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HONG KONG RESISTORS MANUFACTORY

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

AN ISO 9001:2008 CERTIFIED MANUFACTURER

AN OHSAS 18001:2007 MANUFACTURER

AN ISO 14001 : 2004 MANUFACTURER

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DATA SHEET

Name of Product : WIREWOUND RESISTOR –TAPING(SMALL SIZE)

Sales Executive :_____ Date: _____

製造 Prepared by	檢驗 Inspected by	審核 Audited by	核准 Authorized by
客戶 customer approval	客戶 customer approval	客戶 customer approval	客戶 customer approval

PRODUCT : WIREWOUND RESISTOR	**TYPE : WR 100S / 200S / 300S / 500S**

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 5202

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	1	0	0	S	1	0	0	R	J	T	B					

Product Code	
W	Wire wound
R	Resistor

Power Rating	
Code	Wattage
100	1.0(1W)
200	2.0(2W)
300	3.0(3W)
500	5.0(5W)

Body Size	
S	Small Size

Nominal
Resistance Value

Tolerance	
Code	Tol.
F	1%
J	5%

Packaging	
TB	Taping in box

Lead Wire diameter	
Code	Size
	100S: 0.48mm
060	100S: 0.60mm
	200S: 0.55mm
070	200S: 0.70mm
	300S: 0.70mm
075	300S: 0.75mm
	500S: 0.70mm
075	500S: 0.75mm

Taping width	
Code	Size
	52mm
26	26mm
62	62mm
73	73mm

2.2 Explanation :

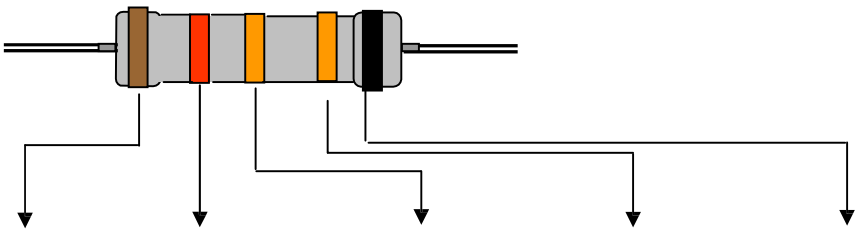
Part Number	Description
WR 100S 100R J TB	Wire wound Resistor , 1W, small size, 100Ω, +/-5%, tape in box, Lead Wire diameter: d=0.48mm, Taping width=52mm.

PRODUCT : WIREWOUND RESISTOR | **TYPE : WR 100S / 200S / 300S / 500S**

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	1ST DIGIT	2ND 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		

PRODUCT : WIREWOUND RESISTOR | **TYPE : WR 100S / 200S / 300S / 500S**

3. DIMENSIONS:

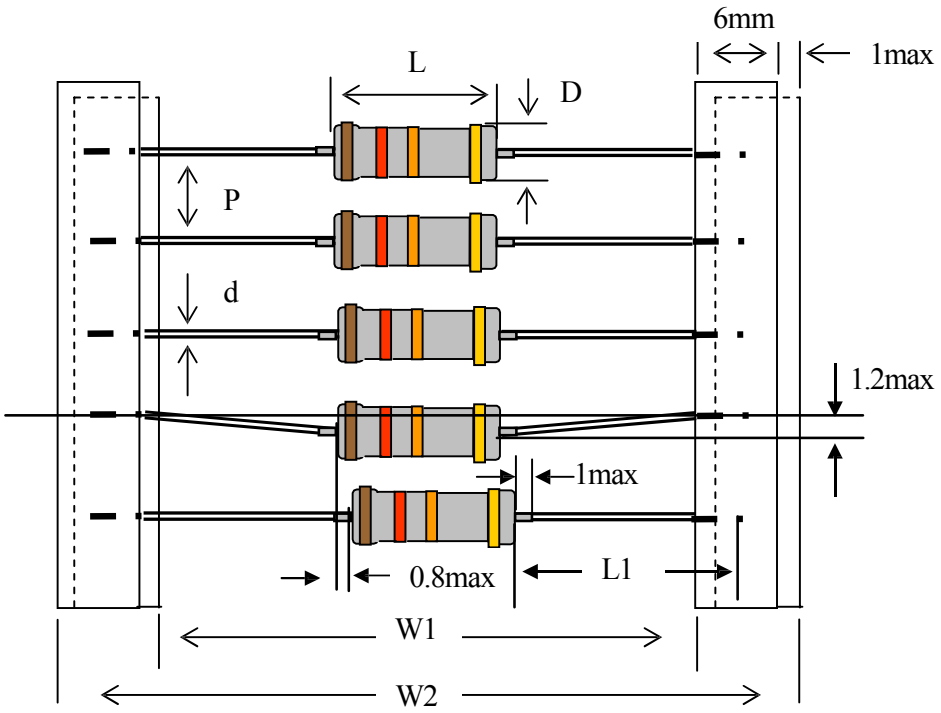


TABLE – 2

Unit : mm

TYPE	L	D	d	P	W1	W2	L1
WR100S	9.0±1.0	3.0±0.5	0.48 (0.60)±0.05	5±0.3	26±1	38±1	12±1
					52±1	64±1	26±1
WR200S	11.0±1.5	4.0±0.5	0.55(0.70)±0.05	5±0.3	52±1	64±1	25±1
					62±1.5	74±1.5	30±1
WR300S	15.0±1.5	5.0±0.5	0.70(0.75)±0.05	10±0.3	52±1	64±1	23±1
					73±1.5	85±1.5	34±1
WR500S	17.0 ± 1.5	6.0 ± 0.5	0.70(0.75)±0.05	10±0.3	73±1.5	85±1.5	33±1

