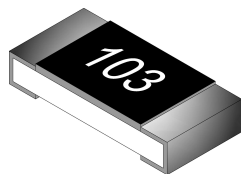


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● 所有規格如有更改，恕不另行通知，詳細內容請參閱公司網頁。 All specifications are subject to change without notice, please visit our company website for more details.	

厚膜晶片電阻 Thick Film Chip Resistor — CR Series



應用 Application

- Consumer electrical
消費性電子
- Home Appliance: Air conditioner, Refrigerator
家電：空調，冰箱
- Computer & relative products: Main board
電腦及相關產品：主機板
- Communication equipment: Cell phone, Fax machine
通訊設備：手機，傳真機
- Power equipment: Power supply, Illumination equipment
電力設備：電源供應器，照明設備
- Measuring instrument: Electric meter, Navigation equipment
測量儀器：電錶，導航設備

特性 Features

- Small size and light weight
體積小，重量輕
- Reliability, high quality
可靠性，高品質

標準電性規格 Standard Electrical Specifications

項目 Item 型別 Type	額定功率 Rated Power at 70℃	最大工作電壓 Max Working Voltage	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/℃)	阻值範圍 Resistance Range		
					B(±0.1%) D(±0.5%)	F(±1%) G(±2%)	J(±5%)
CR0201	0.05 W	25V	50V	-200/+400	-	1Ω~9.9Ω	
				±200	-	10Ω~10MΩ	
CR0402	0.063 W	50V	100V	±400	-	1Ω~9.9Ω	
				±300	-	10Ω~990Ω	
				±200	10Ω~1MΩ	1KΩ~10MΩ	
CR0603	0.1 W	75V	150V	±400	-	1Ω~9.9Ω	
				±200	-	-	10Ω~10MΩ
				±100	10Ω~1MΩ	10Ω~10MΩ	-
CR0805	0.125 W	150V	300V	±400	-	1Ω~9.9Ω	
				±200	-	-	10Ω~10MΩ
				±100	10Ω~1MΩ	10Ω~10MΩ	-
CR1206	0.25 W	200V	400V	±300	-	1Ω~10Ω	
				±200	-	-	10.2Ω~10MΩ
				±100	10.2Ω~1MΩ	10.2Ω~10MΩ	-
CR1210	0.5 W			±300	-	1Ω~10Ω	1Ω~10Ω
				±200	-	-	10.2Ω~10MΩ
				±100	10.2Ω~1MΩ	10.2Ω~10MΩ	-
CR1812	0.75 W			±300	-	1Ω~10Ω	
				±200	-	-	10.2Ω~10MΩ
				±100	10.2Ω~1MΩ	10.2Ω~10MΩ	-
CR2010	0.75 W			±300	-	1Ω~10Ω	
				±200	-	-	10.2Ω~10MΩ
		±100	10.2Ω~1MΩ	10.2Ω~10MΩ	-		
CR2512	1 W	±300	-	1Ω~10Ω			
		±200	-	-	10.2Ω~10MΩ		
		±100	10.2Ω~1MΩ	10.2Ω~10MΩ	-		

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : -55℃ ~ +155℃.

● Type CR1210/1812/2010/2512 : 1Ω~10Ω : 合金膜(Alloy Film)

● Type CR1210/1812/2010/2512 : >10Ω : 厚膜(Thick Film)

型別 Type	0201	0402	0603	0805	1206	1210	1812	2010	1218	2512	2030
跳線元件阻值 Jumper Resistance Value	50mΩ Max										
跳線元件額定電流 Jumper Rated Current	0.5A		1A			2A					

● 低歐姆晶片電阻 Low Ohm Chip Resistor

■ 標準電性規格 Standard Electrical Specifications

項目 Item 型別 Type	額定功率 Rated Power at 70℃	額定電壓範圍 Rated Voltage Range	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/℃)	阻值範圍 Resistance Range (mΩ)
					F(±1%)、J(±5%)
CR0402	0.063 W	0.17~0.25V	0.624 V	±800	470~990
CR0603	0.1 W	0.1~0.31V	0.775 V	±800	100~330
				±600	331~990
CR0805	0.125 W	0.04~0.35V	0.875 V	±1800	10~50
				±800	51~100
				±600	101~990
CR1206	0.25 W	0.05~0.5V	1.25 V	±1800	10~50
				±800	51~100
				±600	101~990
CR1210	0.5 W	0.07~0.7V	1.75 V	±1800	10~50
				±800	51~100
				±600	101~990
CR1812	0.75 W	0.08~0.8V	2.15 V	±1800	10~50
				±800	51~100
				±600	101~990
CR2010	0.75 W	0.08~0.8V	2.15 V	±1800	10~50
				±800	51~100
				±600	101~990
CR2512	1 W	0.1~0.99V	2.475V	±1800	10~50
				±800	51~100
				±600	101~990

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : -55℃ ~ +155℃.

● 高歐姆晶片電阻 High Ohm Chip Resistor

■ 標準電性規格 Standard Electrical Specifications

項目 Item 型別 Type	額定功率 Rated Power at 70 °C	最大工作電壓 Max Working Voltage	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/°C)	阻值範圍 Resistance Range	
					F(±1%)	J(±5%)
CR0402	0.063 W	50V	100V	±200	10.1 MΩ	10.1 MΩ
CR0603	0.1 W	75V	150V			
CR0805	0.125 W	150V	300V			
CR1206	0.25 W	200V	400V		~	~
CR1210	0.5 W				54 MΩ	100 MΩ
CR2010	0.75 W					
CR2512	1 W					

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : -55°C ~ +155°C.

● 可鏤切晶片電阻 Trimmable Chip Resistor – TCR series

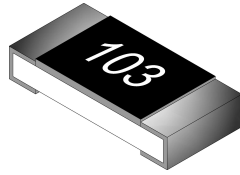
■ 標準電性規格 Standard Electrical Specifications

項目 Item 型別 Type	額定功率 Rated Power at 70 °C	最大工作電壓 Max Working Voltage	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/°C)	阻值容差 Resistance Tolerance	阻值範圍 Resistance Range
TCR0402	0.063 W	50V	100V	±200	±15% ±20% ±30%	10Ω~1MΩ
TCR0603	0.1 W	75V	150V			
TCR0805	0.125 W	150V	300V			
TCR1206	0.25 W	200V	400V			
TCR1210	0.5 W					
TCR1812	0.75 W					
TCR2010	0.75 W					
TCR1218	1 W					
TCR2512	1 W					

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : -55°C ~ +155°C.

