

# 香港電阻製造廠

香港柴灣安業街十二號長益工業大廈10字樓A座

## HONG KONG RESISTORS MANUFACTORY

(wholly owned by Hong Kong Resistors Manufactory International Ltd.)

AN ISO 9001:2015 CERTIFIED MANUFACTURER

AN ISO 45001: 2018 MANUFACTURER

AN ISO 14001: 2015 MANUFACTURER

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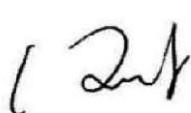



Fax.: (86 817)3315 388

## DATASHEET

Name of Product: WIREWOUND RESISTOR –BULK PACKING

Sales Executive: \_\_\_\_\_

Date: \_\_\_\_\_

製造 Prepared by	品質 Quality by	業務 Sales by	核准 Authorized by
			
<b>JSC PROMELECTRONICS</b>			
客戶 customer approval	客戶 customer approval	客戶 customer approval	客戶 customer approval

Spec. No. WRBP 2023

Rev. No.: 2023 Aug

**PRODUCT : WIREWOUND RESISTOR**

**TYPE : WR 50/100/200/300/500**

## 1. APPLICABLE SCOPE :

- 1.1 This specification is for use in WIREWOUND RESISTORS
- 1.2 Characteristics and specifications are according to those of :  
JIS C 5201
- 1.3 RoHS and REACH compliant product

## 2. PART NUMBER

It is composed of description, rated wattage , nominal resistance value , tolerance and packaging.

### 2.1 Make Up :

W	R	3	0	0	1	0	0	R	J	B	P					
Product Code		Power Rating		Nominal Resistance Value				Tolerance		Packaging		Lead Wire diameter		Lead Wire length		
W	Wire wound	Code	Wattage					Code	Tol.	BP	Bulk	Code	Size	Code	Size	
R	Resistor	50	0.50(1/2W)					F	1%		Packing	055	50: 0.55mm		50: 25mm	
		100	1.0(1W)					J	5%			075	100: 0.75mm		100: 35mm	
		200	2.0(2W)									075	200: 0.75mm		200: 33mm	
		300	3.0(3W)										300: 0.75mm		300: 32mm	
		500	5.0(5W)										500: 0.75mm		500: 35mm	

### 2.2 Explanation :

Part Number

Description

WR 300 100R J BP

Wire wound Resistor , 3W, 100Ω , +/-5% , bulk packing,

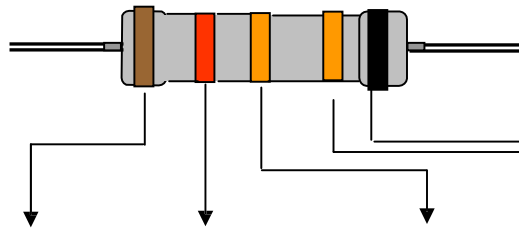
Lead Wire diameter: d=0.75mm, Lead Wire length: L=32mm.

<b>PRODUCT : WIREWOUND RESISTOR</b>	<b>TYPE : WR 50/100/200/300/500</b>
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### 2.3 Color code indication

Fixed resistors of which the nominal resistance value and tolerance are indicated by color codes as per Table 1 :

TABLE - 1



COLOR	1 <sup>ST</sup> DIGIT	2 <sup>ND</sup> DIGIT	MULTIPLIER	TOLERANCE	IDENTIFICATION
BLACK	0	0	1		WIREWOUND RESISTOR
BROWN	1	1	10	F (±1%)	
RED	2	2	100		
ORANGE	3	3	1,000		
YELLOW	4	4	10,000		
GREEN	5	5	100,000		
BLUE	6	6	1000,000		
VIOLET	7	7	10,000,000		
GREY	8	8			
WHITE	9	9			
GOLD			0.1	J (±5%)	
SILVER			0.01		

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### 3. DIMENSIONS :

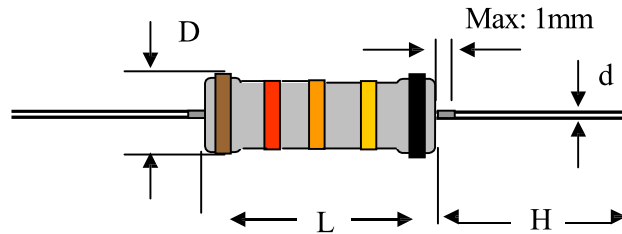


TABLE - 2

Unit : mm

TYPE	BODY		LEAD WIRE	
	L	D	H	d
WR50	9.0±0.5	3.2±0.5	25±2	0.55±0.05
WR100	11.0±1.0	4.1±0.5	35±2	0.75±0.05
WR200	15.0±1.0	5.1±0.5	33±2	0.75±0.05
WR300	17.0±1.0	6.0±0.5	32±2	0.75±0.05
WR500	24.0±1.0	8.0±0.5	35±2	0.75±0.05

