

PCR Series

Pulse Withstanding Chip Resistors



- Resistances from 1 Ohm to 20MOhms
- Power Rating 0.125 to 1.5 Watt
- Resistance Tolerances to $\pm 5\%$
- Excellent pulse withstanding performance
- TCR's to ± 100 ppm/ $^{\circ}\text{C}$
- Sizes: 0603 / 0805 / 1206 / 1210 / 2010 / 2512

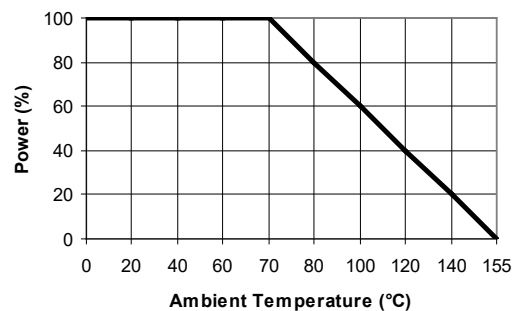
SPECIFICATIONS

| Type | PCR0603 | PCR0805 | PCR1206 | PCR1210 | PCR2010 | PCR2512 |
|-------------------------------------|--|--|--|---------|---------|---------|
| Power Rating (W) at 70°C | 0.125 | 0.25 | 0.33 | 0.50 | 0.75 | 1.5 |
| Resistance Range (Ω) (E24) | 10 to 1M | 1 to 20M | | | | |
| MAX Operating Voltage ¹ | 50V | 150V | 200V | 200V | 400V | 500V |
| Tolerances ² | 5% / 10% / 20% | | | | | |
| TCR | 10 Ω - 270 Ω : 200ppm 300 Ω - 1M: 100ppm | 1 Ω - 270 Ω : 200ppm 300 Ω - 20M: 100ppm | 1 Ω - 20 Ω :200ppm 22 Ω - 20M:100ppm | | | |

¹ Operating Voltage = $\sqrt{P \cdot R}$ or MAX Listed, whichever is lower. | ² Additional tolerances upon request. 1% tolerance supported on PCR2512 10K and 10M for example

| | Type | Quantity / Tape Diameter |
|---------|----------|-----------------------------------|
| PCR0603 | Paper | 5K / 7" 10K / 10" 20K / 13" |
| PCR0805 | | |
| PCR1206 | | |
| PCR1210 | | |
| PCR2010 | Embossed | 4K / 7" 8K / 10" |
| PCR2512 | | |

Power Derating Curve



Ordering Information

Part Description: Part Type - Resistance - Tolerance - TCR - Packaging

Example: PCR0603 10 Ohm 5% 200ppm

(Note: if no TCR is specified: The highest value will be supplied)

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Specifications

| Test | Specification | Test Method |
|------------------------------|--|---|
| TCR | see above | -55°C~+125°C, 25°C is the reference temperature |
| Short Time Overload | $\pm(1.0\%+0.05\Omega)$ | RCWV*2.5 or Max. overload voltage for 5 seconds |
| Insulation Resistance | $\geq 10G$ | Max. overload voltage for 1 minute |
| Load Life | $\pm(3.0\%+0.05\Omega)$ | 70 \pm 2°C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF" |
| Damp Heat with Load | $\pm(3.0\%+0.05\Omega)$ | 40 \pm 2°C, 90~95% R.H. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF" |
| Dry Heat | $\pm(3.0\%+0.05\Omega)$ | at +155°C for 1000 hrs |
| Bending Strength | $\pm(1.0\%+0.05\Omega)$ | Bending once for 5 seconds 2010, 2512 sizes: 2mm Other sizes: 3mm |
| Solderability | 95% min. coverage | 245 \pm 5°C for 3 seconds |
| Resistance to Soldering Heat | $\pm(1.0\%+0.05\Omega)$ | 260 \pm 5°C for 10 seconds |
| Voltage Proof | No breakdown or flashover | 1.42 times RCWV (RMS) for 1 minute |
| Leaching | Individual leaching area $\leq 5\%$ Total leaching area $\leq 10\%$ | 260 \pm 5°C for 30 seconds |
| Rapid Change of Temperature | $\pm(1.0\%+0.05\Omega)$ | -55°C to +155°C, 5 cycles |
| RoHS Compliant exemption | Ex- | This part is RoHS compliant with exemption 7(c)-I, as authorized by 2011/b5/EU. |



| Type | Dimensions inches / [mm] | | | |
|----------|--|---|--|---------------------------------------|
| | L | B | D | C |
| PCR 0603 | 0.060 \pm 0.004 / [1.6 \pm 0.1] | 0.030 \pm 0.004 / [0.8 \pm 0.1] | 0.018 \pm 0.004 / [0.45 \pm 0.1] | 0.012 \pm 0.008 / [0.3 \pm 0.2] |
| PCR 0805 | 0.080 \pm 0.004 / [2.0 \pm 0.1] | 0.050 \pm 0.004 / [1.25 \pm 0.1] | 0.020 \pm 0.004 / [0.50 \pm 0.1] | 0.016 \pm 0.008 / [0.4 \pm 0.2] |
| PCR 1206 | 0.120 \pm 0.004 / [3.1 \pm 0.1] | 0.060 \pm 0.006 / [1.55 \pm 0.15] | 0.022 \pm 0.004 / [0.55 \pm 0.1] | 0.020 \pm 0.008 / [0.5 \pm 0.2] |
| PCR 1210 | 0.120 \pm 0.004 / [3.1 \pm 0.1] | 0.100 \pm 0.006 / [2.6 \pm 0.15] | 0.022 \pm 0.004 / [0.55 \pm 0.1] | 0.020 \pm 0.008 / [0.5 \pm 0.2] |
| PCR 2010 | 0.200 \pm 0.004 / [5.0 \pm 0.1] | 0.100 \pm 0.006 / [2.5 \pm 0.15] | 0.022 \pm 0.004 / [0.55 \pm 0.1] | 0.020 \pm 0.008 / [0.5 \pm 0.2] |
| PCR 2512 | 0.250 \pm 0.004 / [6.35 \pm 0.1] | 0.120 \pm 0.006 / [3.1 \pm 0.15] | 0.022 \pm 0.004 / [0.55 \pm 0.1] | 0.020 \pm 0.008 / [0.5 \pm 0.2] |

