High power thin film chip resistors
(long side terminal)

■PRG series **AEC-Q200 Compliant**

Lead free　Halogen free　RoHS Compliance

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: ±0.1%, very small TCR: ±25ppm/°C
- Thin film structure enabling low noise and anti-sulfur

Applications

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

◆Part numbering system

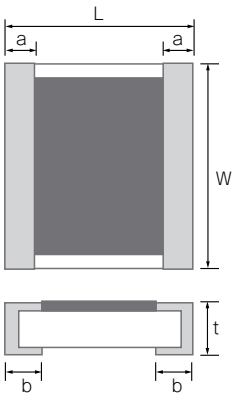
PRG 3216 P - 1001 - B - T5

- PRG: Series code
- 3216: Size: PRG3216, PRG5025, PRG6432
- P: Temperature coefficient of resistance
- 1001: Nominal resistance value (E-24, E-96: all 4 digit)
- B: Resistance tolerance
- T5: Packaging quantity: T4(4,000pcs) (PRG6432, PRG5025) T5(5,000pcs) (PRG3216)

◆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)

◆Reliability specification

Test items	Condition (test methods (JIS C5201-1)	Standard	
		≦47Ω	≧47Ω
Life (biased)	70℃, rated voltage,*1 90min on 30min off, 1000hours	±(0.25%+0.05Ω)	±(0.1%+0.01Ω)
High temperature high humidity	85℃, 85%RH, 1/10 of rated power, 90min on 30min off, 1000hours	±(0.25%+0.05Ω)	±(0.1%+0.01Ω)
Temperature shock	-55℃ (30min) ~ 125℃ (30min) 1000cycles	±(0.25%+0.05Ω)	±(0.1%+0.01Ω)
High temperature exposure	155℃, no bias, 1000hours	±(0.25%+0.05Ω)	±(0.1%+0.01Ω)
Resistance to soldering heat	260±5℃, 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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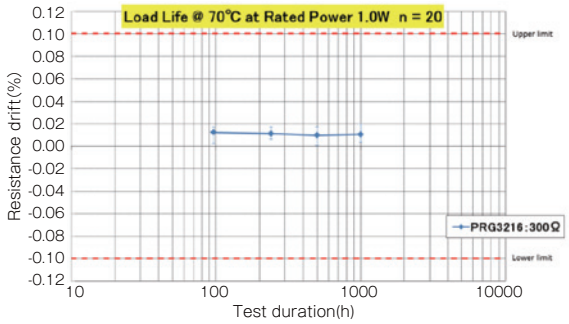
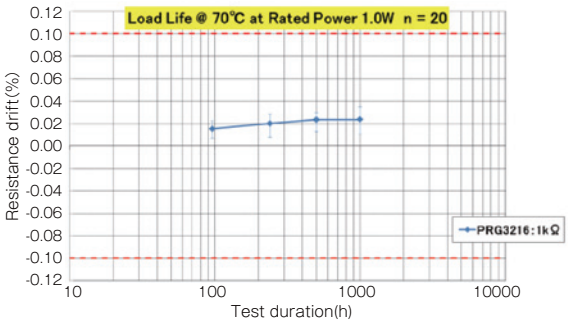
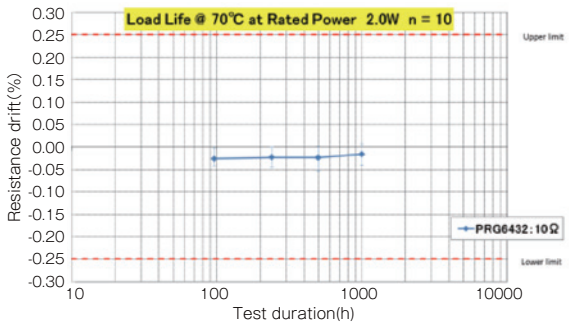
◆Reliability test data

