



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)	±0.1% (B)	±0.5% (D)				
PRG3216	1.0W	±25(P)	47≤R≤100k	10≤R≤100k	150V	E-24, E-96	-55℃ ~ 155℃	T5
		±50(Q)		2.5≤R≤100k				
PRG5025	1.5W ~ 2.0W	±25(P)	47≤R≤200k	10≤R≤200k	200V			T4
		±50(Q)		2.5≤R≤200k				
PRG6432	2.0W ~ 3.0W	±25(P)	47≤R≤250k	10≤R≤250k	400V			
		±50(Q)		2.5≤R≤250k				

◆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.

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Reliability test data

Biased life test



High temperature high humidity (biased)



○ Temperature shock



○ High temperature exposure



◆ Derating Curve

○ PRG3216



○ PRG6432



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