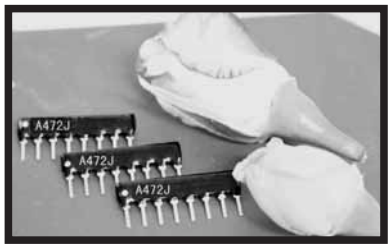
■ 厚膜網絡電阻器
THICK FILM NETWORK RESISTOR



• 產品簡介 BRIEF INTRODUCTION

＊ 小型化、高密度組裝	• Miniature, high density assembly.
＊ 電性能穩定，可靠性高	• Stable electrical capability, high reliability.
＊ 可得到不同電阻值組合	• Combinations of different ohmic value are available
＊ 符合RoHS指令	• RoHS compliant

• 定貨方式 ORDER

A	H	08	4	7	2	/				J		

電路結構代碼 Circuits Code

A
B
C
D
E
F
G
H
T

額定功率 Power Rating

代號 Code	功率 Power
無表示 No Mark	1/8W
H	1/4W

引脚數 Pins

04~14

電阻值代號 I Resistance Value Code I

三位數(E—24系列)：前兩位表示有效數字，第三位表示有效數字后零的個數
Three digits (E-24 series): The first two digits are significant figures and the third one denotes number of zeros.

電阻值代號 II Resistance Value Code II

當表示A、B、C、D、G型產品時，該部分無表示。當表示E、F、H、T型產品時，該部分表示法與“電阻值代號1”相同。
When it is the type of A, B,C, D or G, there is no mark. When it is the type of E, F,H or T, the expression is same as “Resistance Value Code1”.