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## 4. SPECIFICATIONS

TABLE - 3

DESCRIPTION	WR-50	WR-100	WR-200	WR-300	WR-500
STANDARD RESISTANCE VALUE RANGE	0.1Ω -200Ω	0.1Ω - 400Ω	0.1Ω - 600Ω	0.1Ω - 800Ω	0.1Ω - 1KΩ
POWER RATING AT 70°C	1/2W	1W	2W	3W	5W
*MAX WORKING VOLTAGE	350V	500V	500V	500V	500V
*MAX OVERLOAD VOLTAGE	700V	1,000V	1,000V	1,000V	1,000V
OPERATING TEMPERATURE RANGE	-40°C ~+255°C	-40°C ~+255°C	-40°C ~+255°C	-40°C ~+255°C	-40°C ~+255°C
TEMPERATURE COEFFICIENT	±350PPM , < 1Ω ±300PPM				
TEMPERATURE CYCLING	±( 2%R+0.05Ω)	±( 2%R+0.05Ω)	±( 2%R+0.05Ω)	±( 2%R+0.05Ω)	±( 2%R+0.05Ω)
INSULATION RESISTANCE	MIN.1,000 MΩ	MIN.1,000 MΩ	MIN.1,000 MΩ	MIN.1,000 MΩ	MIN.1,000 MΩ
HUMIDITY	±( 5% R+0.05Ω)	±( 5% R+0.05Ω)	±( 5% R+0.05Ω)	±( 5% R+0.05Ω)	±( 5% R+0.05Ω)
SHORT-TIME OVERLOAD	±( 2%R+0.05Ω)	±( 2%R+0.05Ω)	±( 2%R+0.05Ω)	±( 2%R+0.05Ω)	±( 2%R+0.05Ω)
SOLDERABILITY	MIN. 95% COVERED	MIN. 95% COVERED	MIN. 95% COVERED	MIN. 95% COVERED	MIN. 95% COVERED
VIBRATION	±(1% R+0.05Ω)	±(1% R+0.05Ω)	±(1% R+0.05Ω)	±(1% R+0.05Ω)	±(1% R+0.05Ω)
LOAD LIFE	±( 5% R+0.05Ω)	±( 5% R+0.05Ω)	±( 5% R+0.05Ω)	±( 5% R+0.05Ω)	±( 5% R+0.05Ω)

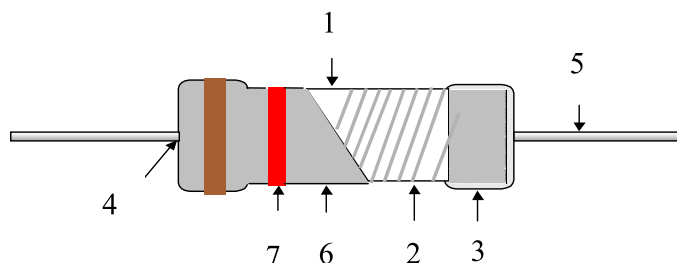
\* The working voltage is calculated based on the resistance value following the formula of  $V=\sqrt{P*R}$  or to its maximum extent as indicated above

\* The overload voltage is calculated based on the resistance value following the formula of  $V= 2.5 * \sqrt{P*R}$  or to its maximum extent as indicated above

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## 5. STRUCTURAL DIAGRAM



(1) CORE	WHITE CERAMIC ROD
(2) RESISTANCE FILM	VALUED RESISTANCE WIRE
(3) TERMINAL	TINNED IRON CAP
(4) CONNECTION	ELECTRIC WELDING
(5) LEAD WIRE	SOLDERED OR TINNED ANNEALED COPPER WIRE
(6) FINISHING PAINTING	FLAMEPROOF SILICON PAINT
(7) INDICATION	COLOR CODE INK

TABLE - 4

RATED RESISTANCE VALUE	MAX. TESTING VOLTAGE
	0.5W/1W/2W/3W/5W
$0.1\Omega \leq R < 10\Omega$	0.3
$10\Omega \leq R < 100\Omega$	1
$100\Omega \leq R < 1K\Omega$	3