■ 厚膜晶片電阻 Thick Film Chip Resistor — CRR Series



■ 應用 Application

- Consumer electrical
消費性電子
- Home Appliance: Air conditioner, Refrigerator
家電：空調，冰箱
- Computer & relative products: Main board
電腦及相關產品：主機板
- Communication equipment: Cell phone, Fax machine
通訊設備：手機，傳真機
- Power equipment: Power supply, Illumination equipment
電力設備：電源供應器，照明設備
- Measuring instrument: Electric meter, Navigation equipment
測量儀器：電錶，導航設備

■ 特性 Features

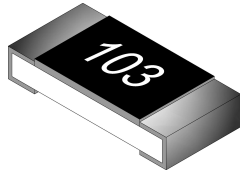
- Small size and light weight
體積小，重量輕
- Reliability, high quality
可靠性，高品質

■ 標準電性規格 Standard Electrical Specifications

項目 Item 型別 Type	額定功率 Rated Power at 70 ℃	最大工作電壓 Max Working Voltage	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/℃)	阻值範圍 Resistance Range		
					B(±0.1%) D(±0.5%)	F(±1%) G(±2%)	J(±5%) K(±10%)
CRR1210	0.5 W	200V	400V	±400	-	1Ω~9.9Ω	
				±200	-		10Ω
				±100	10Ω		-
CRR1812	0.75 W			±400	-	1Ω~9.9Ω	
				±200	-		10Ω
				±100	10Ω		-
CRR2010	0.75 W			±400	-	1Ω~9.9Ω	
				±200	-		10Ω
				±100	10Ω		-
CRR2512	1 W			±400	-	1Ω~9.9Ω	
				±200	-		10Ω
				±100	10Ω		-

- 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.
- 操作溫度範圍 Operating Temperature Range : -55°C ~ +155°C.
- 厚膜(Thick Film)

厚膜高功率晶片電阻 Thick Film High Power Chip Resistor — CRH Series



應用 Application

- Consumer electrical
消費性電子
- Home Appliance: Air conditioner, Refrigerator
家電：空調，冰箱
- Computer & relative products: Main board
電腦及相關產品：主機板
- Communication equipment: Cell phone, Fax machine
通訊設備：手機，傳真機
- Power equipment: Power supply, Illumination equipment
電力設備：電源供應器，照明設備
- Measuring instrument: Electric meter, Navigation equipment
測量儀器：電錶，導航設備

特性 Features

- Small size and light weight
體積小，重量輕
- Reliability, high quality
可靠性，高品質

高功率電性規格 High Power Electrical Specifications

項目 Item 型別 Type	額定功率 Rated Power at 70℃	最大工作電壓 Max Working Voltage	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/℃)	阻值範圍 Resistance Range		
					B(±0.1%) D(±0.5%)	F(±1%) G(±2%)	J(±5%) K(±10%)
CRH0402	0.1W	50V	100V	±400	-	1Ω~9.9Ω	
				±300	-	10Ω~990Ω	
				±200	10Ω~1MΩ	1KΩ~10MΩ	
CRH0603	0.125 W	75V	150V	±400	-	1Ω~9.9Ω	
				±200	-	-	10Ω~10MΩ
				±100	10Ω~1MΩ	10Ω~10MΩ	-
CRH0805	0.25 W	150V	300V	±400	-	1Ω~9.9Ω	
				±200	-	-	10Ω~10MΩ
				±100	10Ω~1MΩ	10Ω~10MΩ	-
CRH1206	0.5 W	200V	400V	±400	-	1Ω~9.9Ω	
				±200	-	-	10Ω~10MΩ
				±100	10Ω~1MΩ	10Ω~10MΩ	-
CRH1210	0.66 W			±400	-	1Ω~9.9Ω	
				±200	-	-	10Ω~10MΩ
				±100	10Ω~1MΩ	10Ω~10MΩ	-
CRH1812	1 W			±400	-	1Ω~9.9Ω	
				±200	-	-	10Ω~10MΩ
				±100	10Ω~1MΩ	10Ω~10MΩ	-
CRH2010	1 W			±400	-	1Ω~9.9Ω	
				±200	-	-	10Ω~10MΩ
				±100	10Ω~1MΩ	10Ω~10MΩ	-
CRH2512	2 W			±400	-	1Ω~9.9Ω	
				±200	-	-	10Ω~10MΩ
				±100	10Ω~1MΩ	10Ω~10MΩ	-

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : -55°C ~ +155°C.

型別 Type	0402	0603	0805	1206	1210	1812	2010	2512
跳線元件阻值 Jumper Resistance Value	50mΩ Max							
跳線元件額定電流 Jumper Rated Current	1A				2A			

● 高功率低歐姆晶片電阻 High Power Low Ohm Chip Resistor

■ 高功率電性規格 High Power Electrical Specifications

項目 Item 型別 Type	額定功率 Rated Power at 70℃	額定電壓範圍 Rated Voltage Range	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/℃)	阻值範圍 Resistance Range (mΩ)
					F(±1%)、J(±5%)
CRH0402	0.1W	0.21~0.31V	0.786V	±800	470~990
CRH0603	0.125W	0.11~0.35V	0.879V	±800	100~330
				±600	331~990
CRH0805	0.25W	0.05~0.5V	1.244V	±1800	10~50
				±800	51~100
				±600	101~990
CRH1206	0.5W	0.07~0.7V	1.759V	±1800	10~50
				±800	51~100
				±600	101~990
CRH1210	0.66W	0.08~0.81V	2.021V	±1800	10~50
				±800	51~100
				±600	101~990
CRH1812	1W	0.1~0.99V	2.487 V	±1800	10~50
				±800	51~100
				±600	101~990
CRH2010	1W	0.1~0.99V	2.487V	±1800	10~50
				±800	51~100
				±600	101~990
CRH2512	2W	0.14~1.41V	3.518V	±1800	10~50
				±800	51~100
				±600	101~990

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : -55℃ ~ +155℃.

● 高功率高歐姆晶片電阻 High Power High Ohm Chip Resistor

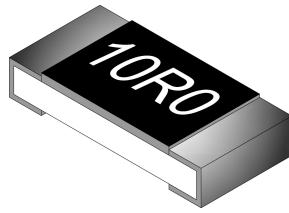
■ 高功率電性規格 High Power Electrical Specifications

項目 Item 型別 Type	額定功率 Rated Power at 70℃	最大工作電壓 Max Working Voltage	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/℃)	阻值範圍 Resistance Range	
					F(±1%)	J(±5%)
CRH0402	0.1W	50V	100V	±200	10.1 MΩ ~ 54 MΩ	10.1 MΩ ~ 100 MΩ
CRH0603	0.125 W	75V	150V			
CRH0805	0.25 W	150V	300V			
CRH1206	0.5 W	200V	400V			
CRH1210	0.66 W					
CRH2010	1 W					
CRH2512	2 W					

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : -55℃ ~ +155℃.

■ 厚膜低溫度係數晶片電阻 Thick Film Low TCR Chip Resistor — CRL Series



■ 應用 Application

- Medical, Precision equipments, Electric meter
醫療，精密設備，電錶
- Converters, Communication devices, Battery
轉換器，通信設備，電池
- Measuring instrument, Printers, Smart Phone
測量儀器，印表機，智慧型手機

■ 特性 Features

- Tight tolerance from $\pm 0.1\%$, $\pm 0.25\%$, $\pm 0.5\%$, $\pm 1\%$
精密公差 $\pm 0.1\%$, $\pm 0.25\%$, $\pm 0.5\%$, $\pm 1\%$
- Low T.C.R. $\pm 25\text{ppm}$, $\pm 50\text{ppm}$
低溫度係數 $\pm 25\text{ppm}$, $\pm 50\text{ppm}$

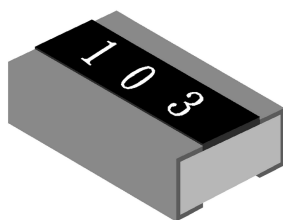
■ 標準電性規格 Standard Electrical Specifications

項目 Item 型別 Type	額定功率 Rated Power at 70℃	最大工作電壓 Max Working Voltage	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/℃)	阻值範圍 Resistance Range
					B(±0.1%)、C(±0.25%)、D(±0.5%)、F(±1%)
CRL0402	0.063W	25V	50V	±50	10.2KΩ~1MΩ
CRL0603	0.1W	75V	150V	±25	101KΩ~332KΩ
				±50	101KΩ~4M7Ω
CRL0805	0.125W	150V	300V	±25	101KΩ~3M32Ω
				±50	101KΩ~3M32Ω
CRL1206	0.25W	200V	400V	±25	101KΩ~2M74Ω
	±50			101KΩ~2M74Ω	
CRL1210	0.5W			±25	101KΩ~1MΩ
				±50	101KΩ~1MΩ
CRL2010	0.75W			±25	101KΩ~1MΩ
				±50	101KΩ~1MΩ
CRL1218	1W			±25	101KΩ~1MΩ
				±50	101KΩ~1MΩ
CRL2512	1W			±25	101KΩ~1MΩ
				±50	101KΩ~1MΩ

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : $-55^{\circ}\text{C} \sim +155^{\circ}\text{C}$.

