Lead free　Halogen free　RoHS Compliance

Metal thin film chip resistors
(the highest reliability and precision)

■URG series　　**AEC-Q200 Compliant**

Features

- The tightest resistance tolerance: +/-0.01%
- The smallest temperature coefficient of resistance: ±1ppm/℃
- Long term stability with inorganic passivation
- Thin film structure enabling low noise and anti-sulfur

Applications

- Industrial measurement instrumentaion, electrical scales
- High precision sensors, medical electronics

◆Part numbering system

URG　2012　L - 102 - L - T1

- URG: Series code
- 2012: Size: URG1608, URG2012, URG3216, URG5025, URG6432
- L: Temperature coefficient of resistance
- 102: Nominal resistance value (E-24: 3 digit, E-96: 4 digit, URG3216, URG5025, URG6432: all 4 digit)
- L: Resistance tolerance
- T1: Packaging quantity: T1(1,000pcs), T05(500pcs), T01(100pcs)

◆Electrical Specification

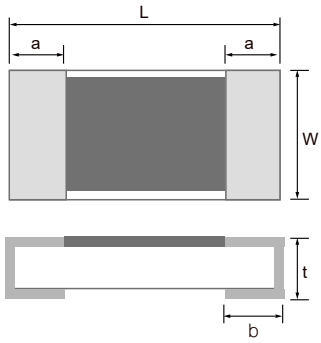
Type	Power ratings	Temperature coefficient of resistance	Resistance range(Ω) Resistance tolerance ±0.01% (L)	±0.02% (P)	±0.05% (W)	±0.1% (B)	±0.5% (D)	Maximum voltage	Resistance value series	Operating temperature	Packaging quantity
URG1608	1/16W	±1(K) *1	250 ≦R ≦7.5K	100≦R≦7.5k				100V	E24, E96	-55℃ ~ 155℃	T1
		±2(L) *2									
URG2012	1/10W	±1(K) *1	250 ≦R ≦36K	100≦R≦36k				150V			T05
		±2(L) *2									
URG3216	1/4W	±1(K) *1	250 ≦R ≦68K	100≦R≦68k				200V			T01
		±2(L) *2									
URG5025	1/2W	±1(K) *1	250 ≦R ≦100K	100≦R≦150k				300V			
		±2(L) *2									
URG6432	3/4W	±1(K) *1	250 ≦R ≦100K	100≦R≦200k				300V			
		±2(L) *2									

*1: Applicable TCR K (±1.0) at temperature range 25℃~ 65℃
Applicable TCR K (±1.5) at temperature range -20℃~ 25℃, 65℃~125℃

*2: Applicable TCR L at temperature range -20℃~ 125℃

***Contact us for requirements not listed in above table.**

◆Dimensions



Type	Size (inch)	L	W	a	b	t
URG1608	0603	1.60±0.20	0.80+0.25/−0.20	0.30±0.20	0.30±0.20	0.40+0.15/−0.10
URG2012	0805	2.00±0.20	1.25+0.25/−0.20	0.40±0.20	0.40±0.20	0.40+0.15/−0.10
URG3216	1206	3.20±0.20	1.60±0.25	0.50±0.25	0.50±0.20	0.40+0.15/−0.10
URG5025	2010	5.00±0.20	2.50±0.25	0.60±0.25	0.60±0.25	0.45±0.10
URG6432	2512	6.40+0.20/−0.40	3.20±0.25	0.75±0.25	0.80±0.20	0.45±0.20

(unit : mm)

