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1. 適用範圍 Specification

1-1 本承認書僅適用本公司生產之各種水泥電阻器 (1W~100W)之成品規格。

The specification is only suitable for Cement Wire Wound Resistors(1W~100W) by SHI MENG ELECTRONIC CO., LTD.

1-2 參考標準 Applicable specification

本承認書參考《JIS C5201-2011》和《GB/T 5729-2003/IEC 60115-1:2001》

The specification Applicable specification《JIS C5201-2011》and《GB/T5729-2003/IEC 60115-1:2001》

2. 品名 Part Number

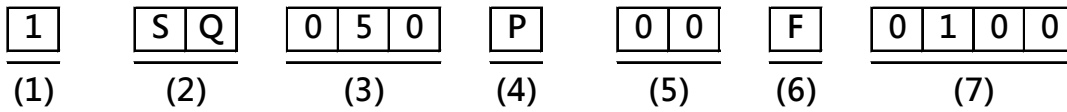
依據其種類，分別注明額定功率、容許差、公稱電阻值和形狀。

According the Resistors type, To mark the Rated power, Tolerance, Resistance value, and forming type.

例(e.g) : SQ P 5W J(±5%) 10Ω
 種類 形狀 額定功率 容許差 阻值

3. 訂貨方式 How To Order

例(e.g) : SQ P 5W ±5% 10Ω



代碼 code	類別 Type
1	Product
2	Samples
3	Materials

代碼 code	瓦特數 wattage
010	1W
020	2W
030	3W
040	4W
050	5W
060	6W
070	7W
100	10W
150	15W
200	20W
300	30W
500	50W
100w	100W

代碼 code	含義 meaning
P	P 型
M	M 型
Z	Z 型
BKM	BKM 型
BKG	BKG 型
SQK	SQK 型

代碼 code	容許差 tolerance
F	±1%
J	±5%

阻值	Ex.	標示 Mark	
		1%	5%
低阻兩位 小數Ω	0.05Ω	R050	R050
低阻兩位 小數Ω	0.15Ω	R150	R150
個位Ω	1Ω	1008	0109
十位Ω	10Ω	1009	0100
百位Ω	100Ω	1000	0101
個位K	1kΩ	1001	0102
十位k	10kΩ	1002	0103
以此類推			

代碼 code	產品類別 Type
SQ	水泥電阻

代碼 code	含義 meaning
此處為特殊尺寸所留,正常為00.	Z 型特殊腳距
	M 型腳長度
	P 型引腳長度

4. 術語 Glossary

4-1 種類 Type

以大寫英文字母 “SQ” 表示為繞線電阻器；
CEMENT WIRE WOUND RESISTORS are marked with “SQ” ,

4-2 標稱阻值 Rated resistance

Unit: $m\Omega(10^{-3}\Omega)$ 、 Ω 、 $K\Omega(10^3\Omega)$ 等

4-3 電阻值容許差 Resistance tolerance:

J($\pm 5\%$)、G($\pm 2\%$)、F($\pm 1\%$)

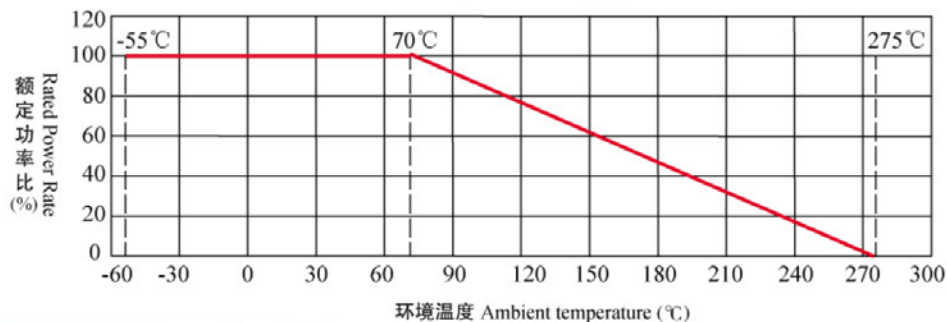
4-4 額定功率：在 70°C 環境溫度下進行耐久性試驗，而且阻值變化不超過該試驗的允許值時所允許的最大功率 Rated power : At 70 °C ambient temperature durability test, and the change in resistance does not exceed the value of the test allows the maximum power allowed

4-4-1 以 “W” 代表額定電功率，如加一英文字母 “S” 即表示小型化，例 1WS，即表示額定功率為 1W 之小型化

The “W” is the rated power, such as adding a letter "S" means that small, for example 1WS, that means a power rating of 1W the small Size