■ 厚膜寬電極晶片電阻 Thick Film Wide Terminal Chip Resistor— CRW Series



■ 應用 Application

- Navigation equipment
導航設備
- Power equipment: Power supply, Illumination equipment
電力設備：電源供應器，照明設備
- Indoor lighting, Central door locking
室內照明，中央門鎖

■ 特性 Features

- Small size and light weight
體積小，重量輕
- Reliability, high quality
可靠性，高品質
- Chip resistor of the wide terminal type.
寬電極類型的晶片電阻

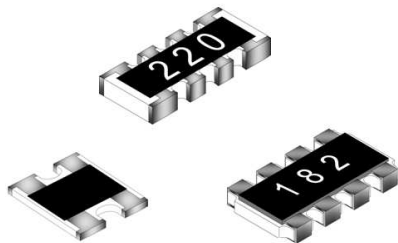
■ 標準電性規格 Standard Electrical Specifications

項目 Item 型別 Type	額定功率 Rated Power at 70℃	最大工作電壓 Max Working Voltage	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/℃)	阻值範圍 Resistance Range	
					F(±1%)	J(±5%)
CRW0612	0.75 W	200V	400V	±400	1Ω~9.9Ω	
				±200	-	10Ω~10MΩ
				±100	10Ω~10MΩ	-
CRW1020	1 W			±400	1Ω~9.9Ω	
				±200	-	10Ω~10MΩ
				±100	10Ω~10MΩ	-
CRW1218	1 W			±400	1Ω~9.9Ω	
				±200	-	10Ω~10MΩ
				±100	10Ω~10MΩ	-
CRW2030	3W			±100	1Ω~1KΩ	
CRW1225	2W			±400	1Ω~9.9Ω	
				±200	-	10Ω~10MΩ
				±100	10Ω~10MΩ	-

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : -55°C ~ +155°C.

■ 厚膜晶片排阻 Thick Film Array Chip Resistor — CRA Series



■ 應用 Application

- Computer & relative products: Main board
電腦及相關產品：主機板
- Communication equipment: Cell phone, Fax machine
通訊設備：手機，傳真機
- Power equipment: Power supply, Illumination equipment
電力設備：電源供應器，照明設備
- Terminal for SDRAM and DDRAM
隨機存取記憶體模組

■ 特性 Features

- Small size and light weight
體積小，重量輕
- Reliability, high quality
可靠性，高品質

■ 標準電性規格 Standard Electrical Specifications

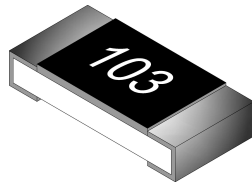
項目 Item 型別 Type	額定功率 Rating Power at 70°C	最大工作電壓 Max Working Voltage	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/°C)	阻值範圍 Resistance Range
					F(±1%) J±(5%)
CRA022R	0.063 W	25V	50V	±400	1Ω~9.9Ω
				±200	10Ω~1MΩ
CRA024R	0.063 W	25V	50V	±400	1Ω~9.9Ω
				±200	10Ω~1MΩ
CRA034R	0.1 W	50V	100V	±400	1Ω~9.9Ω
				±200	10Ω~1MΩ
CRA064R	0.25 W	200V	400V	±400	1Ω~9.9Ω
				±200	10Ω~1MΩ

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : -55°C ~ +155°C

型別 Type	022R	024R	034R	064R
跳線元件阻值 Jumper Resistance Value	50mΩ Max			
跳線元件額定電流 Jumper Rated Current	1A			2A

車規晶片電阻 Automotive Chip Resistor — QR Series



應用 Application

- Automotive electronics
汽車電子
- Navigation equipment, TPMS
導航設備，胎壓偵測
- Heating, Ventilating and Air conditioning
暖氣系統，通風系統，空調
- Indoor lighting, Central door locking, Wiper module
室內照明，中央門鎖，雨刷模組

特性 Features

- Small size and light weight
體積小，重量輕
- Reliability, high quality
可靠性，高品質
- CCD visual quality inspection
CCD 外觀品質檢驗

標準電性規格 Standard Electrical Specifications

項目 Item 型別 Type	額定功率 Rated Power at 70℃	最大工作電壓 Max Working Voltage	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/℃)	阻值範圍 Resistance Range		
					B(±0.1%) D(±0.5%)	F(±1%) G±(2%)	J(±5%) K(±10%)
QR0402	0.063 W	50V	100V	±400	-	1Ω~9.9Ω	
				±300	-	10Ω~990Ω	
				±200	10Ω~1MΩ	1KΩ~10MΩ	
QR0603	0.1 W	75V	150V	±400	-	1Ω~9.9Ω	
				±200	-	10Ω~10MΩ	
				±100	10Ω~1MΩ	10Ω~10MΩ	-
QR0805	0.125 W	150V	300V	±400	-	1Ω~9.9Ω	
				±200	-	10Ω~10MΩ	
				±100	10Ω~1MΩ	10Ω~10MΩ	-
QR1206	0.25 W	200V	400V	±400	-	1Ω~9.9Ω	
				±200	-	10Ω~10MΩ	
				±100	10Ω~1MΩ	10Ω~10MΩ	-
QR1210	0.5 W			±400	-	1Ω~9.9Ω	
				±200	-	10Ω~10MΩ	
				±100	10Ω~1MΩ	10Ω~10MΩ	-
QR1812	0.75 W			±400	-	1Ω~9.9Ω	
				±200	-	10Ω~10MΩ	
				±100	10Ω~1MΩ	10Ω~10MΩ	-
QR2010	0.75 W			±400	-	1Ω~9.9Ω	
				±200	-	10Ω~10MΩ	
				±100	10Ω~1MΩ	10Ω~10MΩ	-
QR1218	1 W			±400	-	1Ω~9.9Ω	
				±200	-	10Ω~10MΩ	
				±100	10Ω~1MΩ	10Ω~10MΩ	-
QR2512	1 W			±400	-	1Ω~9.9Ω	
				±200	-	10Ω~10MΩ	
				±100	10Ω~1MΩ	10Ω~10MΩ	-

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : -55℃ ~ +155℃.

型別 Type	0402	0603	0805	1206	1210	1812	2010	1218	2512
跳線元件阻值 Jumper Resistance Value	50mΩ Max								
跳線元件額定電流 Jumper Rated Current	1A				2A				

● 車規低歐姆晶片電阻 Automotive Low Ohm Chip Resistor

■ 標準電性規格 Standard Electrical Specifications

項目 Item 型別 Type	額定功率 Rated Power at 70℃	額定電壓範圍 Rated Voltage Range	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/℃)	阻值範圍 Resistance Range (mΩ)
					F(±1%)、J(±5%)
QR0402	0.063 W	0.17~0.25V	0.624 V	±800	470~990
QR0603	0.1 W	0.1~0.31V	0.775 V	±800	100~330
				±600	331~990
QR0805	0.125 W	0.04~0.35V	0.875 V	±1800	10~50
				±800	51~100
				±600	101~990
QR1206	0.25 W	0.05~0.5V	1.25 V	±1800	10~50
				±800	51~100
				±600	101~990
QR1210	0.5 W	0.07~0.7V	1.75 V	±1800	10~50
				±800	51~100
				±600	101~990
QR1812	0.75 W	0.08~0.8V	2.15 V	±1800	10~50
				±800	51~100
				±600	101~990
QR2010	0.75 W	0.08~0.8V	2.15 V	±1800	10~50
				±800	51~100
				±600	101~990
QR1218	1 W	0.1~0.99V	2.475V	±800	10~50
				±400	51~990
QR2512	1 W	0.1~0.99V	2.475V	±1800	10~50
				±800	51~100
				±600	101~990

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : -55℃ ~ +155℃.