◆Reliability specification

Test items	Condition (test methods (MIL-PRF-55342/JIS C5201-1)	Standard
Short time overload	2.5 x rated voltage,*1 5seconds	±(0.02%+0.01Ω)
Life (biased)	70℃, rated voltage,*1 90min on 30min off, 2000hours	±(0.02%+0.01Ω)(R≧250Ω)
		±(0.05%+0.01Ω)(R<250Ω)
High temperature high humidity	85℃, 85%RH, 1/10 of rated power, 90min on 30min off, 1000hours	±(0.05%+0.01Ω)
Temperature shock	-65℃ (15min) ~ 150℃ (15min) 100cycles	±(0.02%+0.01Ω)
High temperature exposure	155℃, no bias, 1000hours	±(0.05%+0.01Ω)
Resistance to soldering heat	235±5℃, 30 seconds (reflow), (by MIL-PRF-55342)	±(0.01%+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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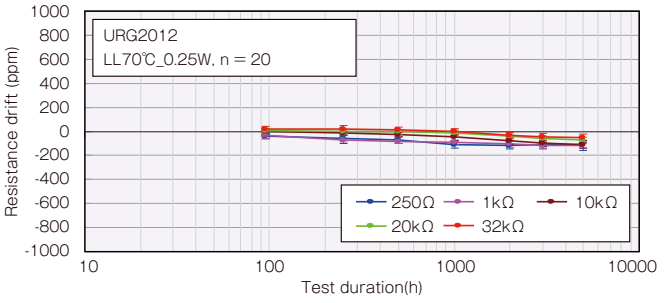
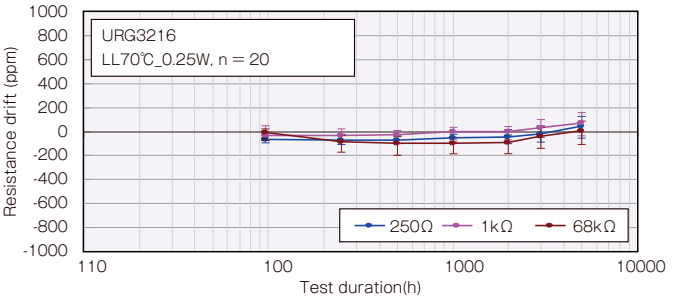
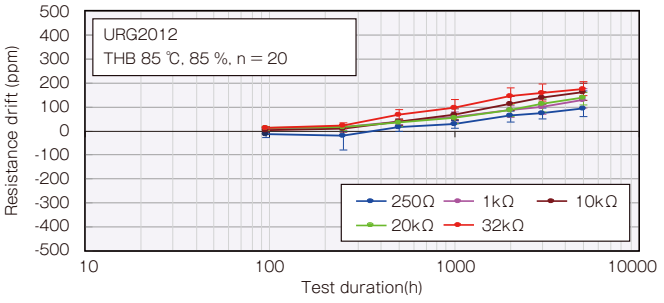
◆Reliability test data

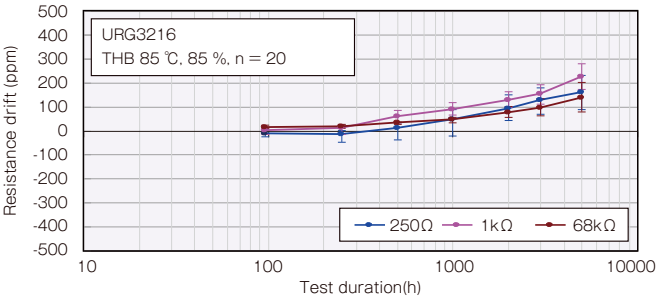
○Biased life test



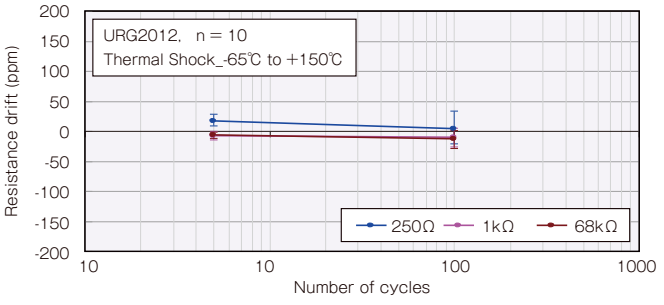


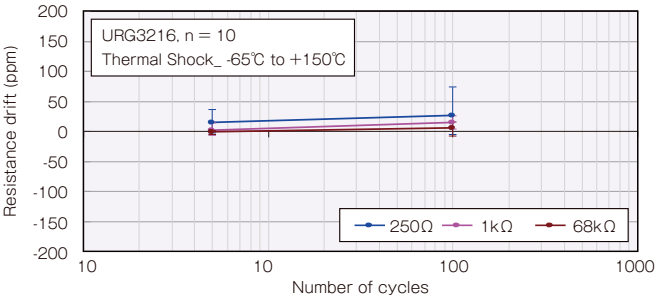
○High temperature high humidity (biased)