4-4-2 額定功率系適應在周圍溫度 70°C 可以連續負載的最大功率，但周圍溫度如超過 70°C 時之額定電力則依圖的降功率曲線實施。

Rated power is maximum power which can be continuously loaded at specified ambient temperature 70°C, however when the ambient temperature exceeds 70°C, rated power should be determined from the derating curve



4-5 額定電壓：用標稱阻值和額定功率乘積的平方根計算出來的直流電壓或交流電壓有效值。由於電阻器的尺寸和結構上的原因，在超過一定的高阻值時不允許施加額定電壓，而是應施加最高使用電壓。

Rated voltage: The nominal resistance and power rating calculated by the square root of the product of DC voltage or AC rms voltage. As the resistor size and structural reasons, the high resistance when more than a certain rated voltage is not allowed, but the maximum operating voltage should be applied.

4-6 最高使用電壓：可以連續施加在電阻值兩個引出端上的最大直流或交流電壓有效值，當電阻的額定電壓計算出來大於最高使用電壓時，只能對電阻施加最高使用電壓。

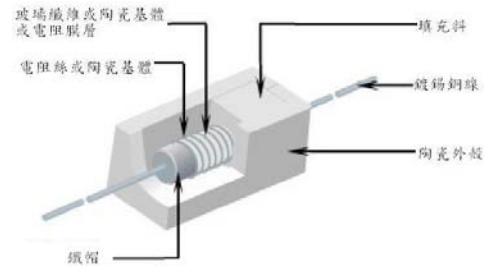
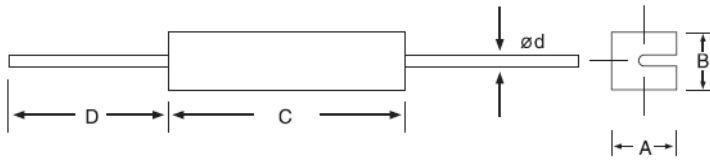
Max continuous working voltage: resistance can be continuously applied to the two terminals on the largest DC voltage or AC rms voltage, when the resistance is greater than the maximum rated voltage is calculated using the voltage, use only the highest voltage applied to the resistance

4-7 電阻溫度係數 (TCR)：兩個規定溫度之間的阻值相對變化除以產生這個變化的溫度之差，主要用來衡量電阻值隨溫度變化而變化的特性

Temperature coefficient of resistance (TCR): the resistance between the two provisions relative changes in temperature produces this change by dividing the temperature difference is mainly used to measure the resistance changes with temperature characteristics

