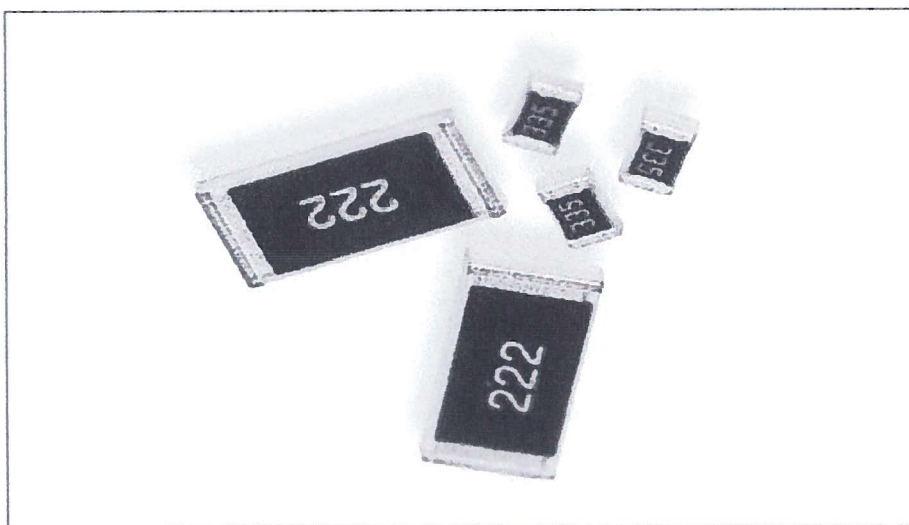


Type CRG Series

- Thick film resistors with a high power to size ratio, ideally suited to industrial and general purpose use. A range from 1 ohm to 10M and tolerances of 1% and 5%. Also including zero ohm links.
- Suitable for most applications, including high frequency operation, owing to the short lead structure and low capacitance.
- Seven Package Sizes
- Terminal finish: Matte Sn



Precious metal terminations are screen printed onto a ceramic base and fired. The resistive element is screen printed and fired and the passivation layer added. Each resistor is trimmed to tolerance by laser. The pre-scribed tile is broken into strips, the end plating is fired on and the strips broken into individual components. Final termination is made by electroplating.

Characteristics – Electrical

0805		0603		0402		0201	
Rated Power @ 70 °C (W)		0.05		0.25		1.206	
Resistance Range		Min 10 Max 10M		Min 10 Max 10M		Min 10 Max 10M	
Tolerance (%)		1 5 5 5		1 5 5 5		1 5 5 5	
Code letter		F J J J		F J J J		F J J J	
Selection Series		E24 E24 E24 E24		E24 E24 E24 E24		E24 E24 E24 E24	
Temp. Coefficient (ppm/°C)		±200 ±400 ±200 ±100 ±200 ±200 ±400 ±200		±200 ±400 ±200 ±100 ±200 ±200 ±400 ±200		±200 ±400 ±200 ±100 ±200 ±200 ±400 ±200	
Working Voltage (V)		25		50		50	
Max. Overload Voltage (V)		200		100		100	
Operating Temp. Range (°C)		-55 to +125		-55 to +125		-55 to +125	
Climate Category (°C)		55/125/56		55/125/56		55/125/56	
Insulation Resistance Dry Min (Mohms)		1000		1000		1000	
Stability (%)		3		3		3	
Zerohm (A) Current Max		0.5		0.5		0.5	
Resistance Max		<50 mOhm		<50 mOhm		<50 mOhm	
Resistance Min		10M		10M		10M	
Rated Power @ 70 °C (W)		0.125		0.063		0.05	
Resistance Range		Min 10 Max 10M		Min 10 Max 10M		Min 10 Max 10M	
Tolerance (%)		1 5 5 5		1 5 5 5		1 5 5 5	
Code letter		F J J J		F J J J		F J J J	
Selection Series		E24 E24 E24 E24		E24 E24 E24 E24		E24 E24 E24 E24	
Temp. Coefficient (ppm/°C)		±200 ±400 ±200 ±100 ±200 ±200 ±400 ±200		±200 ±400 ±200 ±100 ±200 ±200 ±400 ±200		±200 ±400 ±200 ±100 ±200 ±200 ±400 ±200	

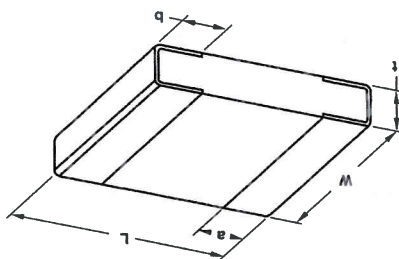
Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are standard equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

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Type CRG Series

Dimensions



Style	L	W	t	a	b
0201	0.6 ±0.03	0.3 ±0.03	0.23 ±0.03	0.10 ±0.05	0.15 ±0.05
0402	1.0 ±0.1	0.5 ±0.05	0.35 ±0.05	0.2 ±0.1	0.25 ±0.1
0603	1.6 ±0.1	0.8 ±0.15	0.45 ±0.1	0.3 ±0.2	0.3 ±0.1
0805	2.0 ±0.15	1.25 ±0.15	0.55 ±0.1	0.4 ±0.2	0.4 ±0.2
1206	3.1 ±0.15	1.55 ±0.15	0.55 ±0.1	0.45 ±0.2	0.45 ±0.2
2010	5.0 ±0.1	2.5 ±0.15	0.55 ±0.1	0.6 ±0.25	0.5 ±0.2
2512	6.35 ±0.1	3.2 ±0.15	0.55 ±0.1	0.6 ±0.25	0.5 ±0.2