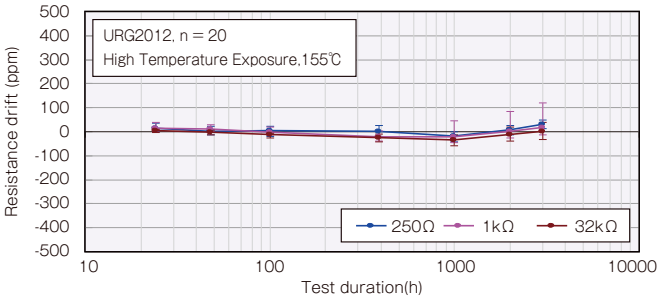


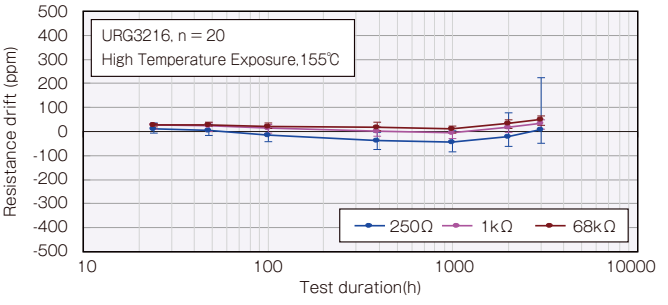
○Temperature shock





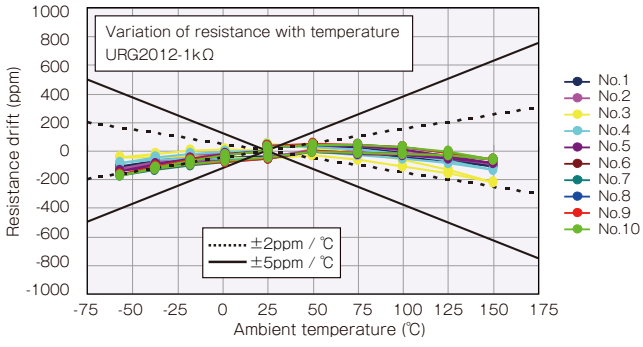
○High temperature exposure

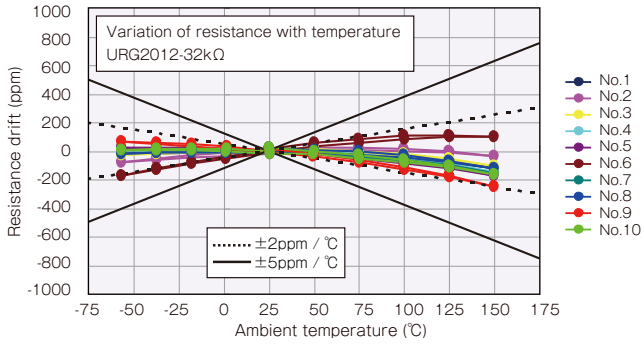




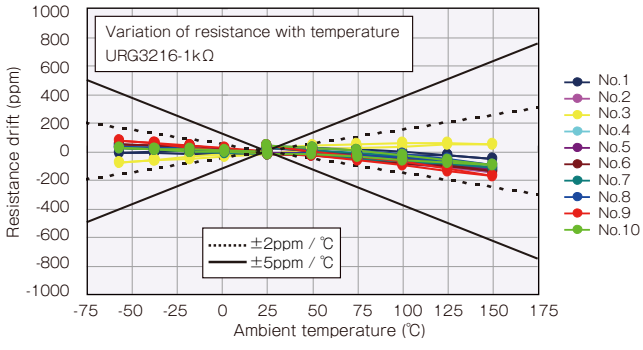
◆Temperature coefficient of Resistance

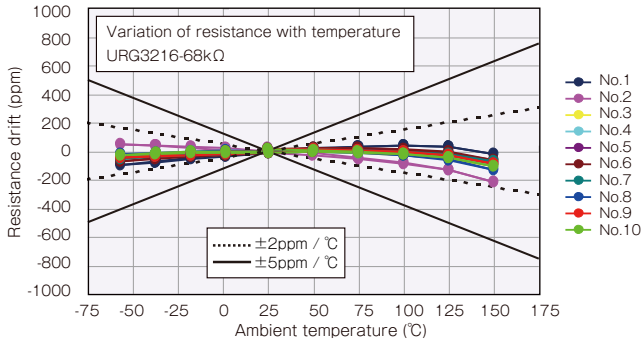
○URG2012



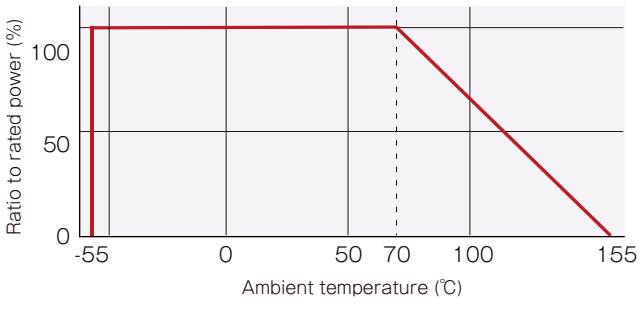


○URG3216





◆Derating Curve



Mouser Electronics

Authorized Distributor

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

Susumu:

URG3216L-152-L-T05 URG3216L-221-L-T05 URG3216L-681-L-T05 URG3216L-333-L-T05 URG2012L-331-L-T05 URG2012L-681-L-T05 URG2012L-682-L-T05 URG3216L-471-L-T05 URG3216L-683-L-T05 URG2012L-472-L-T05 URG1608L-221-L-T05 URG3216L-331-L-T05 URG3216L-101-L-T05 URG3216L-223-L-T05 URG2012L-103-L-T05 URG2012L-151-L-T05 URG3216L-153-L-T05 URG1608L-151-L-T05 URG2012L-102-L-T05 URG3216L-103-L-T05 URG1608L-472-L-T05 URG1608L-682-L-T05 URG1608L-101-L-T05 URG3216L-472-L-T05 URG3216L-222-L-T05 URG1608L-331-L-T05 URG1608L-681-L-T05 URG1608L-102-L-T05 URG1608L-332-L-T05 URG2012L-332-L-T05 URG1608L-152-L-T05 URG3216L-102-L-T05 URG3216L-473-L-T05 URG2012L-101-L-T05 URG2012L-152-L-T05 URG2012L-471-L-T05 URG2012L-153-L-T05 