5. 尺寸 Dimension

5.1.SQP-Type



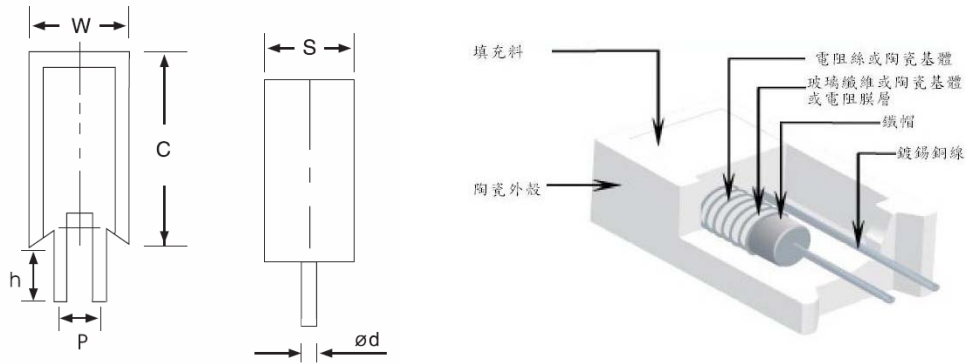
Unit: mm

TYPE	Dimension(mm)					阻值範圍 Resistance Range(Ω)		最高使用電壓 Max Working Voltage
	A±1	B±1	C±1.5	D±3	d±0.05	Wire wound	Film Cutting type	
1W	6.5	6.5	14	25	0.5	0.01~47	47~100K	150V
2W	7	7	18	30	0.60	0.01~100	101~100K	150V
3W	8	8	22	35	0.75	0.01~300	301~100K	350V
5W	10	9	22	35	0.75	0.01~300	301-100K	350V
7W	10	9	35	35	0.75	0.01~680	681-100K	500V
10WS	13.2	13.2	22.5	35	0.75	0.01~390	391-100K	500V
10W	10	10	48	35	0.75	0.01~1K	1.1K-150K	500V
15W	12.5	12.5	48	35	0.75	0.01~1K	1.1K-150K	500V
20W	13.5	14	60	35	0.75	0.01~1K	1.1K-150K	500V
25W	14.5	13.5	60	35	0.75	0.01~1K	1.1K-150K	500V
30W	19	19	75	33	0.75	0.01~1K	1.1K-150K	500V
50W	20±2	19±2	90±3	30	0.75	0.01~1K	1.1K-150K	500V
100W	22±2	23±2	136±3	30±5	0.75	0.01~10K	----	500V

注：1. 電阻芯採用繞線方式還是皮膜切割方式可以特殊協商製作，100W 採用普通瓷殼。

2. 40W、50W、60W 外型尺寸一致。

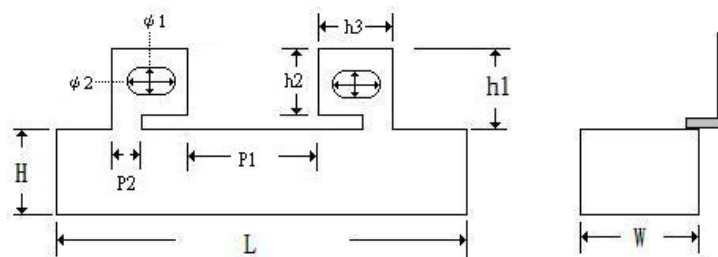
5.2.SQM-Type



Unit: mm

TYPE	Dimension(mm)						阻值範圍 Resistance Range(Ω)		最高使用電壓 Max Working Voltage
	W±1	C±1	S±1	h±1	P±1	d±0.05	Wire wound	Film cutting type	
2W	11.2	20.5	7.2	4/5/10	5	0.68	0.01~100	101~100K	150V
3W	12	24	8	4/5/10	5	0.75	0.01~300	301~100K	300V
5W 7WS	13.5	24.5	9	4/5/10	5	0.75	0.01~300	301-100K	350V
7W 10WS	13.5	39.5	9	4/5/10	5	0.75	0.01~680	681-100K	400V
10WS(特)	16	35	12	4/5/10	7.5	0.75	0.01~390	391-100K	400V
10W	13.5	51	9	4/5/10	5	0.78	0.01~1K	1.1K-150K	400V

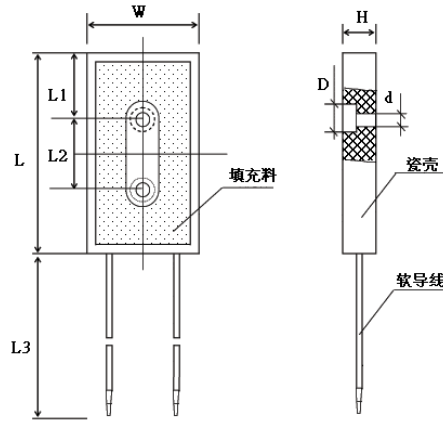
5.3.SQK-Type



Unit: mm

TYPE	Dimension(mm)										Resistance Range(Ω)
	L±1	W±1	H±1	h1±0.5	h2±0.5	h3±0.5	P1±1	P2±0.5	φ1	φ2	
10W	48	13	13	15	10	14	14	7	5	11	1Ω~100K
20W	48	13	13	15	10	14	14	7	5	11	1Ω~100K
30W	63	12.5	12.5	15	10	14	32	7	5	11	1Ω~100K
30W	63.5	13	13	15	10	14	32	7	5	11	1Ω~100K

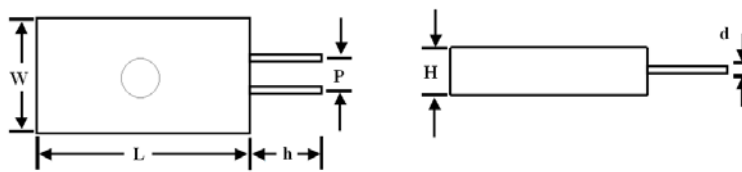
5.4.BKG-Type



Unit: mm

型号 TYPE	尺寸(mm)								阻值範圍 Resistance range
	W±2	L±3	H±1	L1±1	L2±1	L3±20	D±1	d±0.5	
BKG 80W	45	90	15	26	35	300	10	5	0.5Ω~10KΩ