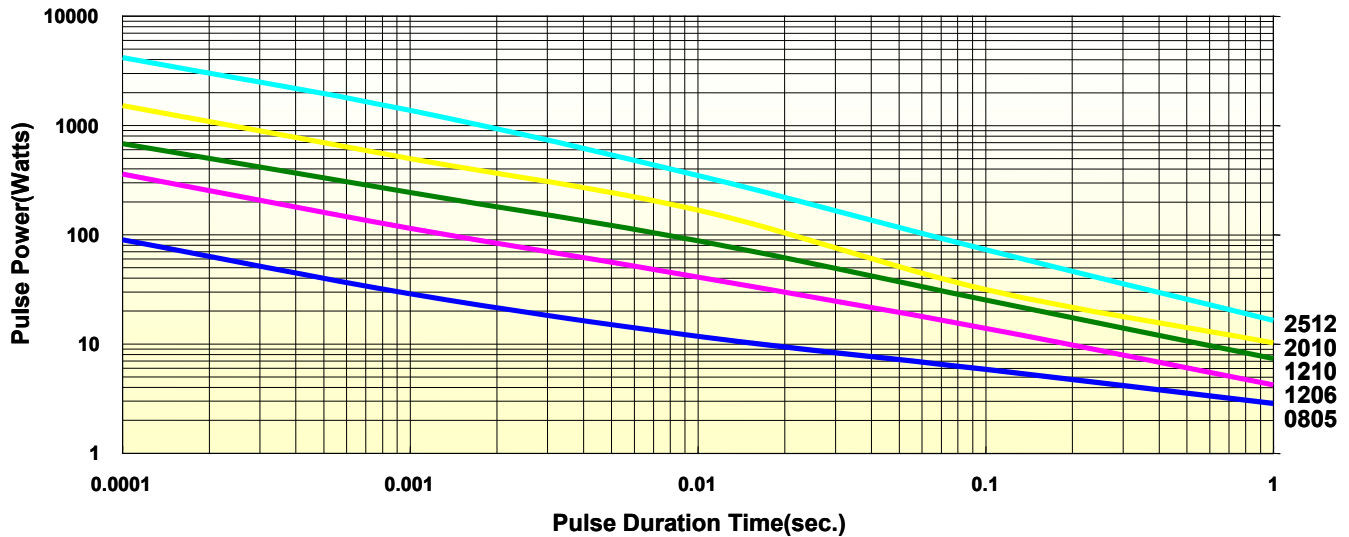
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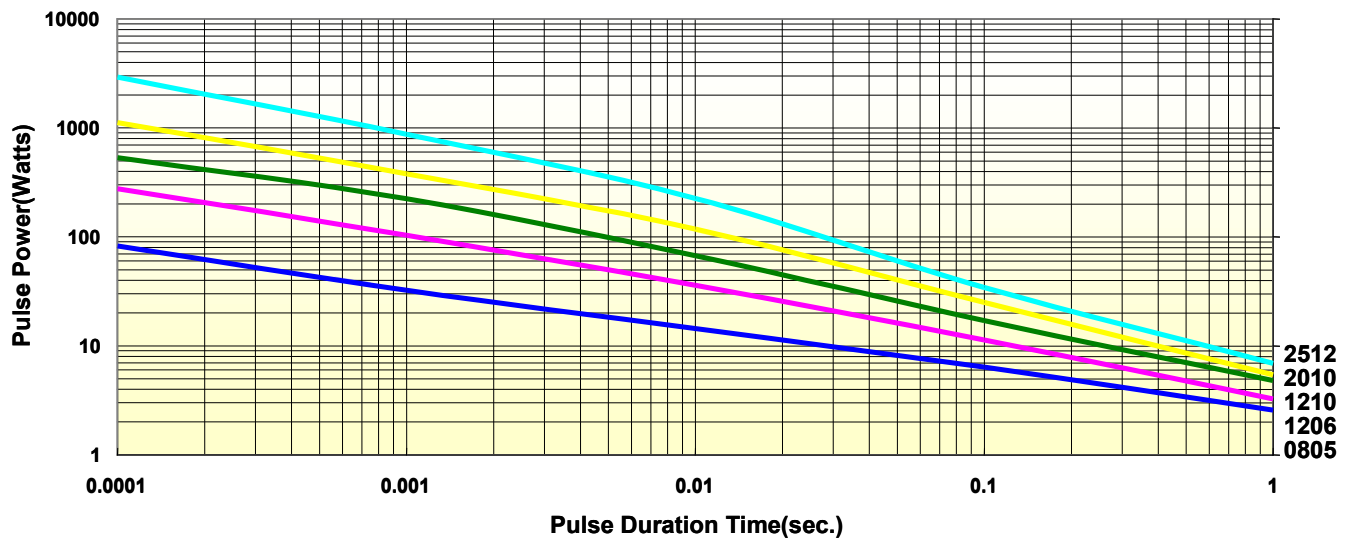
Pulse Graphs

Single Pulse



¹Result of 50 rectangular pulses at 1 min intervals
²<1% deviation from initial value

Continuous Pulse



¹Result of rectangular pulses at intervals causing max power rating at 70C
²<1% deviation from initial value