

DATA SHEET

Product Name Carbon Film Capped Ceramic Rod

Part Name CRC/CRD Series

File No. DIP-SP-075

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1. Scope

- 1.1 This specification for approve relates to the Carbon Film Capped Ceramic Rod manufactured by UNI-ROYAL.
- 1.2 Filming in CVD technology.
- 1.3 Low cost, good performance at High Frequency.
- 1.4 Wide IRV range, can be sorted accurately.

2. Explanation of Part No. System

The standard Part No. includes 14 digits with the following explanation:

- 2.1 The 1st to 2nd digits are to indicate the product type .

Example: CR=Carbon Film

- 2.2 The 3th digit is the type.

Example: C= Capped Filming Rod ; D= Uncapped Filming Rod

- 2.3 The 4th digit is the Alumina Content.

Example: 1= Alumina 70% ; 2= Alumina 80% ; 3= Alumina 85%

- 2.4 The 8th to 11th digits is to denote the Size of Rod.

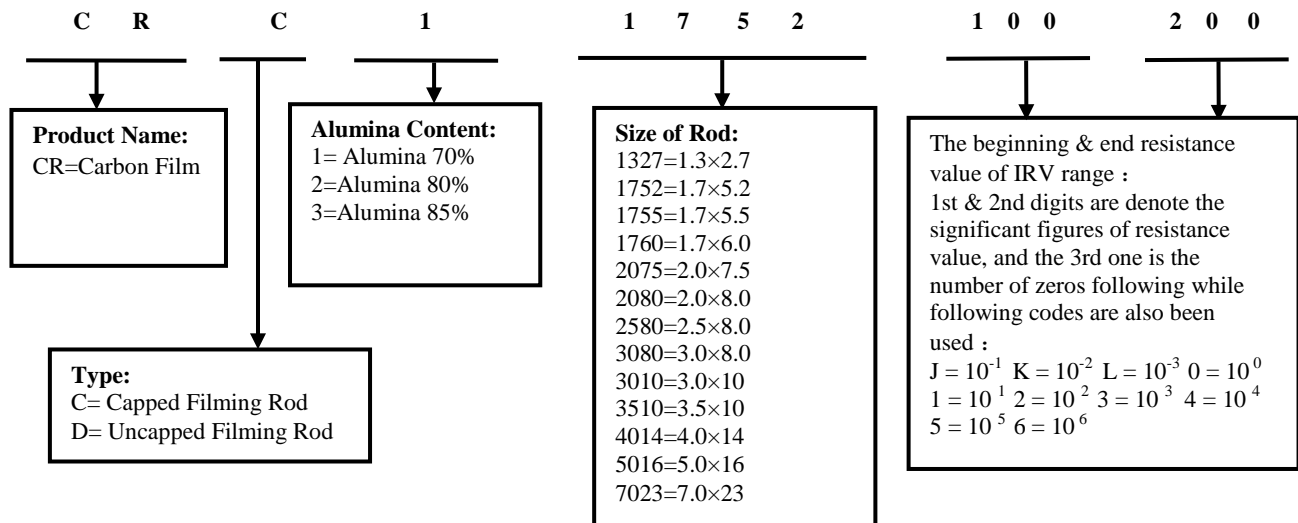
Example: 1327=1.3×2.7 ; 1752=1.7×5.2 ; 1755=1.7×5.5 ; 1760=1.7×6.0 ; 2075=2.0×7.5 ; 2080=2.0×8.0 ; 2580=2.5×8.0 ; 3080=3.0×8.0 ; 3010=3.0×10 ; 3510=3.5×10 ; 4014=4.0×14 ; 5016=5.0×16 ; 7023=7.0×23

- 2.5 The 9th to 14th digits is to denote the beginning & end resistance value of IRV range

1st & 2nd digits are denote the significant figures of resistance value, and the 3rd one is the number of zeros following while following codes are also been used:

J = 10⁻¹ K = 10⁻² L = 10⁻³ 0 = 10⁰ 1 = 10¹ 2 = 10² 3 = 10³ 4 = 10⁴ 5 = 10⁵ 6 = 10⁶

3. Ordering Procedure: (Example: CR 70% 1.7×5.2 10-20 Ω)



4. Material:

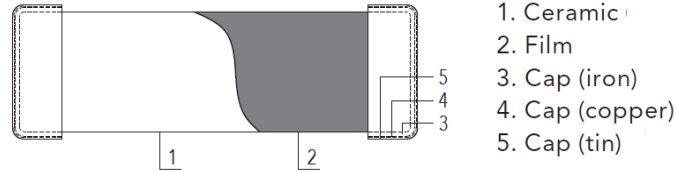
- (1) Ceramic rod main ingredient : AL₂O₃ 72% , tolerance:±3%(mark alumina content 70%) or customer requirement.