電阻值誤差精度代號 Resistance Tolerance Code

代號 Code	誤差精度 Tolerance
F	±1%
G	±2%
J	±5%
J (跨接電阻 Jumper)	⩽50mΩ

脚距代號 Code of pin distance

無表示 No mark	2.54mm
Y	1.778mm

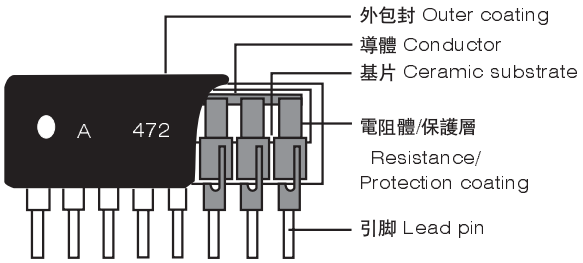
無鉛等級 Lead-free Level

無表示 No mark	錫鉛品 Contained Lead
P	環保品 Termination Lead-free

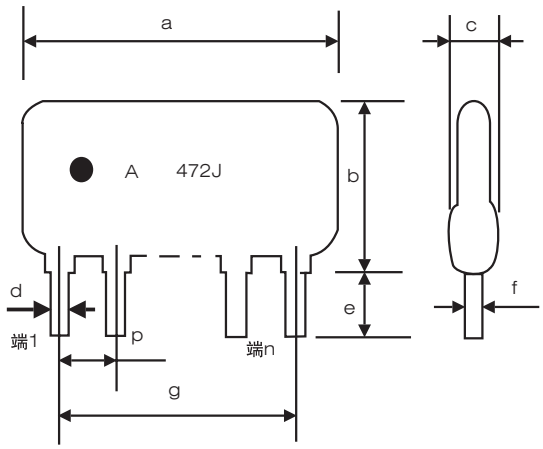
• 結構圖和外形尺寸 CONSTRUCTION AND DIMENSIONS

單位 unit:mm

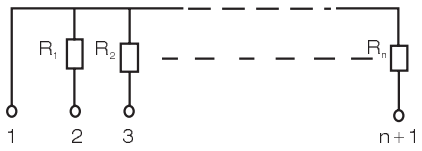
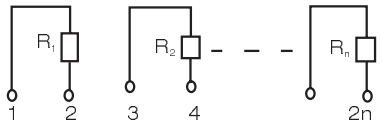
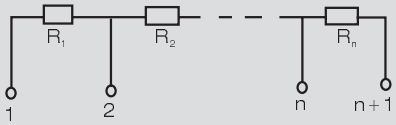
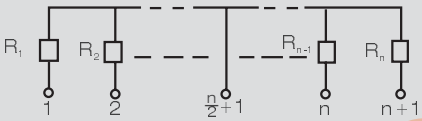
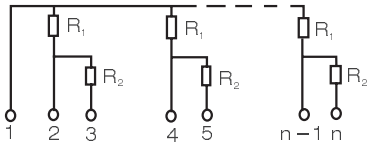
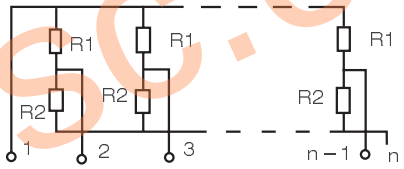
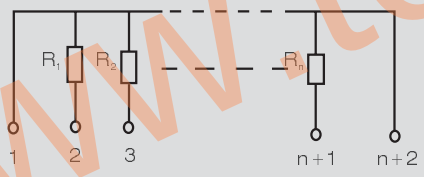
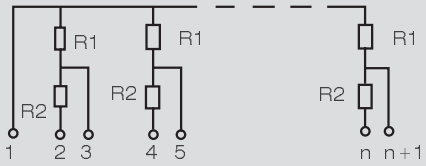
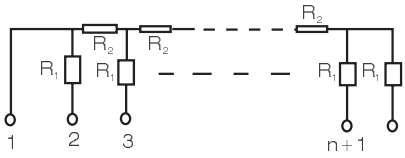
代號 Code	常規尺寸 Normal dimension		特殊尺寸 Special dimension	
a	2.54×(n-1)+2.50max		1.778×(n-1)+3.20max	
b	A、B、C、D、E、F、G、H 型 Type	5.08max	A、B、C、D、E、F、G、H 型 Type	5.08max
	T 型 Type	8.50max	T 型 Type	8.50max
c	3.00max		3.00max	
d	0.50±0.1		0.50±0.1	
e	3.50±0.5		3.50±0.5	
f	0.25±0.1		0.30±0.1	
g	2.54×(n-1)±0.3		1.778×(n-1)±0.3	
p	2.54±0.1		1.778±0.1	



注:白色點標記爲第一脚
Note: The white dot means the first pin.



• 等效電路 EQUIVALENT CIRCUIT

型號 Type	等效電路 Equivalent Circuit	型號 Type	等效電路 Equivalent Circuit
A	 $R_1=R_2=\cdots\cdots=R_n$	B	 $R_1=R_2=\cdots\cdots=R_n$
C	 $R_1=R_2=\cdots\cdots=R_n$	D	 $R_1=R_2=\cdots\cdots=R_n$
E	 $R_1=R_2$或$R_1\neq R_2$	F	 $R_1=R_2$或$R_1\neq R_2$
G	 $R_1=R_2=\cdots\cdots=R_n$	H	 $R_1=R_2$或$R_1\neq R_2$
T	 $R_1=R_2$或$R_1\neq R_2$		

• 参考標准 REFERENCE STANDARD

GB/T 15654-1995
GB/T 2828.1-2003
GB/T 2829-2002

• IEC E-24 系列電阻值代碼對照表

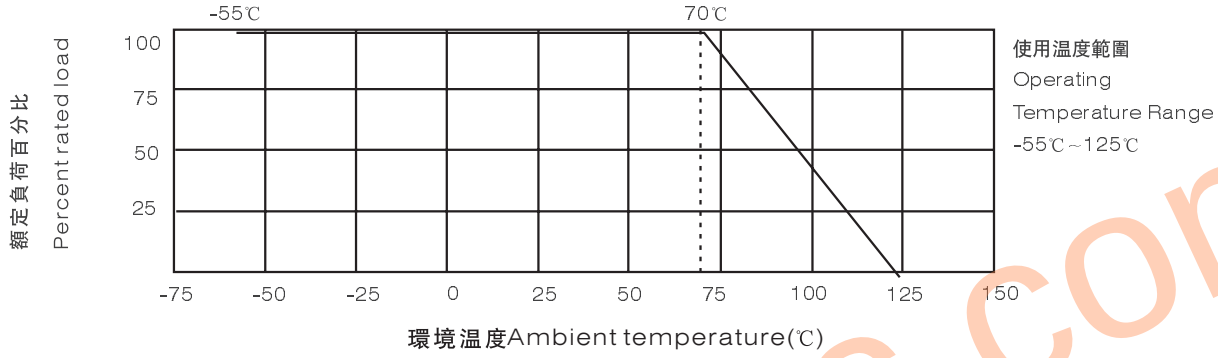
IEC E-24 Series Resistance Cross-reference List