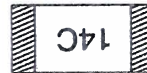
IEC 4 Digit Marking

Resistance	Marking Code
100Ω	1000
2.2kΩ	2201
10kΩ	1002
49.9kΩ	4992
100kΩ	1003

Case Sizes 0603

E24 3 Digit Marking - Example: 101=100Ω 102=1kΩ	
E24	10 11 12 13 15 16 18 20 22 24 27 30
	33 36 39 43 47 51 56 62 68 75 82 91

E96 3 Digit Marking - Examples: 14C=13kΩ, 13C=13kΩ, 130=13kΩ, 68B=4k99Ω, 68X=4.99Ω



0603 E96 Marking Code Table

Code	E96	Code	E96	Code	E96	Code	E96	Code	E96	Code	Multiplier
01	100	25	178	49	316	73	562	E96	Code	Code	10 ⁰
02	102	26	182	50	324	74	576				
03	105	27	187	51	332	75	590				
04	107	28	191	52	340	76	604				
05	110	29	196	53	348	77	619				
06	113	30	200	54	357	78	634				
07	115	31	205	55	365	79	649				
08	118	32	210	56	374	80	665				
09	121	33	215	57	383	81	681				
10	124	34	221	58	392	82	698				
11	127	35	226	59	402	83	715				
12	130	36	232	60	412	84	732				
13	133	37	237	61	422	85	750				
14	137	38	243	62	432	86	768				
15	140	39	249	63	442	87	787				
16	143	40	255	64	453	88	806				
17	147	41	261	65	464	89	825				
18	150	42	267	66	475	90	845				
19	154	43	274	67	487	91	866				
20	158	44	280	68	499	92	887				
21	162	45	287	69	511	93	909				
22	165	46	294	70	523	94	931				
23	169	47	301	71	536	95	953				
24	174	48	309	72	549	96	976				

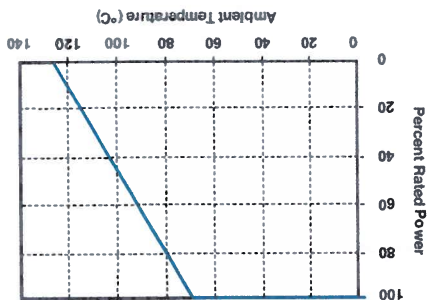
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Type CRG Series

Derating Curve



Mounting

The resistors are suitable for processing on automatic insertion equipment.

Marking

CRG0805, CRG1206, CRG2010, CRG2512

E24 series resistors are marked with a three digit code.

E96 series resistors are marked with a four digit code.

Zerohm components are marked '0'.

CRG0603

E24 5% series are marked with a three digit code.

E24 1% series are marked with a three digit code.

E96 series are marked with the international alphanumeric three character code (available on request). EXCEPT 10, 11, 13, 15, 20 & 75 decades which are marked as the E24 series.

CRG0201 & CRG0402 series unmarked.

Performance Characteristics

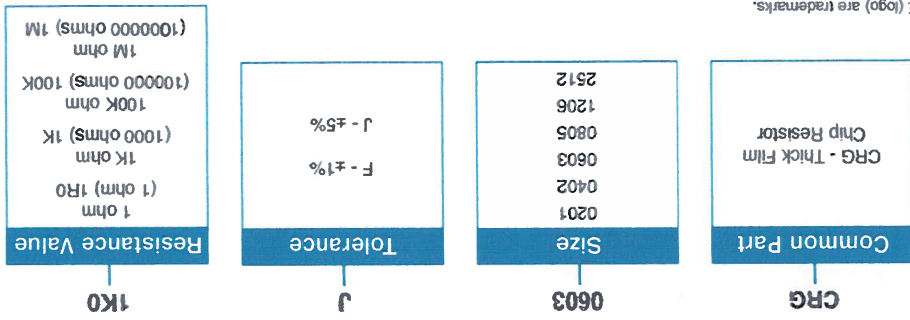
The evaluation of the performance characteristics is carried out with reference to IECQ specifications QC 400 000 and QC 400 100.

TEST REF	Long Term Tests $\pm(3\% + 0.1 \text{ ohm})$
4.23	Climatic sequence
4.24	Damp heat, steady state
4.25.1	Endurance at 70 °C
4.25.3	Endurance at 125 °C
TEST REF	Short Term Tests $\pm(1\% + 0.05 \text{ ohm})$
4.13	Overload
4.32	Adhesion
4.33	Bond strength of end face plating
4.19	Rapid change of temperature
4.18	Resistance to soldering heat

Storage

Unopened reels should be stored within a temperature range of +5 °C to +25 °C, separated from any dust, chemicals and solvent based materials. Non-adherence to this procedure could effect the solderability of this product.

How to Order



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