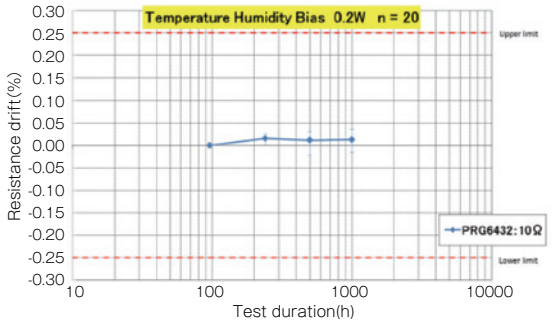
○Biased life test

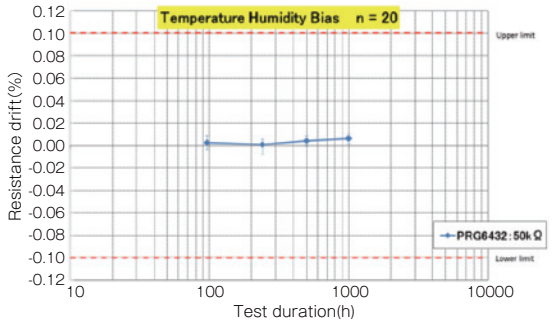


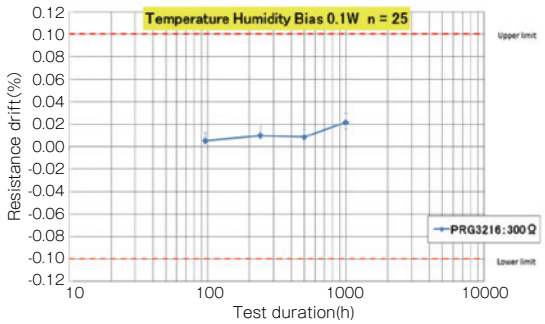


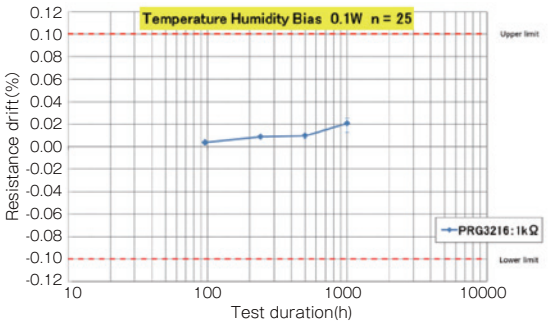


○High temperature high humidity (biased)