E-24 系列 E-24 Series ($\times 10^{n}\Omega$)

(單位unit:1Ω、10Ω、100Ω、1KΩ、10KΩ、100KΩ、1MΩ)

1.0	1.5	2.2	3.3	4.7	6.8
1.1	1.6	2.4	3.6	5.1	7.5
1.2	1.8	2.7	3.9	5.6	8.2
1.3	2.0	3.0	4.3	6.2	9.1

• 負荷下降曲綫 DERATING CURVE



＊ 當電阻使用的環境温度超過70℃時，其額定負荷(額定功率或額定電流)按上述曲綫下降。
For resistors operated in ambient over 70℃, rated load (power rating or current rating) shall be derated in accordance with above figure.

• 額定值 RATINGS

項 目 Item	標 准 Specification
額定功率 Power Rating	1/8w(1/4w)
最大工作電壓 Max. Working Voltage	200V
最大過負荷電壓 Max. Overload Voltage	280V
跨接電阻額定電流 Jumper Rated Current	2A
電阻温度系數 Resistance Temperature Coefficient	10Ω ≤R≤1MΩ： ±100ppm/℃ 1Ω ≤R<10Ω,1MΩ <R≤10M： ±250ppm/℃
阻值誤差精度 Resistance Tolerance	±1%, ±2%, ±5%, 跨接電阻 Jumper: ≤50mΩ
阻值範圍 Resistance Range	0Ω(跨接電阻Jumper) 、1.0Ω~10MΩ E—24系列
使用温度範圍 Operating Temperature Range	−55℃~125℃
額定温度 Rated Temperature	+70℃

＊ 注：額定電壓＝$\sqrt{\text{額定功率} \times \text{標稱電阻值}}$ 或最大工作電壓中的較小值。
Note: Rated Voltage=$\sqrt{\text{Power Rating} \times \text{Resistance Value}}$ or Max. Working Voltage, whichever is lower.