4. SPECIFICATIONS

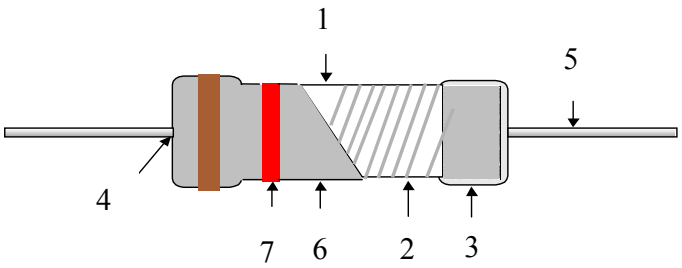
TABLE - 3

DESCRIPTION	WR-100S	WR-200S	WR-300S	WR-500S
STANDARD RESISTANCE VALUE RANGE	0.1Ω -200Ω	0.1Ω - 200Ω	0.1Ω - 200Ω	0.1Ω - 200Ω
POWER RATING AT 70℃	1W	2W	3W	5W
*MAX WORKING VOLTAGE	350V	500V	500V	500V
*MAX OVERLOAD VOLTAGE	700V	1, 000V	1, 000V	1, 000V
OPERATING TEMPERATURE RANGE	-40℃~+200℃	-40℃~+200℃	-40℃~+200℃	-40℃~+200℃
TEMPERATURE COEFFICIENT	±300PPM	±300PPM	±300PPM	±300PPM
TEMPERATURE CYCLING	±(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
HUMIDITY	±(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)
SOLDERABILITY	MIN. 80% COVERED	MIN. 80% COVERED	MIN. 80% COVERED	MIN. 80% COVERED
VIBRATION	±(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)

* 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

PRODUCT : WIREWOUND RESISTOR	TYPE : WR 100S / 200S / 300S / 500S

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

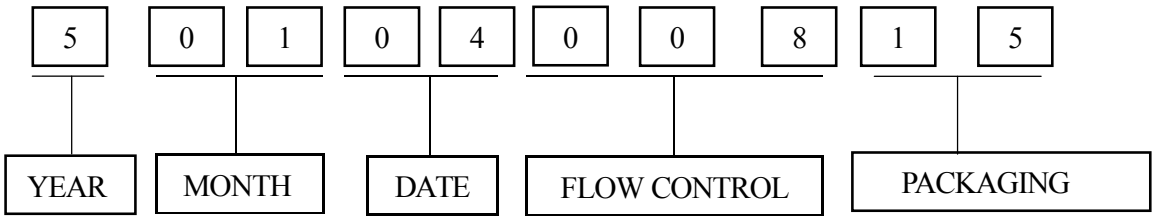
RATED RESISTANCE VALUE	MAX. TESTING VOLTAGE
	1W / 2W / 3W / 5W
0.1Ω≦R<10Ω	0.3
10Ω≦R<100Ω	1
100Ω≦R<1KΩ	3

6. CHARACTERISTICS

TABLE – 5

DC RESISTANCE VALUE	TEST METHOD MIL-STD-202 ITEM 303	VOLTAGE AS TABLE -4. TEMPERATURE 25 ±2℃. AQL 0.25%.
VOLTAGE WITHSTAND	TEST METHOD MIL-STD-202 ITEM 301	V-BLOCK METHOD. VOLTAGE AS TABLE -3 ×1.42 , 1 MIN. AQL 1%.
SHORT TIME OVERLOAD	TEST METHOD JIS C 5202 ITEM 5.5	RATED VOLTAGE × 2.5 TIMES OR MAX.WORKINGVOLTAGE × 2 TIMES. ABOVE TEST 5 SEC. THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN ±(2%R+0.05 Ω).
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 ±(0.5%R+0.05 Ω).
SOLDERABILITY OF TERMINAL	TEST METHOD MIL-STD-202 ITEM 210	260±5℃ 10±1SEC. AFTER TESTING, LEAVE FOR 3 HOURS. THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN ±(1%R+0.05 Ω).
TEMPERATURE CYCLE	TEST METHOD MIL-STD-202 ITEM 107	LOW SIDE TEMPERATURE : -55℃±3℃ 30MIN. ROOM TEMPERATURE : 10-15MIN. HIGH SIDE TEMPERATURE :+125℃±3℃ 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 ±(2%R+0.05 Ω).
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 ±(1%R+0.05 Ω).
LOAD LIFE	TEST METHOD MIL-STD-202 ITEM 108	70°±2℃. 1000 HOURS RATED VOLTAGE (1.5 HOURS ON, 0.5 HOUR OFF). THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN ±(5%R+0.05 Ω).
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 ±(5%R+0.05 Ω).

7. LOT NO. (Coding System)



8. PACKING DATA

TABLE – 6

TYPE	PER BOX	PER CARTON	INNER BOX			EXPORT CARTON		
			L	W	H	L	W	H
WR100S	2,000PCS	20,000PCS	260mm	75mm	105mm	410mm	270mm	238mm
WR200S	1,000PCS	10,000PCS	255mm	81mm	72mm	419mm	264mm	170mm
WR300S	1,000PCS	10,000PCS	260mm	78mm	87mm	422mm	270mm	200mm
WR500S	500PCS	5,000PCS	255mm	100mm	90mm	515mm	267mm	203mm