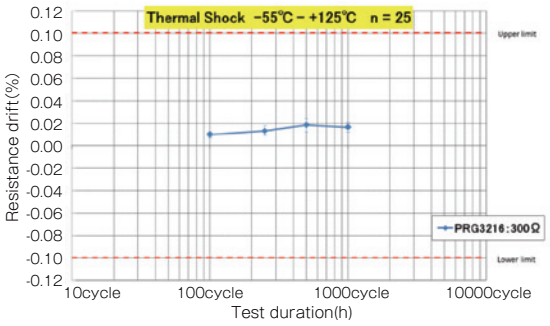


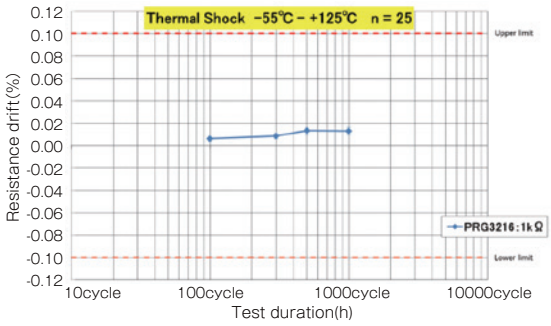


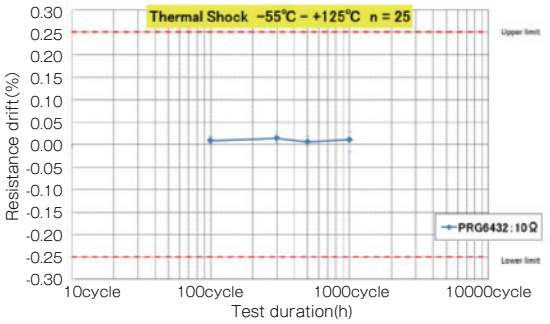


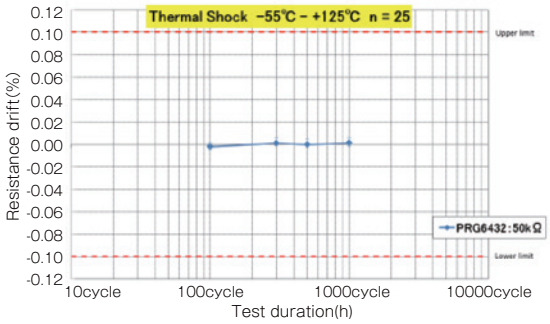


○Temperature shock

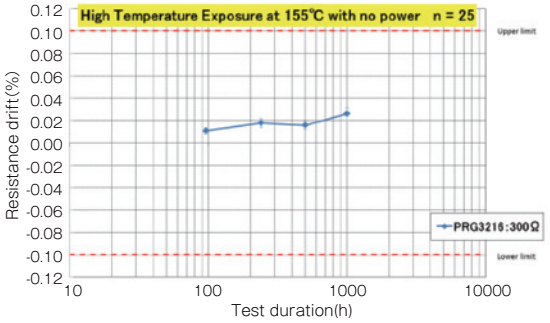


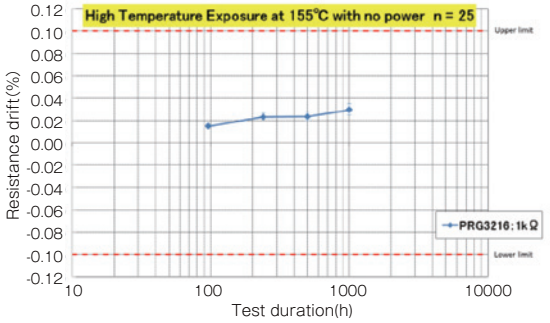


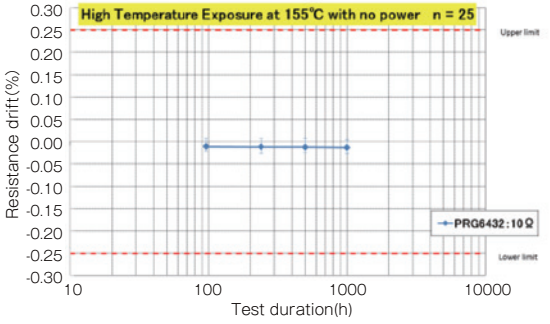


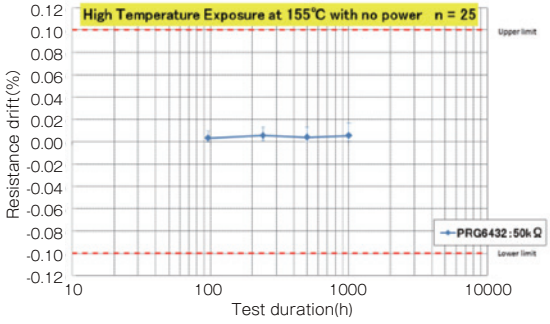


○High temperature exposure



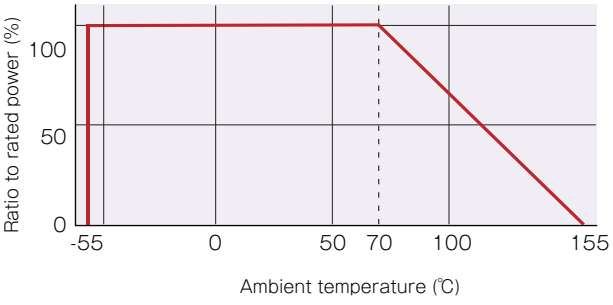






◆Derating Curve

○PRG3216



○PRG6432