● 車規高歐姆晶片電阻 Automotive High Ohm Chip Resistor

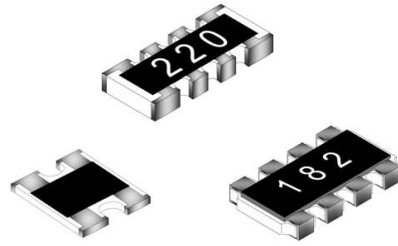
■ 標準電性規格 Standard Electrical Specifications

項目 Item 型別 Type	額定功率 Rated Power at 70 °C	最大工作電壓 Max Working Voltage	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/°C)	阻值範圍 Resistance Range	
					F(±1%)	J(±5%)
QR0402	0.063 W	50V	100V	±200	10.1 MΩ ~ 54 MΩ	10.1 MΩ ~ 100 MΩ
QR0603	0.1 W	75V	150V			
QR0805	0.125 W	150V	300V			
QR1206	0.25 W	200V	400V			
QR1210	0.5 W					
QR1812	0.75 W					
QR2010	0.75 W					
QR1218	1 W					
QR2512	1 W					

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : -55℃ ~ +155℃.

■ 車規晶片排阻 Automotive Array Chip Resistor — QRA Series



■ 應用 Application

- Terminal for SDRAM and DDRAM
隨機存取記憶體
- Automotive electronics
汽車電子
- Heating, Ventilating and Air conditioning
暖氣系統，通風系統，空調
- Indoor lighting, Central door locking, Wiper module
室內照明，中央門鎖，雨刷模組

■ 特性 Features

- Small size and light weight
體積小，重量輕
- Reliability, high quality
可靠性，高品質
- CCD visual quality inspection
CCD 外觀品質檢驗

■ 標準電性規格 Standard Electrical Specifications

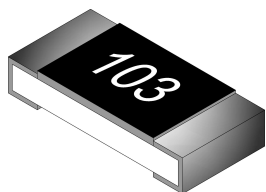
項目 Item 型別 Type	額定功率 Rating Power at 70°C	最大工作電壓 Max Working Voltage	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/°C)	阻值範圍 Resistance Range
					F(±1%)、J(±5%)
QRA022R	0.063 W	25V	50V	±400	1Ω~9.9Ω
				±200	10Ω~1MΩ
QRA024R	0.063 W	25V	50V	±400	1Ω~9.9Ω
				±200	10Ω~1MΩ
QRA034R	0.1 W	50V	100V	±400	1Ω~9.9Ω
				±200	10Ω~1MΩ
QRA064R	0.25 W	200V	400V	±400	1Ω~9.9Ω
				±200	10Ω~1MΩ

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : -55°C ~ +155°C.

型別 Type	022R	024R	034R	064R
跳線元件阻值 Jumper Resistance Value	50m Ω Max			
跳線元件額定電流 Jumper Rated Current	1A			2A

■ 抗硫化晶片電阻 Anti-Sulfur Chip Resistor — ST Series



■ 應用 Application

- Industrial control system, Sensor, Fan, Netcom Station
工業控制系統，感應器，風扇，基站產品
- Navigation equipment
導航設備
- Measuring instrument
量測設備
- Telecommunication equipment, Railway(semaphore) system
電信設備，鐵路(號誌)系統

■ 特性 Features

- Small size and light weight
體積小，重量輕
- Reliability, high quality
可靠性，高品質
- CCD visual quality inspection
CCD 外觀品質檢驗

■ 標準和高功率電性規格 Standard & High Power Electrical Specifications

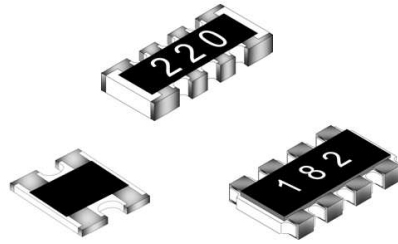
項目 Item 型別 Type	額定功率 Rated Power at 70 °C		最大工作電壓 Max Working Voltage	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/°C)	阻值範圍 Resistance Range		
	標準 Standard	高功率 High				B(±0.1%) D(±0.5%)	F(±1%) G(±2%)	J(±5%) K(±10%)
ST0402	0.063 W	0.1W	50V	100V	±400	-	1 Ω~9.9 Ω	
					±300	-	10 Ω~990 Ω	
					±200	10 Ω~1M Ω	1K Ω~10M Ω	
ST0603	0.1 W	0.125 W	75V	150V	±400	-	1 Ω~9.9 Ω	
					±200	-	10 Ω~10M Ω	
					±100	10 Ω~1M Ω	10 Ω~10M Ω	-
ST0805	0.125 W	0.25 W	150V	300V	±400	-	1 Ω~9.9 Ω	
					±200	-	10 Ω~10M Ω	
					±100	10 Ω~1M Ω	10 Ω~10M Ω	-
ST1206	0.25 W	0.5 W	200V	400V	±400	-	1 Ω~9.9 Ω	
					±200	-	-	10 Ω~10M Ω
					±100	10 Ω~1M Ω	10 Ω~10M Ω	-
ST1210	0.5 W	0.66 W			±400	-	1 Ω~9.9 Ω	
					±200	-	-	10 Ω~10M Ω
					±100	10 Ω~1M Ω	10 Ω~10M Ω	-
ST1812	0.75 W	1 W			±400	-	1 Ω~9.9 Ω	
					±200	-	-	10 Ω~10M Ω
					±100	10 Ω~1M Ω	10 Ω~10M Ω	-
ST2010	0.75 W	1 W			±400	-	1 Ω~9.9 Ω	
					±200	-	-	10 Ω~10M Ω
					±100	10 Ω~1M Ω	10 Ω~10M Ω	-
ST1218	1 W	-			±400	-	1 Ω~9.9 Ω	
					±200	-	-	10 Ω~10M Ω
					±100	10 Ω~1M Ω	10 Ω~10M Ω	-
ST2512	1 W	2 W			±400	-	1 Ω~9.9 Ω	
					±200	-	-	10 Ω~10M Ω
					±100	10 Ω~1M Ω	10 Ω~10M Ω	-

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : -55°C ~ +155°C.

