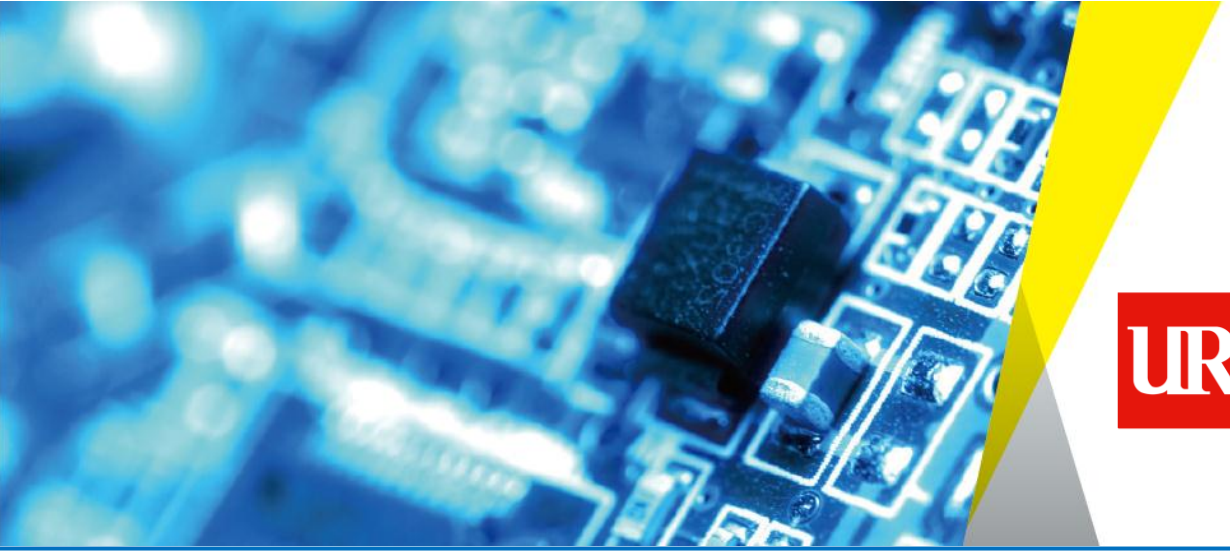


DATA SHEET

Product Name	**Cutting Semi-Finished Product Resistors**
Part Name	**CO、CMO Series**
File No.	**DIP-SP-084**

Uniroyal Electronics Global Co., Ltd.

88#, Longteng Road, Economic & Technical Development Zone, Kunshan, Jiangsu, China

Tel	+86 512 5763 1411 / 22 /33
Email	marketing@uni-royal.cn
Manufacture Plant	Uniroyal Electronics Industry Co., Ltd.
	Aeon Technology Corporation
	Royal Electronic Factory (Thailand) Co., Ltd.
	Royal Technology (Thailand) Co., Ltd.

1. Scope

This datasheet is the characteristics of Cutting Semi-Finished Product Resistors manufactured by UNI-ROYAL.

2. Part No. System

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

2.1 1^{th} ~4^{th} digits

This is to indicate the Chip Resistor. Example: CMO0= Cutting Metal oxide Film Resistors

2.2 5^{th}~6^{th} indicate material size.

Example: 01=1.3x2.7；20=4×28；15=7x51

2.3 The 7^{th} digit is to denote the Resistance Tolerance. The following letter code is to be used for indicating the standard Resistance Tolerance.

J=±5%

2.4 The 8^{th} to 11^{th} digits is to denote the Resistance Value.

2.4.1 For the standard resistance values of 5%&10% series, the 8th digit is "0",the 9^{th} & 10^{th} digits are to denote the significant figures of the resistance and the 11^{th} digit is the number of zeros following;

For the standard resistance values of ≤2% series in, the 8th digit to the 10th digits is to denote the significant figures of the resistance and the 11^{th} digit is the zeros following.