URG3216L-682-L-T05 URG2012L-222-L-T05 URG3216L-332-L-T05 URG2012L-221-L-T05 URG1608L-471-L-T05 URG1608L-222-L-T05 URG3216L-151-L-T05 URG2012L-223-L-T05 URG2012L-333-L-T05 URG3216L-1782-L-T05 URG3216L-1652-P-T05 URG1608L-3741-L-T05 URG3216L-302-P-T05 URG2012L-822-P-T05 URG2012L-203-L-T05 URG1608L-3240-P-T05 URG2012L-302-L-T05 URG1608L-3740-P-T05 URG1608L-1691-L-T05 URG3216L-5232-P-T05 URG3216L-472-P-T05 URG2012L-121-L-T05 URG2012L-351-L-T05 URG3216L-1200-L-T05 URG3216L-3500-L-T05 URG3216L-7151-P-T05 URG1608L-1401-L-T05 URG2012L-3240-P-T05 URG2012L-1822-L-T05 URG3216L-433-L-T05 URG2012L-7320-L-T05 URG3216L-5360-L-T05 URG2012L-9311-L-T05 URG2012L-3651-L-T05 URG2012L-1652-L-T05 URG2012L-6041-L-T05 URG3216L-622-L-T05 URG2012L-4021-L-T05 URG2012L-752-P-T05 URG2012L-1912-P-T05 URG2012L-5361-P-T05 URG1608L-4640-L-T05 URG2012L-1181-P-T05 URG2012L-1582-P-T05 URG3216L-9531-P-T05 URG2012L-1820-P-T05 URG2012L-2671-P-T05 URG3216L-9090-L-T05 URG2012L-2871-L-T05 URG2012L-1871-L-T05 URG3216L-4871-P-T05 URG2012L-6340-P-T05 URG1608L-6190-P-T05 URG3216L-1021-P-T05 URG3216L-1741-P-T05 URG1608L-201-P-T05 URG2012L-3321-L-T05 URG3216L-1621-L-T05 URG1608L-4531-P-T05 URG2012L-4321-L-T05 URG3216L-7871-P-T05 URG3216L-4020-P-T05 URG2012L-681-P-T05