Remarks: 1.3*2.7 content AL₂O₃ 80% , tolerance:±2%(mark alumina content 80%)

- (2) Iron cap main material: iron

Iron cap main ingredient: pure Cu pure Sn

5. Dimension



Unit: mm

NO	Size	Uncapped Filming Rod		Capped Filming Rod		MIN PULLING FORCE (KG)
		D	L	D	L	
1	1.3x2.7	1.30±0.02	2.7±0.1	1.54~1.66	2.86~3.16	2
2	1.7x5.2	1.70±0.03	5.2 ^{+0.1} _{-0.2}	2.03~2.17	5.36~5.76	3
3	1.7x5.5	1.70±0.03	5.5±0.2	2.03~2.17	5.66~6.16	3
4	1.7x6.0	1.70±0.03	6.0±0.2	2.03~2.17	6.16~6.66	3
5	2.0x7.5	2.00 ^{+0.04} _{-0.03}	7.5±0.2	2.33~2.58	7.66~8.27	5
6	2.0x8.0	2.00±0.03	8.0±0.2	2.33~2.57	8.16~8.77	5
7	2.5x8.0	2.50±0.04	8.0±0.2	2.82~3.08	8.16~8.77	6
8	3.0x8.0	3.00±0.04	8.0±0.2	3.32~3.58	8.16~8.77	6
9	3.0x10	3.00±0.04	10.0±0.3	3.32~3.58	10.06~10.89	6
10	3.5x10	3.50 ^{+0.04} _{-0.05}	10.0±0.3	3.81~4.08	10.06~10.89	6
11	4.0x14	4.00±0.05	14.0±0.3	4.31~4.59	14.06~14.89	6
12	5.0x16	5.00±0.05	16.0±0.3	5.41~5.59	16.16~16.89	6
13	7.0x23	7.00±0.07	23.0±0.5	7.39~7.61	22.96~24.09	6

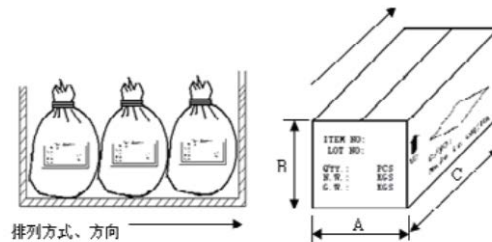
6. IRV (Initial Resistance Value) Range

Code	Initial value range	Code	Initial value range	Code	Initial value range
R01	1Ω-2Ω	R14	50Ω-80Ω	R27	2KΩ-4KΩ
R02	1.5Ω-2.5Ω	R15	60Ω-100Ω	R28	3KΩ-5KΩ
R03	2Ω-3.5Ω	R16	80Ω-130Ω	R29	4KΩ-7KΩ
R04	3Ω-5Ω	R17	100Ω-200Ω	R30	5KΩ-10KΩ
R05	4Ω-7Ω	R18	150Ω-250Ω	R31	6KΩ-12KΩ
R06	5Ω-8Ω	R19	200Ω-400Ω	R32	8KΩ-16KΩ
R07	6Ω-10Ω	R20	300Ω-500Ω	R33	10KΩ-20KΩ
R08	8Ω-13Ω	R21	400Ω-600Ω	R34	15KΩ-30KΩ
R09	10Ω-20Ω	R22	500Ω-800Ω	R35	20KΩ-40KΩ
R10	15Ω-25Ω	R23	600Ω-900Ω	R36	30KΩ-60KΩ
R11	20Ω-30Ω	R24	800Ω-1.3KΩ	R37	40KΩ-80KΩ
R12	30Ω-50Ω	R25	1KΩ-2KΩ	R38	50KΩ-100KΩ
R13	40Ω-60Ω	R26	1.5KΩ-2.5KΩ	R39	60KΩ-120KΩ

7. Standard for testing:

- (1) Appearance: Inspect appearance with eyes and sense of touch
 - ① Film layer without film bubble、protective film missing、rods pitted、uneven film distribution、protective film spots、protective film too thin、film oxide、uneven carbonization、uneven film color etc.
 - ② May promise range of initial resistance value: reference to initial resistance value specification list.
 - ③ Temperature coefficient resistor : according to customer order.
- (2) Size: Measure it with vernier caliper and micrometer.

9. Packing



No.	Type	Size (mm)			Quantity (KPCS)	
		A	B	C	Pouch	Box
1	1.3x2.7	25	20	45	600	1800
2	1.7x5.2	25	20	45	200	600
3	1.7x5.5	25	20	45	200	600
4	1.7x6.0	25	20	45	200	600
5	2.0x7.5	25	20	45	100	300
6	2.0x8.0	25	20	45	100	300
7	2.5x8.0	25	20	45	60	180
8	3.0x8.0	25	20	45	40	120
9	3.0x10	25	20	45	40	120
10	3.5x10	25	20	45	25	75
11	4.0x14	25	20	45	12.5	37.5
12	5.0x16	25	20	45	7.5	22.5
13	7.0x23	25	20	45	2.5	7.5

11. Note

- 11.1 UNI-ROYAL recommend the storage condition temperature: 15°C~35°C, humidity :25%~75%
(Put condition for individual product)
Even under UNI-ROYAL recommended storage condition, solderability of products over 1 year old (Put condition for each product) may be degraded.
- 11.2 Store / transport cartons in the correct direction, which is indicated on a carton as a symbol.
Otherwise bent leads may occur due to excessive stress applied when dropping of a carton.
- 11.3 Product performance and soldered connections may deteriorate if the products are stored in the following places:
 - a. Storage in high Electrostatic
 - b. Storage in direct sunshine、rain and snow or condensation
 - c. Where the products are exposed to sea winds or corrosive gases, including Cl₂, H₂S₃ NH₃, SO₂, NO₂.

12. Record

Version	Description of amendment	Page	Date	Amended by	Checked by
1	First issue of this specification	1~7	Jun.12,2018	Chen Haiyan	Chen Nana