2.4.2 The following number s and the letter codes are to be used to indicate the number of zeros in the 11^{th} digit:0=10^0 1=10^1 2=10^2 3=10^3 4=10^4 5=10^5 6=10^6 J=10^{-1} K=10^{-2} L=10^{-3} M=10^{-4}

2.4.3 The 12^{th}, 13^{th} & 14^{th} digits.

The 12^{th} digit is to denote the Packaging Type with the following codes:

B=Bulk/Box

2.4.4 The 13^{th} digit is normally to indicate the Packing Quantity of Tape/Reel packaging types. The following letter code is to be used for some packing quantities:

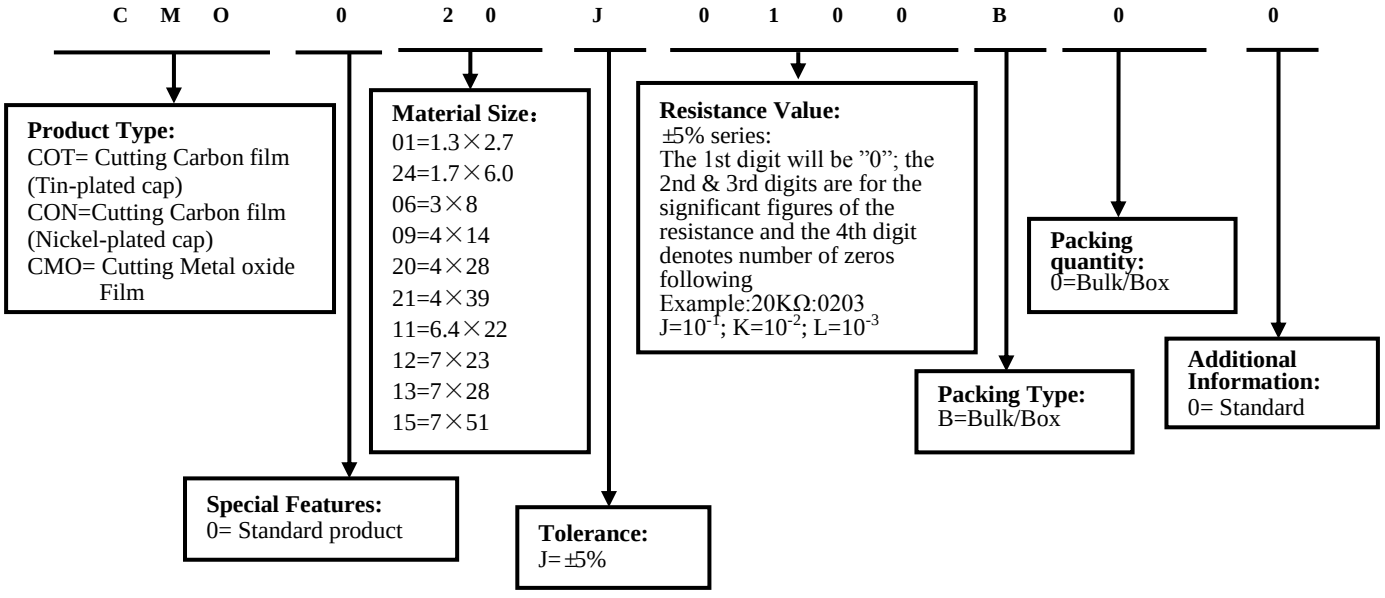
0=Bulk/Box

2.4.5 For some items, the 14th digit alone can use to denote special features of additional information with the following codes:

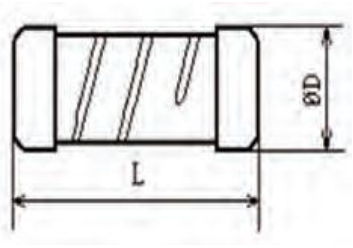
0=Standard

3. Ordering Procedure

(Example: CMO 4×28 ±5% 100Ω B/B)