型別 Type	0402	0603	0805	1206	1210	1812	2010	1218	2512
跳線元件阻值 Jumper Resistance Value	50m Ω Max								
跳線元件額定電流 Jumper Rated Current	1A				2A				

■ 抗硫化晶片排阻 Anti-Sulfur Array Chip Resistor — STA Series



■ 應用 Application

- Industrial control system, Sensor, Fan, Netcom Station
工業控制系統，感應器，風扇，基站產品
- Navigation equipment
導航設備
- Measuring instrument
量測設備
- Telecommunication equipment, Railway(semaphore) system
電信設備，鐵路(號誌)系統

■ 特性 Features

- Small size and light weight
體積小，重量輕
- Reliability, high quality
可靠性，高品質
- CCD visual quality inspection
CCD 外觀品質檢驗

■ 標準電性規格 Standard Electrical Specifications

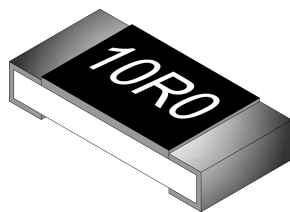
項目 Item 型別 Type	額定功率 Rating Power at 70°C	最大工作電壓 Max Working Voltage	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/°C)	阻值範圍 Resistance Range
					F(±1%) J(±5%)
STA022R	0.063 W	25V	50V	±400	1Ω~9.9Ω
				±300	10Ω~1MΩ
STA024R	0.063 W	25V	50V	±400	1Ω~9.9Ω
				±300	10Ω~1MΩ
STA034R	0.1 W	50V	100V	±400	1Ω~9.9Ω
				±200	10Ω~1MΩ
STA064R	0.25 W	200V	400V	±400	1Ω~9.9Ω
				±200	10Ω~1MΩ

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : -55°C ~ +155°C.

型別 Type	022R	024R	034R	064R
跳線元件阻值 Jumper Resistance Value	50mΩ Max			
跳線元件額定電流 Jumper Rated Current	1A			2A

■ 薄膜晶片電阻 Thin Film Chip Resistor — TR Series



■ 應用 Application

- Medical, Precision equipments, Electric meter
醫療，精密設備，電錶
- Converters
轉換器
- Communication devices, Battery
通信設備，電池
- Measuring instrument, Printers, Smart Phone
量測設備，印表機，智慧型手機

■ 特性 Features

- Tight tolerance from $\pm 0.01\%$, $\pm 0.1\%$, $\pm 0.25\%$, $\pm 0.5\%$, $\pm 1\%$
精密公差 $\pm 0.01\%$, $\pm 0.1\%$, $\pm 0.25\%$, $\pm 0.5\%$, $\pm 1\%$
- Low T.C.R. $\pm 10\text{ppm}$, $\pm 25\text{ppm}$, $\pm 50\text{ppm}$
低溫度係數 $\pm 10\text{ppm}$, $\pm 25\text{ppm}$, $\pm 50\text{ppm}$

■ 標準電性規格 Standard Electrical Specifications

項目 Item 型別 Type	額定功率 Rated Power at 70℃	最大工作電壓 Max Working Voltage	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/℃)	阻值範圍 Resistance Range			
					T(±0.01%) W(±0.05%)	B(±0.1%)	C(±0.25%) D(±0.5%)	F(±1%)
TR0402	0.063W	25V	50V	±10	-	40.2Ω~42K2Ω		
				±25		10Ω~10KΩ		
				±50		10Ω~1MΩ		
TR0603	0.1W	75V	150V	±10	24.9Ω~100KΩ	10Ω~100KΩ		
				±25		4.7Ω~332KΩ		
				±50		4.7Ω~4M7Ω		1Ω~4M7Ω
TR0805	0.125W	150V	300V	±10	24.9Ω~100KΩ	10Ω~220KΩ		
				±25		4.7Ω~3M32Ω		
				±50		4.7Ω~3M32Ω		1Ω~3M32Ω
TR1206	0.25W	200V	400V	±10	24.9Ω~100KΩ	10Ω~220KΩ		
				±25		4.7Ω~2M74Ω		
				±50		4.7Ω~2M74Ω		1Ω~2M74Ω
TR1210	0.25W			±10	24.9Ω~100KΩ	10Ω~499KΩ		
				±25		4.7Ω~1MΩ		
				±50		4.7Ω~1MΩ		1Ω~1MΩ
TR2010	0.5W			±10	24.9Ω~100KΩ	10Ω~499KΩ		
				±25		4.7Ω~1MΩ		
				±50		4.7Ω~1MΩ		1Ω~1MΩ
TR1218	0.5W			±10	24.9Ω~100KΩ	10Ω~499KΩ		
				±25		4.7Ω~1MΩ		
				±50		4.7Ω~1MΩ		1Ω~1MΩ
TR2512	0.75W			±10	24.9Ω~100KΩ	10Ω~499KΩ		
				±25		4.7Ω~1MΩ		
				±50		4.7Ω~1MΩ		1Ω~1MΩ

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : $-55^{\circ}\text{C} \sim +155^{\circ}\text{C}$.

■ 晶片保險絲電阻 Fusible Chip Resistor — FCR Series



■ 特性 Features

- The accurate fusibility is applicable to safety circuits in the wide range of electronic sets.
精確的熔性，適用於廣泛的電子安全電路
- Small in size, light in weight.
體積小，重量輕
- Low temperature coefficient. (under ± 600 PPM/ $^{\circ}\text{C}$)
低溫度係數(± 600 PPM/ $^{\circ}\text{C}$ 以下)
- Treat as the general resistance use.
當成一般的電阻使用

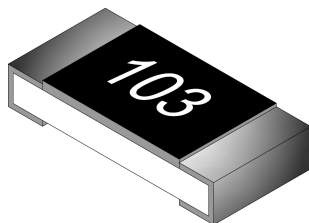
■ 功率特點 Power Characteristic

項目 Item 型別 Type	額定功率 Rated Power at 70 $^{\circ}\text{C}$	最大過負載電壓 Max Hold-Off Voltage	熔斷時間和 最小熔斷功率 Fusing Time & Min. Fusing Power	阻值範圍 Resistance Range	溫度係數 T.C.R. (PPM/ $^{\circ}\text{C}$)	標準容差(%) Standard Tolerance (%)
FCR0402	0.063W	50V	< 30 sec at 2.5W	1 Ω ~1K Ω	1 Ω ~47 Ω (± 600 PPM) 48 Ω ~470 Ω (± 400 PPM) 471 Ω ~1K Ω (± 200 PPM)	$\pm 1\%$, $\pm 5\%$
FCR0603	0.1W	100V	< 30 sec at 3W			
FCR0805	0.125W	150V	< 30 sec at 3.25W			
FCR1206	0.25W	200V	< 30 sec at 5W			
FCR1210	0.33W	250V	< 30 sec at 7.5W			
FCR2010	0.5W	300V	< 30 sec at 11.25W			
FCR2512	0.75W	400V	< 30 sec at 15W			

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : $-55^{\circ}\text{C} \sim +155^{\circ}\text{C}$.

■ 高壓晶片電阻 High voltage Chip Resistor — HR Series



■ 應用 Application

- Power supply, Industrial control system
電源供應器，工業控制系統
- Measurement instrument
測量設備
- Back light inverter
背光逆變器
- Medical, Precision equipments
醫療，精密設備

■ 特性 Features

- Special material and design for high working voltage require
對高工作電壓要求的特殊材質和設計

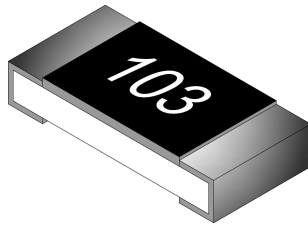
■ 標準電性規格 Standard Electrical Specifications

項目 Item 型別 Type	額定功率 Rated Power at 70℃	最大工作電壓 Max Working Voltage	最大過負載電壓 Max Overload Voltage	溫度係數 T.C.R. (PPM/℃)	阻值範圍 Resistance Range		
					F(±1%)	G(±2%)	J±(5%)
HR0402	0.063W	100V	200V	±300	100Ω~990Ω		
				±200	1KΩ~10MΩ		
HR0603	0.1W	200 V	400 V	±200	47Ω~98.8Ω		
				±100	100Ω~51MΩ		
HR0805	0.125 W	400 V	800 V	±200	47Ω~98.8Ω		
				±100	100Ω~51MΩ		
HR1206	0.25 W	500V	1000 V	±200	47Ω~98.8Ω		
				±100	100Ω~51MΩ		
HR1210	0.33 W			±200	47Ω~549Ω		
				±100	560Ω~51MΩ		
HR2010	0.5 W			±200	47Ω~549Ω		
				±100	560Ω~51MΩ		
HR2512	1 W			±500	47Ω~98.8Ω		
				±200	100Ω~549Ω		
				±100	560Ω~51MΩ		

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

● 操作溫度範圍 Operating Temperature Range : -55℃ ~ +155℃.

