022 ±0.006 (0.56±0.15) | 0.024 ±0.010 (0.60±0.25) |

Operating Temperature Range is **-55°C to +125°C**
 * **-20°C to +85°C**

Temperature Coefficients

TC50 = ±50 PPM/°C TC10 = ±10 PPM/°C
 TC25 = ±25 PPM/°C TC5 = ±5 PPM/°C
 TC2 = ±2 PPM/°C *

Resistance Ranges

Refer to Capability Sheet for available ranges
 Contact factory for custom values

Resistance Tolerances

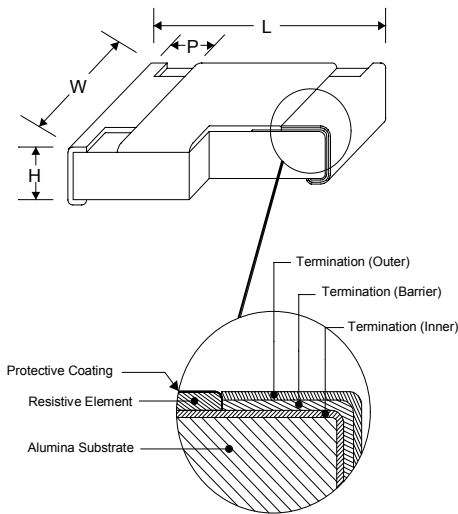
0.05% 0.1% 0.5% 1.0%

How to Order

Sample Part

PRC 0805 TC10 56.2R ±0.05%

Resistance Tolerance
 Resistance Value
 Temperature Coefficient
 Case Size
 Type



DEDICATION TO EXCELLENCE

Data subject to change without notice

Continued on reverse side

REV C 9/19/01

TYPICAL RELIABILITY TEST DATA AND SPECIFICATIONS

| Characteristic | Test Conditions | Result | | | | Specification |
|------------------------------|--|--------------------------|-------------------------|---------|---------|--|
| | | Value | Max. | Min. | Avg. | |
| MOISTURE LOAD LIFE | 60°C 95%RH Rated voltage for 1½ hours ON, ½ hour OFF. 1000 hours | 100 Ω | 0.027% | 0.003% | 0.014% | ΔR within ±0.5% |
| | | 10 KΩ | 0.019% | -0.008% | 0.005% | |
| | | 100 KΩ | 0.023% | -0.024% | 0.014% | |
| TEMPERATURE CYCLE | -55°C~RT~ +155°C~RT 30 min. ON 3 min. OFF 5 cycles | 100 Ω | 0.036% | -0.010% | 0.007% | ΔR within ±0.25% |
| | | 10 KΩ | 0.005% | 0.002% | 0.000% | |
| | | 100 KΩ | 0.011% | -0.006% | 0.002% | |
| HIGH TEMPERATURE | 175°C No load 1000 hours | 100 Ω | 0.254% | 0.156% | 0.194% | ΔR within ±0.5% |
| | | 10 KΩ | 0.263% | 0.130% | 0.158% | |
| | | 100 KΩ | 0.380% | 0.194% | 0.250% | |
| RANDOM VIBRATION | 10~50Hz 3 directions each 2 hours | 100 Ω | 0.008% | -0.008% | 0.003% | ΔR within ±0.25% without mechanical damage. |
| | | 10 KΩ | 0.006% | -0.001% | 0.002% | |
| | | 100 KΩ | 0.006% | 0.001% | 0.003% | |
| MECHANICAL SHOCK | Acceleration 50G Axis 11 msec. x 3 Total 18 cycles | 100 Ω | 0.008% | 0.002% | 0.005% | ΔR within ±0.25% without mechanical damage. |
| | | 10 KΩ | 0.008% | -0.002% | 0.003% | |
| | | 100 KΩ | 0.017% | 0.003% | 0.007% | |
| RESISTANCE TO SOLDERING HEAT | Solder temperature 275°C for 20 sec. ±1sec. | 100 Ω | 0.061% | -0.012% | 0.013% | ΔR within ±0.1% |
| | | 10 KΩ | -0.018% | -0.044% | -0.024% | |
| | | 100 KΩ | -0.020% | -0.045% | -0.033% | |
| SOLDERABILITY | Solder temperature 230°C ±5°C for 3 sec. ±1 sec. | 100 Ω 10 KΩ 100 KΩ | 100% MEET SPECIFICATION | | | Minimum 95% of the electrode surface covered. |
| SHORT TIME OVERLOAD | 2.5 times to rated voltage for 5 seconds | 100 Ω | 0.012% | -0.009% | -0.001% | ΔR within ±0.25% |
| | | 10 KΩ | 0.000% | -0.018% | -0.001% | |
| | | 100 KΩ | 0.012% | -0.008% | 0.000% | |
| HUMIDITY | 60°C, 95%RH No load 1000Hour | 100 Ω | 0.083% | 0.002% | 0.027% | ΔR within ±0.25% |
| | | 10 KΩ | 0.005% | 0.001% | 0.003% | |
| | | 100 KΩ | 0.018% | 0.008% | 0.012% | |
| LOAD LIFE | 70°C Rated voltage for 1½ hours ON, ½ hour OFF. 1000 hours | 100 Ω | 0.052% | -0.057% | 0.009% | ΔR within ±0.5% |
| | | 10 KΩ | 0.017% | -0.009% | 0.007% | |
| | | 100 KΩ | 0.018% | -0.001% | 0.007% | |

Derating Curve

must be derated in accordance with the curve in the graph below.