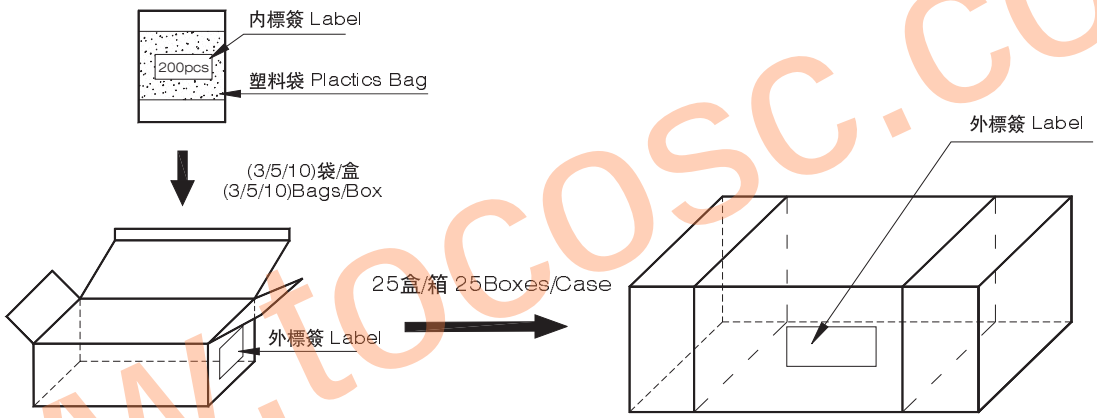
• 特性 CHARACTERISTICS

項目 Item	標 准 Specifications	測試方法(GB/T 15654-1995) Test Methods (GB/T 15654-1995)
電阻温度系數 T. C. R	在規定值内 Within the specified T.C.R	測定範圍：－55℃～125℃ measure between－55℃～125℃
短時間過負載 Short Time Overload	無可見損傷，No mechanical damage ΔR≤ ±(2.0%R+0.05Ω) 跨接電阻 Jumper：R≤50mΩ	2.5倍額定電壓或最大過負荷電壓(取最小者) 保持5秒 2.5×Rated voltage or Max. Overload Voltage, choose the lower , for 5 seconds
包封絶緣阻抗 Coating Insulation Resistane	100MΩ Min	施加 500V DC Apply 500V DC
包封絶緣耐電壓 Coating Insulation Withstand Voltage	無弧光，燃燒及本體被擊穿 No arc, inflammation and damage	施加500V DC 保持1min Apply 500V DC 1min
可焊性 Solderability	可焊面積≥95% 95%Cover Min	240℃ ±5℃ 2±0.5秒 240℃ ±5℃ 2±0.5S
耐溶劑性 Resistance to Solvent	無可見損傷，No mechanical damage ΔR≤ ±(1.0%R+0.05Ω) 跨接電阻 Jumper：R≤50mΩ	浸入三氯乙烯 10±1小時 Dip in chloroethylene for 10h±1h.
阻 燃 性 Resistance to inflammation	V-0	VL-94
引綫强度 Pin strength	無可見損傷, No mechanical damage ΔR≤ ±(1.0%R+0.05Ω) 跨接電阻 Jumper：R≤50mΩ	將引綫焊接在網絡電阻的受試引出端后， 以10mm/s平拄，拉力到500g止 Speed:10mm/s, pull strength:500g.
抗彎强度 Bending strength	無可見損傷 No mechanical damage	端子綫末端負重0.5kg,使電阻器本體與端子綫彎成90°，保持5s，爲一個循環，做2個循環 Force with 0.5kg on the terminal pin,between the resistor and the terminal pin is 90 degree,duration: 5s for 1 cycle。 total 2 cycles
振動試驗 vibration	無可見損傷,No mechanical damage ΔR≤ ±(1.0%R+0.05Ω) 跨接電阻 Jumper：R≤50mΩ	10HZ → 55HZ → 10HZ 1min 内完成，振幅1.55mm,上述方法 X、Y、Z 三個方向各振動 2 小時 10HZ → 55HZ → 10HZ within 1 min, swing:1.55mm, three directions for X、Y、Z for 2 hours
耐焊接熱 Resistance to Soldering Heat	無可見損傷，No mechanical damage ΔR≤ ±(1.0%R+0.05Ω) 跨接電阻 Jumper：R≤50mΩ	270℃ ±5℃ 10±1秒 270℃ ±5℃ 10s±1s
温度循環 Temperature Cycling	無可見損傷，No mechanical damage ΔR≤ ±(1.0%R+0.05Ω) 跨接電阻 Jumper：R≤50mΩ	-55℃(30分鐘) ～常温(2～3分鐘) ～125℃(30分鐘) 5個循環 -55℃(30min) ～normal temperature (2～3min) ～125℃(30min) 5cycles

項目 Item	標 准 Specifications	測試方法(GB/T 15654-1995) Test Methods (GB/T 15654-1995)
穩態濕熱 Steady state humidity	無可見損傷，No mechanical damage ΔR≤ ±(3.0%R+0.1Ω) 跨接電阻 Jumper：R≤100mΩ	40℃ ±2℃ 90%~95%RH1000小時 40℃ ±2℃ 90%~95%RH1000h
70℃耐久性 Load Life(70℃)	無可見損傷，No mechanical damage ΔR≤ ±(3.0%R+0.1Ω) 跨接電阻 Jumper：R≤100mΩ	70℃ ±2℃，1000小時， 額定電壓，通1.5小時，斷0.5小時 70℃ ±2℃ 1000h， Rated voltage，1.5h on/0.5h off
上限類別温度耐久性 Endurance at upper temperature	無可見損傷，No mechanical damage ΔR≤ ±(3.0%R+0.1Ω) 跨接電阻 Jumper：R≤100mΩ	125℃ ±2℃ 1000小時 125℃ ±2℃ 1000h

• 包裝 PACKAGING

＊ 包裝形式 Packaging style



＊ 包裝數量 Packaging quantity

塑料袋散包裝 Bag	袋 Bag	盒 Box			箱 Case
		4、5 脚 Pins	6~10 脚 Pins	13~14 脚 Pins	
	200pcs	10 Bags	5 Bags	3 Bags	25 boxes Max.