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## 6. CHARACTERISTICS

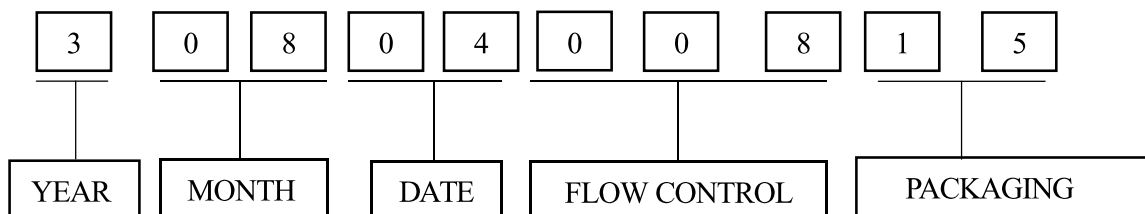
TABLE – 5

DC RESISTANCE VALUE	TEST METHOD MIL-STD-202 ITEM 303	VOLTAGE AS TABLE -4. TEMPERATURE 25 $\pm 2^{\circ}\text{C}$ . AQL 0.25%.
VOLTAGE WITHSTAND	TEST METHOD MIL-STD-202 ITEM 301	V-BLOCK METHOD. VOLTAGE AS TABLE -3 $\times 1.42$ , 1 MIN. AQL 1%.
SHORT TIME OVERLOAD	TEST METHOD JIS C 5201 ITEM 5.5	RATED VOLTAGE $\times 2.5$ TIMES OR MAX.WORKINGVOLTAGE $\times 2$ TIMES. ABOVE TEST 5 SEC. THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN $\pm(2\%R+0.05 \Omega)$ .
TERMINAL STRENGTH	TEST METHOD MIL-STD-202 ITEM 211	TENSILE STRENGTH : 1KG TENSIONAL STRENGTH : 180°, 2 CYCLES. BENDING STRENGTH : 0.5KG, 2 TIMES. THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN $\pm(0.5\%R+0.05 \Omega)$ .
SOLDERABILITY OF TERMINAL	TEST METHOD MIL-STD-202 ITEM 210	260 $\pm 5^{\circ}\text{C}$ 10 $\pm 1$ SEC. AFTER TESTING, LEAVE FOR 3 HOURS. THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN $\pm(1\%R+0.05 \Omega)$ .
TEMPERATURE CYCLE	TEST METHOD MIL-STD-202 ITEM 107	LOW SIDE TEMPERATURE : -55 $^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 30MIN. ROOM TEMPERATURE : 10-15MIN. HIGH SIDE TEMPERATURE : +125 $^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 30MIN. ROOM TEMPERATURE : 10-15MIN. ABOVE TEST 5 CYCLES AFTER LAST CYCLE, LEAVE FOR 1-3 HOURS. THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN $\pm(2\%R+0.05 \Omega)$ .
VIBRATION WITHSTAND	TEST METHOD MIL-STD-202 ITEM 204	X, Y, Z-EACH DIRECTION 2 HOURS. AMPLITUDE 0.75MM. RANGE : 10HZ ~ 500HZ. THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN $\pm(1\%R+0.05 \Omega)$ .
LOAD LIFE	TEST METHOD MIL-STD-202 ITEM 108	70 $\pm 2^{\circ}\text{C}$ . 1000 HOURS RATED VOLTAGE (1.5 HOURS ON, 0.5 HOUR OFF). THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN $\pm(5\%R+0.05 \Omega)$ .
RESISTANCE TEMPERATURE COEFFICIENT	TEST METHOD MIL-STD-202 ITEM 304	THE RESISTANCE VALUE CHANGE RATE SHALL BE AS TABLE – 3.
LOAD LIFE IN HUMIDITY	TEST METHOD MIL-STD-202 ITEM 103	THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN $\pm(5\%R+0.05 \Omega)$ .

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### 7. LOT NO. (Coding System)



### 8. PACKING DATA

TABLE – 6

TYPE	PER BAG	PER BOX	PER CARTON	INNER BOX			EXPORT CARTON		
				L	W	H	L	W	H
WR50	500PCS	5,000PCS	50,000PCS	/	/	/	280mm	280mm	260mm
WR100	500PCS	4,000PCS	40,000PCS	/	/	/	310mm	295mm	245mm
WR200	250PCS	2,000PCS	20,000PCS	/	/	/	280mm	280mm	260mm
WR300	100PCS	1,000PCS	10,000PCS	/	/	/	280mm	280mm	260mm
WR500	50PCS	500PCS	5,000PCS	/	/	/	280mm	280mm	260mm