■ 金屬膜晶片電阻 Metal Film Chip Resistor — CF Series



■ 應用 Application

- Consumer electronics
消費性電子
- Computer & relative products: Main board
電腦及相關產品：主機板
- Communication equipment: Cell phone, Fax machine
通訊設備：手機，傳真機
- Measuring instrument: Electric meter, Navigation equipment
測量儀器：電錶，導航設備

■ 特性 Features

- Small size and light weight
體積小，重量輕
- Reliability, high quality
可靠性，高品質
- Low T.C.R.
低溫度係數
- Anti Sulfur.
抗硫化

● 低歐姆晶片電阻 Low Ohm Chip Resistor

■ 標準電性規格 Standard Electrical Specifications

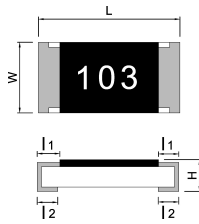
項目 Item 型別 Type	額定功率 Rated Power at 70°C	工作電壓範圍 Working Voltage Range	工作電流範圍 Working Current Range	最大過負載 電壓 Max Overload Voltage	最大過負載 電流 Max Overload Current	溫度係數 T.C.R. (PPM/°C)	阻值範圍 Resistance Range (mΩ)
							F (±1%)、J (±5%)
CF1206	0.5 W	0.16~0.67V	0.74~3.16A	1.067V	5A	±200	50 ~ 200
						±100	201 ~ 910
CF1210	0.66 W	0.18~0.77V	0.85~3.63A	1.225V	5.745A	±200	50 ~ 200
						±100	201 ~ 910
CF1812	1 W	0.22~0.95V	1.05~4.47A	1.508V	7.071A	±200	50 ~ 200
						±100	201 ~ 910
CF2010	1 W	0.22~0.95V	1.05~4.47A	1.508V	7.071A	±200	50 ~ 200
						±100	201 ~ 910
CF2512	2 W	0.32~1.35V	1.48~6.32A	2.133V	10A	±200	50 ~ 200
						±100	201 ~ 910

● 如有非標準品的需求，請聯繫我們的業務部門 For non-standard parts, please contact our sales dept.

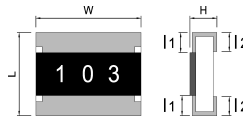
● 操作溫度範圍 Operating Temperature Range : -55°C ~ +155°C.

型別 Type	CF0603	CF0805	CF1206	CF1210	CF2010	CF2512
跳線元件阻值 Jumper Resistance Value	≤ 8mΩ	≤ 5mΩ	≤ 5mΩ	≤ 4mΩ	≤ 5mΩ	≤ 5mΩ
跳線元件額定電流 Jumper Rated Current	4A	7A	10A	12A	14A	20A

■ 晶片電阻型別尺寸 Type Dimension- Chip Resistor



0201 / 0402 / 0603
0805 / 1206 / 1210
1812 / 2010 / 2512



0612/1020/1218
/ 2030/1225

■ 尺寸 Dimension

■ For CR / QR / ST / HR /CRR /TCR / CRH /CRL /CRW / FCR Series

單位 Unit: mm

型別 TYPE	L	W	H	I ₁	I ₂
0201	0.60 ± 0.03	0.30 ± 0.03	0.23 ± 0.05	0.15 ± 0.05	0.15 ± 0.05
0402	1.00 ± 0.10	0.50 ± 0.05	0.30 ± 0.05	0.15 ± 0.10	0.20 ± 0.10
0603	1.60 ± 0.20	0.80 ± 0.15	0.40 ± 0.10	0.30 ± 0.20	0.30 ± 0.10
0805	2.00 ± 0.20	1.25 ± 0.15	0.50 ± 0.15	0.30 ± 0.15	0.40 ± 0.15
1206	3.05 ± 0.10	1.60 ± 0.20	0.55 ± 0.15	0.40 ± 0.20	0.50 ± 0.20
1210	3.05 ± 0.10	2.50 ± 0.20	0.55 ± 0.15	0.50 ± 0.20	0.50 ± 0.20
1812	4.50 ± 0.10	3.10 ± 0.20	0.55 ± 0.05	0.55 ± 0.20	0.70 ± 0.20
2010	5.00 ± 0.20	2.50 ± 0.20	0.55 ± 0.10	0.60 ± 0.20	0.60 ± 0.20
2512	6.30 ± 0.20	3.20 ± 0.20	0.55 ± 0.10	0.60 ± 0.20	0.60 ± 0.20
0612	1.60 ± 0.20	3.20 ± 0.20	0.55 ± 0.10	0.30 ± 0.20	0.50 ± 0.20
1020	2.50 ± 0.20	5.00 ± 0.20	0.55 ± 0.10	0.40 ± 0.20	0.75 ± 0.20
1218	3.10 ± 0.10	4.60 ± 0.10	0.55 ± 0.05	0.40 ± 0.20	0.50 ± 0.20
2030	5.10 ± 0.10	7.60 ± 0.10	1.20 ± 0.10	0.80 ± 0.20	0.80 ± 0.20
1225	3.20 ± 0.20	6.50 ± 0.20	1.20 ± 0.10	0.40 ± 0.20	0.75 ± 0.20

■ For TR Series

單位 Unit: mm

型別 TYPE	L	W	H	I ₁	I ₂
0402	1.00 ± 0.10	0.50 ± 0.05	0.30 ± 0.05	0.15 ± 0.10	0.20 ± 0.10
0603	1.60 ± 0.20	0.80 ± 0.15	0.40 ± 0.10	0.20 ± 0.15	0.30 ± 0.10
0805	2.00 ± 0.20	1.25 ± 0.15	0.50 ± 0.15	0.20 ± 0.15	0.40 ± 0.15
1206	3.05 ± 0.10	1.60 ± 0.20	0.55 ± 0.15	0.30 ± 0.20	0.50 ± 0.20
1210	3.05 ± 0.10	2.50 ± 0.20	0.55 ± 0.15	0.30 ± 0.20	0.50 ± 0.20
1812	4.50 ± 0.10	3.10 ± 0.20	0.55 ± 0.05	0.55 ± 0.20	0.70 ± 0.20
2010	5.00 ± 0.20	2.50 ± 0.20	0.55 ± 0.10	0.30 ± 0.15	0.60 ± 0.20
2512	6.30 ± 0.20	3.20 ± 0.20	0.55 ± 0.10	0.40 ± 0.20	0.60 ± 0.20

■ 零件編號說明 Parts Number Explanation

■ 範例 Example:

產品類型 Product Type	尺寸 Size (Inch)	容差 Resistor Tolerance	阻值 Resistors Value	包裝 Package	數量 Quantity	Optional
CR	0603	J	10R	P	05	
CR	0201	T : ±0.01%		P、Q : Paper Taping	01 : 1000PCS	
QR	0402	W : ±0.05%		E : Embossed Taping	02 : 2000PCS	0.125W
ST	0603	B : ±0.1%		D : Packed in a Bag	04 : 4000PCS	0.25W
TR	0805	C : ±0.25%			05 : 5000PCS	0.5W
HR	1206	D : ±0.5%			10 : 10000PCS	0.66W
CRR	1210	F : ±1%			20 : 20000PCS	1W
TCR	1812	G : ±2%			40 : 40000PCS	2W
FCR	2010	J : ±5%			50 : 50000PCS	3W
CRH	2512	L : ±15%				
CRL	0612	M : ±20%				
CRW	1020	N : ±30%				
	1218					
	1225					
	2030					

