



High power thin film chip resistors (long side terminal)

■ PRG series

AEC-Q200 Compliant

Features

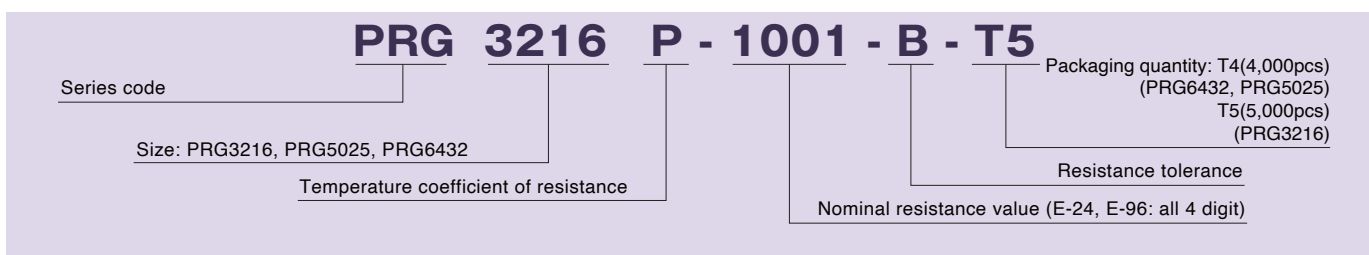
- Long side terminal enabling higher power capability
- Significantly larger power handling capability than conventional same size resistors
Size: 3216 ~ 6432, power ratings: 0.5 ~ 3.0W, Resistance range: 2.5 ~ 250KΩ
- Precision resistance tolerance: $\pm 0.1\%$, very small TCR: $\pm 25\text{ppm}/^\circ\text{C}$
- Thin film structure enabling low noise and anti-sulfur

Applications

- Automotive electronics
- DC motor, inverters
- Robotics, Industrial control system



◆ Part numbering system



◆ Electrical Specification

| Type | Power ratings | Temperature coefficient of resistance | Resistance range(Ω) Resistance tolerance | | Maximum voltage | Resistance value series | Operating temperature | Packaging quantity | | | | | |
|---------|---------------|---------------------------------------|---|-------------------------------|-----------------|-------------------------|--|--------------------|--|----|------------|--|----|
| | | (ppm/°C) | $\pm 0.1\%$ (B) | $\pm 0.5\%$ (D) | | | | | | | | | |
| PRG3216 | 1.0W | ± 25 (P) | $47 \leq R \leq 100\text{k}$ | $10 \leq R \leq 100\text{k}$ | 150V | E-24, E-96 | $-55^\circ\text{C} \sim 155^\circ\text{C}$ | T5 | | | | | |
| | | ± 50 (Q) | | $2.5 \leq R \leq 100\text{k}$ | | | | | | | | | |
| PRG5025 | 1.5W ~ 2.0W | ± 25 (P) | $47 \leq R \leq 200\text{k}$ | $10 \leq R \leq 200\text{k}$ | 200V | | | E-24, E-96 | $-55^\circ\text{C} \sim 155^\circ\text{C}$ | T4 | | | |
| | | ± 50 (Q) | | $2.5 \leq R \leq 200\text{k}$ | | | | | | | | | |
| PRG6432 | 2.0W ~ 3.0W | ± 25 (P) | $47 \leq R \leq 250\text{k}$ | $10 \leq R \leq 250\text{k}$ | 400V | | | | | | E-24, E-96 | $-55^\circ\text{C} \sim 155^\circ\text{C}$ | T4 |
| | | ± 50 (Q) | | $2.5 \leq R \leq 250\text{k}$ | | | | | | | | | |

◆Dimensions



| Type | Size (inch) | W | L | a | b | t |
|---------|-------------|-----------------|-----------|-----------|-----------|-----------------|
| PRG3216 | 1206 | 3.20+0.40/-0.20 | 1.60±0.20 | 0.30±0.20 | 0.35±0.20 | 0.45+0.15/-0.10 |
| PRG5025 | 2010 | 5.00±0.20 | 2.50±0.20 | 0.55±0.20 | 0.60±0.20 | 0.45+0.15/-0.10 |
| PRG6432 | 2512 | 6.40+0.20/-0.40 | 3.20±0.20 | 0.40±0.20 | 0.55±0.20 | 0.45+0.15/-0.10 |

(unit : mm)

Thin film surface mount resistors

PRG series

◆Reliability specification

| Test items | Condition (test methods (JIS C5201-1)) | Standard | |
|--------------------------------|---|----------------|----------------|
| | | ≤47Ω | ≥47Ω |
| Life (biased) | 70°C, rated voltage ^{*1} 90min on 30min off, 1000hours | ±(0.25%+0.05Ω) | ±(0.1%+0.01Ω) |
| High temperature high humidity | 85°C, 85%RH, 1/10 of rated power, 90min on 30min off, 1000hours | ±(0.25%+0.05Ω) | ±(0.1%+0.01Ω) |
| Temperature shock | -55°C (30min) ~ 125°C (30min) 1000cycles | ±(0.25%+0.05Ω) | ±(0.1%+0.01Ω) |
| High temperature exposure | 155°C, no bias, 1000hours | ±(0.25%+0.05Ω) | ±(0.1%+0.01Ω) |
| Resistance to soldering heat | 260±5°C, 10 seconds (reflow) | ±(0.1%+0.01Ω) | ±(0.05%+0.01Ω) |

*1 Rated voltage is given by $E = \sqrt{R \times P}$

E= rated voltage (V), R=nominal resistance value(Ω), P=rated power(W)

If rated voltage exceeds maximum voltage /element, maximum voltage/element is the rated voltage.

High power thin film chip resistors (long side terminal)

PRG series

Reliability test data

Biased life test

Thin film surface mount resistors

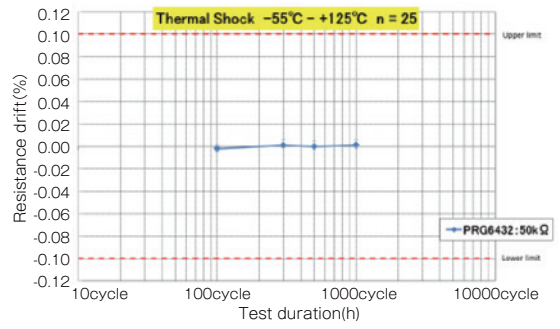
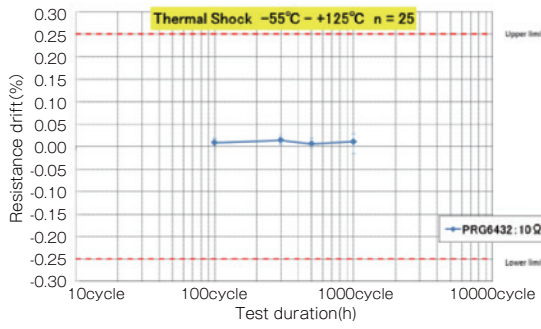
PRG series



High temperature high humidity (biased)



○ Temperature shock



○ High temperature exposure



◆ Derating Curve

○ PRG3216



○ PRG6432



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Susumu:](#)

[PRG3216Q-4301-D-T5](#)