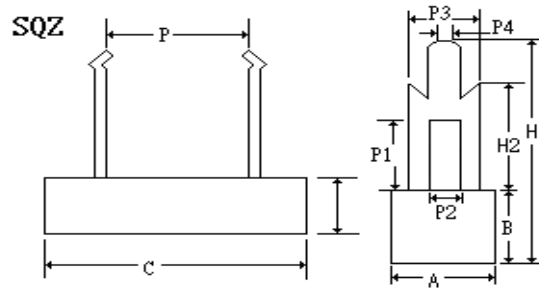
5.5.BKM-Type



Unit: mm

TYPE	Dimension (mm)						阻值範圍 Resistance Range
BKM	L±1	W±0.5	H±0.5	h±1	P±1	d±0.05	
20W	50	20	10	10	12	0.75	0.1Ω~100KΩ

5.6.SQZ-Type



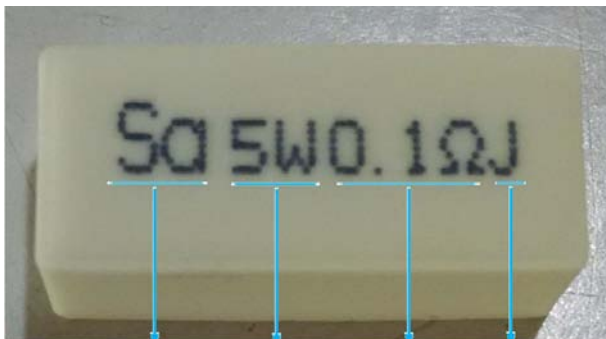
Unit: mm

TYPE	Dimension(mm)										阻值範圍 Resistance Range(Ω)		最高使用電壓 Max Working Voltage
	C±1	A±1	B±1	P±2	H1±1	H2±1	P1±0.2	P2±0.2	P3±0.2	P4±0.1	Wire wound	Film cutting type	
3W	22	9	10	16	22	12	4.2	2	7	1.5	0.01~300	301~100K	350V
5W	27	10	10	15	27	12	4.2	2	7	1.5	0.01~300	301~100K	350V
7W	35	9.5	9.5	22.5	24	12	4.2	2	7	1.5	0.01~680	681~100K	500V
10W	48	10	9	30	24	10	4.2	2	7	1.3	0.01~1K	1.1K~150K	500V
15W	48	13	12.5	32	33	15	7	4	10	3	0.01~1K	1.1K~150K	500V
20W	63	12.5	12.5	44	33	15	7	4	10	3	0.01~1K	1.1K~150K	500V
25W	63	12.5	12.5	44	33	15	7	4	10	3	0.01~1K	1.1K~150K	500V
50W	90	19	19	68	35	10	7	4	10	3	0.01~1K	1.1K~150K	500V

注：①腳片形狀和尺寸可以選用生產。
 ②腳距尺寸可以協商生產。

6. 印字 Marking:

包含如下內容：



世盟電子標誌 額定功率 標稱阻值 誤差

注：① 無感電阻會用 "NRX" 印字 標示區分
 ② SQP、SQM、SQZ 電阻變頻器用電阻在誤差後面加 "B" 以示區分。

7. 電氣特性 Characteristics

特性項 Characteristics	規格值 Specifications	測試方法 Test methods															
溫度係數 T.C.R	$\geq 0.1\Omega : \pm 300\text{PPM}/^\circ\text{C}$ $< 0.1\Omega : \pm 500\text{PPM}/^\circ\text{C}$	$\frac{R2-R1}{R1*(T2-T1)} * 10^6(\text{PPM})/^\circ\text{C}$ R1:常溫(T1)阻抗值. Resistance value at room temperature (T1). R2:常溫+100°C(T2)阻抗值. Resistance value at room temperature+100°C.															
溫度壽命 Load life	阻抗值變化 $\pm(5\%R+0.05\Omega)$.機械特性不可有損傷. Resistance change rate $\pm(5\%R+0.05\Omega)$ MAX With no evidence of mechanical damage.	溫度 $70\pm 2^\circ\text{C}$, 恆溫箱中, 加額定電壓測試 1.5 小時停止 0.5 小時, 連續 1000 小時. Resistance change after 1000hrs operating at rated voltage with duty cycle of 1.5hrs ON 0.5hrs OFF at $70^\circ\text{C}\pm 2^\circ\text{C}$.															
短時間過負荷 Short time over load	$\pm(2\%R+0.05\Omega)$	Wire wound: $U = \sqrt{10 * P * R}$ 或 2 倍最高使用電壓(取小者), 測試 5 秒 $U = \sqrt{10 * P * R}$ 2 times Max Working Voltage (whichever is less), testing 5 seconds Film cutting type: $U = 2.5 * \sqrt{P * R}$ 或 2 倍最高使用電壓(取小者), 測試 5 秒 $U = 2.5 * \sqrt{P * R}$ 2 times Max Working Voltage (whichever is less), testing 5 seconds															
絕緣阻抗 Insulation resistance	1000M Ω 以上 1000M Ω or more	將待測物置於 V 型槽 V-block															
耐絕緣電壓 Electric withstanding voltage	阻抗值變化 $\pm(0.5\%R+0.05\Omega)$ 塗裝不可燒損, 絕緣不可破壞. Resistance change $\pm(0.5\%R+0.05\Omega)$. No evidence of flashover mechanical damage, Arcing or insulation breakdown.	電阻兩端導線置於金屬 V 型槽上, 依特性表之電壓規定印加 60 秒. Resistance shall be clamped in the trough of a 90 metallic v-block and shall be test at specified in the above list for 60 seconds.															
溫度循環 Temperature cycling	阻抗值變化 $\pm(1\%R+0.05\Omega)$ 以內, 機械特性不可有損傷. Resistance change is $\pm(1\%R+0.05\Omega)$ MAX. With no evidence of mechanical damage.	依下表所規定之溫度連續 5 次 <table border="1"> <thead> <tr> <th>步驟 Step</th> <th>溫度 Temperature</th> <th>放置時間 Time (MIN)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>$-25^\circ\text{C}\pm 3^\circ\text{C}$</td> <td>30</td> </tr> <tr> <td>2</td> <td>Room temp</td> <td>10-15</td> </tr> <tr> <td>3</td> <td>$85^\circ\text{C}\pm 2^\circ\text{C}$</td> <td>30</td> </tr> <tr> <td>4</td> <td>Room temp</td> <td>10-15</td> </tr> </tbody> </table>	步驟 Step	溫度 Temperature	放置時間 Time (MIN)	1	$-25^\circ\text{C}\pm 3^\circ\text{C}$	30	2	Room temp	10-15	3	$85^\circ\text{C}\pm 2^\circ\text{C}$	30	4	Room temp	10-15
步驟 Step	溫度 Temperature	放置時間 Time (MIN)															
1	$-25^\circ\text{C}\pm 3^\circ\text{C}$	30															
2	Room temp	10-15															
3	$85^\circ\text{C}\pm 2^\circ\text{C}$	30															
4	Room temp	10-15															
耐熱性 Resistance to soldering heat	阻抗值變化 $\pm(1\%R+0.05\Omega)$. 以內, 機械特性不可有損傷. Resistance change is $\pm(1\%R+0.05\Omega)$. MAX. With no evidence of mechanical damage.	將電阻兩端導線浸入錫爐距離本體 2mm 依下表規定實施 <table border="1"> <thead> <tr> <th>Temperature</th> <th>Dip time</th> </tr> </thead> <tbody> <tr> <td>$350^\circ\text{C}\pm 10^\circ\text{C}$</td> <td>$3\pm 0.5$ sec</td> </tr> <tr> <td>$260^\circ\text{C}\pm 5^\circ\text{C}$</td> <td>$10\pm 1$ sec</td> </tr> </tbody> </table>	Temperature	Dip time	$350^\circ\text{C}\pm 10^\circ\text{C}$	3 ± 0.5 sec	$260^\circ\text{C}\pm 5^\circ\text{C}$	10 ± 1 sec									
Temperature	Dip time																
$350^\circ\text{C}\pm 10^\circ\text{C}$	3 ± 0.5 sec																
$260^\circ\text{C}\pm 5^\circ\text{C}$	10 ± 1 sec																
焊錫性 Solder ability	百分之 95 覆蓋於導線上 95% coverage minimum	錫爐溫度: $260\pm 5^\circ\text{C}$ 浸錫時間: 3 ± 0.5 sec Test temperatures of solder: $260\pm 5^\circ\text{C}$ Dwell time in solder: 3 ± 0.5 sec															
接頭強度 Join intensity	接點不得有脫落情形 No terminal wire loosening and breakage shall occur.	夾住導線焊接端, 並向外翻轉 90 度以上 Bending strength load 90° reciprocation twice															