■ For CF Series

單位 Unit: mm

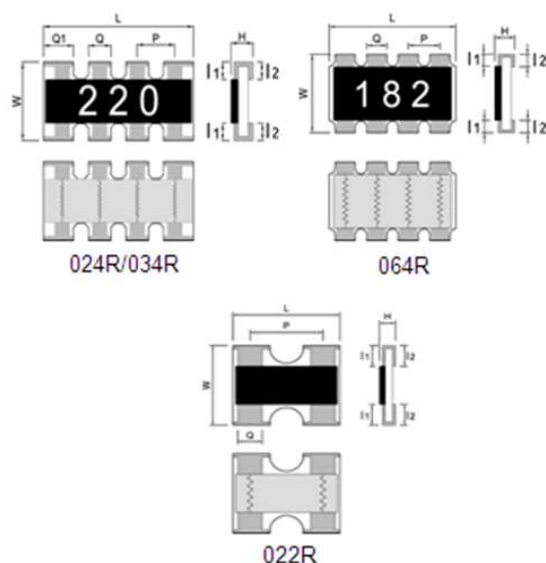
型別 TYPE	L	W	H	I ₁	I ₂
0603	1.60 ± 0.20	0.80 ± 0.15	0.40 ± 0.10	0.30 ± 0.20	0.40 ± 0.10
0805	2.00 ± 0.20	1.25 ± 0.15	0.50 ± 0.15	0.30 ± 0.20	0.50 ± 0.15
1206	3.05 ± 0.10	1.60 ± 0.20	0.55 ± 0.15	0.40 ± 0.20	0.80 ± 0.20
1210	3.05 ± 0.10	2.50 ± 0.20	0.55 ± 0.15	0.50 ± 0.20	0.80 ± 0.20
1812	4.50 ± 0.10	3.10 ± 0.20	0.55 ± 0.10	0.45 ± 0.20	1.20 ± 0.20
2010	5.00 ± 0.20	2.50 ± 0.20	0.55 ± 0.10	0.50 ± 0.20	1.40 ± 0.20
2512	6.30 ± 0.20	3.20 ± 0.20	0.55 ± 0.10	0.50 ± 0.20	1.80 ± 0.20

■ 零件編號說明 Parts Number Explanation

■ 範例 Example:

CF	2512	20	F	R050	M	
產品類型 Product Type	尺寸 Size(Inch)	額定功率 Rated Power	容差 Tolerance	阻值 Resistance	材料 Material	Optional
	0603 0805 1206 1210 1812 2010 2512	05 : 0.5W 06 : 0.66W 10 : 1.00W 20 : 2.00W	F : ±1% J : ±5%	R050 : 50m R R100 : 100mR R910 : 910mR	N : NiCu C : Cu	

■ 晶片排阻型別尺寸 Type Dimension-Array Chip Resistor



■ 尺寸 Dimension for CRA / QRA / STA Series

單位 Unit: mm

型別 TYPE	L	W	H	I ₁	I ₂	P	Q	Q1	C
CRA022R	1.00±0.10	1.00±0.10	0.33±0.05	0.15±0.10	0.25±0.10	0.67±0.10	0.34±0.10	---	---
CRA024R	2.00±0.10	1.00±0.10	0.40±0.10	0.20±0.10	0.20±0.10	0.50±0.10	0.30±0.10	0.43±0.10	---
CRA034R	3.20±0.20	1.60±0.15	0.50±0.10	0.30±0.20	0.30±0.20	0.80±0.20	0.50±0.15	0.61±0.10	---
CRA064R	5.10±0.20	3.10±0.20	0.55±0.15	0.55±0.15	0.55±0.15	1.30±0.20	0.90±0.10	---	---

■ 零件編號說明 Parts Number Explanation

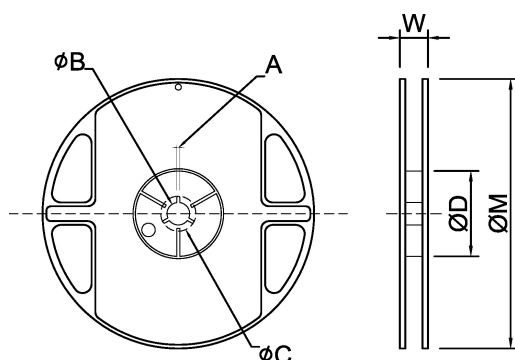
■ 範例 Example:

CRA	024R	J	10R	Q	10
產品類型 Product Type	尺寸 Size (Inch)	容差 Resistor Tolerance	阻值 Resistors Value	包裝 Package	數量 Quantity
CRA QRA STA	022R(0402*2) 024R(0402*4) 034R(0603*4) 064R(1206*4) R : CONVEX	B : ±0.1% C : ±0.25% D : ±0.5% F : ±1% G : ±2% J : ±5%		P、Q : Paper Taping E : Embossed Taping D : Packed in a Bag	01 : 1000PCS 02 : 2000PCS 04 : 4000PCS 05 : 5000PCS 10 : 10000PCS 20 : 20000PCS 40 : 40000PCS 50 : 50000PCS

■ SMD 晶片電阻的附錄 Appendix For SMD Chip Resistor

● 包裝資訊 Packaging Information

◆ 全系列 For All Series

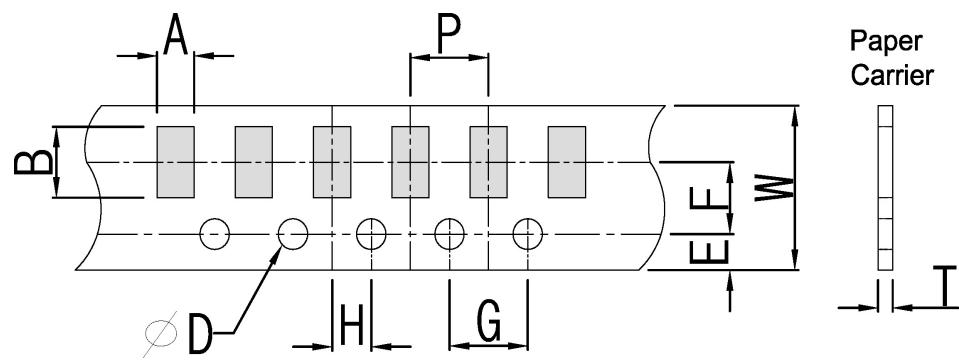


■ 尺寸 Dimension

單位 Unit: mm

型別 TYPE	尺寸 SIZE		A	ϕB	ϕC	ϕD	W	ϕM
0201/022R 024R//0402	7"	10K/Reel	2.0 $\pm$ 0.5	13.5 $\pm$ 1.0	21 $\pm$ 1.0	60 $\pm$ 1.0	11.5 $\pm$ 2.0	178 $\pm$ 2.0
0402	13"	40K/50K Reel	2.0 $\pm$ 0.5	13.5 $\pm$ 1.0	21 $\pm$ 1.0	100 $\pm$ 1.0	11.5 $\pm$ 2.0	330 $\pm$ 2.0
0603/0805/1206/ 1210/034R/0612	7"	5K/Reel	2.0 $\pm$ 0.5	13.5 $\pm$ 1.0	21 $\pm$ 1.0	60 $\pm$ 1.0	11.5 $\pm$ 2.0	178 $\pm$ 2.0
0603/0805 /1206	10"	10K/Reel	2.0 $\pm$ 0.5	13.5 $\pm$ 1.0	21 $\pm$ 1.0	100 $\pm$ 1.0	11.5 $\pm$ 2.0	254 $\pm$ 2.0
	13"	20K/Reel	2.0 $\pm$ 0.5	13.5 $\pm$ 1.0	21 $\pm$ 1.0	100 $\pm$ 1.0	11.5 $\pm$ 2.0	330 $\pm$ 2.0
2010/2512/1020 1812/1218/064R 1225	7"	4K/Reel	2.0 $\pm$ 0.5	13.5 $\pm$ 1.0	21 $\pm$ 1.0	60 $\pm$ 1.0	16.0 $\pm$ 2.0	178 $\pm$ 2.0
2030	7"	1K/Reel	2.0 $\pm$ 0.5	13.5 $\pm$ 1.0	21 $\pm$ 1.0	60 $\pm$ 1.0	19.0 $\pm$ 2.0	178 $\pm$ 2.0