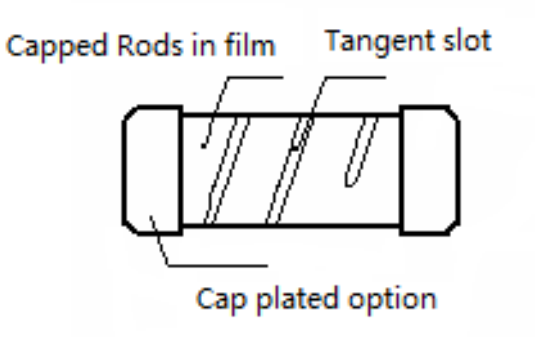
4. Dimension



Unit：mm

Type	Size	L	ΦD	Resistance Range
COT	1.3×2.7	2.86-3.16	1.54-1.66	1Ω~10MΩ
	1.7×6.0	6.16-6.66	2.03-2.17	1Ω~10MΩ
	3×8	8.16-8.77	3.32-3.58	1Ω~10MΩ
CMO	4×14	14.06-14.89	4.31-4.59	0.1Ω~560KΩ
	4×28	28.10-29.20	4.57-4.75	0.1Ω~560KΩ
	4×39	37.70-39.60	4.57-4.75	0.1Ω~560KΩ
	6.4×22	22.00-23.08	6.88-7.06	0.1Ω~560KΩ
	7×23	22.96-24.09	7.39-7.61	0.1Ω~680KΩ
	7×28	27.96-29.09	7.39-7.61	20Ω~150KΩ
	7×51	50.96-52.09	7.39-7.61	50Ω~200KΩ

5. Structure



6. Performance Specification

Characteristic	Limits	Test Methods (GB/T5729&JIS-C-5201&IEC60115-1)
Temperature Coefficient	**CO:** ≤10Ω： ±300 PPM/℃ 11Ω~99KΩ： ±450 PPM/℃ 100KΩ~1MΩ： 0~-700 PPM/℃ 1.1MΩ~10MΩ： 0~-1500 PPM/℃ **CMO:** **4×14；4×28；4×39；6.4×22：** ≦150KΩ: ±350PPM/℃ 150KΩ<R≦560KΩ 0~-700PPM/℃ **7×23；7×28；7×51：** ±350PPM/℃	4.8 Natural resistance changes per temp. Degree centigrade $\frac{R_2-R_1}{R_1(t_2-t_1)} \times 10^6$ (PPM/℃) R_1: Resistance Value at room temperature （t_1）; R_2: Resistance at test temperature （t_2） t_1: +25℃ or specified room temperature t_2: Test temperature（-55℃or 125℃）
Solderability	95% coverage Min.	4.17 The area covered with a new, smooth, clean, shiny and continuous surface free from concentrated pinholes. Test temp. Of solder:245℃±3℃ Dwell time in solder2~3 seconds.

7. Precaution for storage/Transportation

7.1. UNI-ROYAL recommend products store in warehouse with temperature between 15 to 35℃ under humidity between 25 to 75%RH. Even under storage conditions recommended above, solder ability of products will be degraded stored over 1 year old.

7.2. Cartons must be placed in correct direction which indicated on carton, otherwise the reel or wire will be deformed.

7.3. Storage conditions as below are inappropriate:

a. Stored in high electrostatic environment

b. Stored in direct sunshine, rain, snow or condensation.

c. Exposed to sea wind or corrosive gases, such as Cl_2, H_2S, NH_3, SO_2, NO_2, Br etc.

8. Record

Version	Description	Page	Date	Amended by	Checked by
1	First version	1~4	Mar.20, 2018	Haiyan Chen	Nana Chen
2	1. Modify the Ordering Procedure 2. Delete power	2 3	Mar.09, 2021	Haiyan Chen	Yuhua Xu
3	Modify the temperature coefficient test conditions	4	Nov.07, 2022	Haiyan Chen	Yuhua Xu
4	Modify the dimension and Performance Specification	3	Aug.07, 2023	Haiyan Chen	Nana Chen