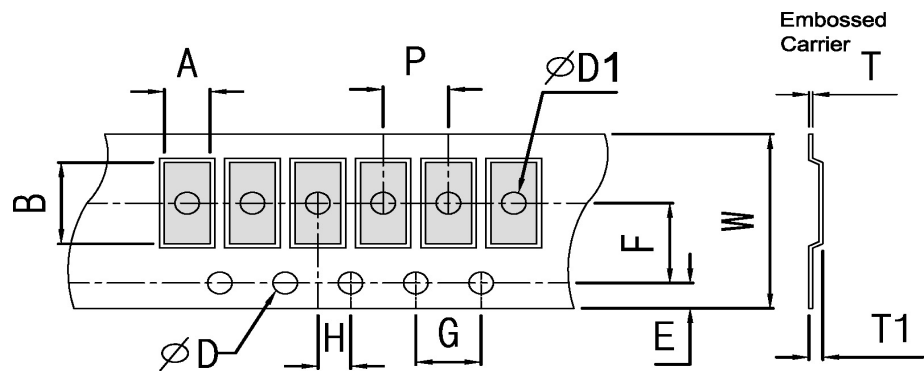
測包規格 Tapping Specification



尺寸 Dimension

單位 Unit: mm

包裝 Packaging	型別 Type	A	B	W	E	F	G	H	T	ϕD	P
紙帶型別 Paper Type	0201	0.45±0.1	0.75±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.35±0.1	1.50 ^{+0.10} ₋₀	2.0±0.1
	0402	0.70±0.1	1.20±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.45±0.1		
	022R	1.25±0.1	1.25±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.45±0.1		
	024R	1.20±0.1	2.20±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.60±0.1		
	0603	1.05±0.2	1.80±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.60±0.1		4.0±0.1
	0805	1.55±0.2	2.30±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.1		
	1206/034R 0612	1.90±0.2	3.50±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.1		
	1210	2.85±0.2	3.50±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.1		



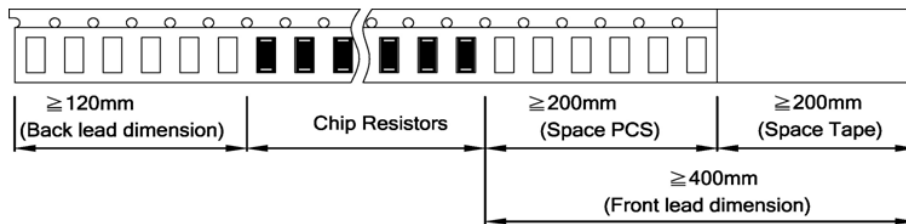
尺寸 Dimension

單位 Unit: mm

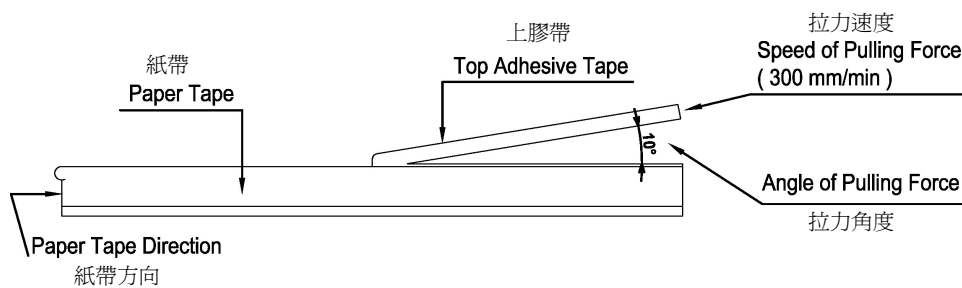
包裝 Packaging	型別 Type	A	B	W	E	F	G	H	T	ϕD	$\phi D1$	T1	P
浮凸膠帶 型別 Embossed Type	2010/ 1020	2.80±0.2	5.60±0.2	12±0.1	1.75±0.1	5.5±0.05	4.0±0.1	2.0±0.05	0.23±0.1	1.50 ^{+0.10} ₋₀	1.50±0.1	0.85±0.15	4.0±0.1
	2512/ 1225	3.40±0.2	6.70±0.2	12±0.1	1.75±0.1	5.5±0.05	4.0±0.1	2.0±0.05	0.23±0.1		1.50±0.1	0.85±0.15	
	1812 1218	3.30±0.2	4.60±0.2	12±0.1	1.75±0.1	5.5±0.05	4.0±0.1	2.0±0.05	0.23±0.1		1.50±0.1	0.85±0.15	
	064R	3.55±0.2	5.55±0.2	12±0.1	1.75±0.1	5.5±0.05	4.0±0.1	2.0±0.05	0.25±0.1		1.50±0.1	0.85±0.15	
	2030	5.50±0.2	7.90±0.2	16±0.1	1.75±0.1	7.5±0.05	4.0±0.1	2.0±0.05	0.25±0.1		1.50±0.1	1.30±0.1	8.0±0.2

■ 包裝材料資料/儲存資料 Packing Material Data / Storage Data

■ 前/後導帶尺寸 Front & Back Lead Dimension

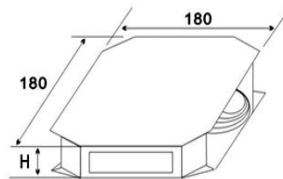


■ 上膠帶剝離力 Top Adhesive Peel Off Strength : 10~70g

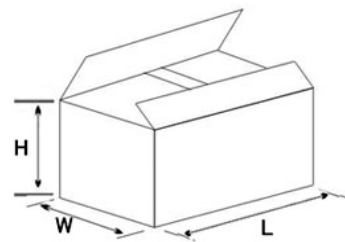


■ 包裝 Package

內盒尺寸 Inner Box Size	
捲 Reel	尺寸 Size H(mm)
1	13
2	24
3	36
5	60
10	113



外箱尺寸 External Box Size			
內含 Contain (Kpcs)	長 Length (mm)	寬 Width (mm)	高 Height (mm)
25K	180	180	60
50K	180	180	110
150K	430	200	200
300K	400	400	200



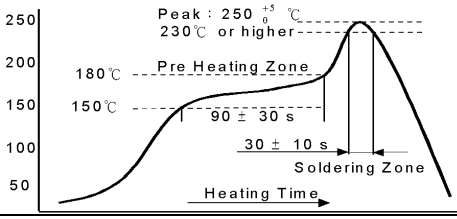
■ 儲存資料 Storage Data :

Storage time at the environment temp: $25\pm 5^{\circ}\text{C}$ & humidity: $60\pm 20\%$ is valid for one year from the date of delivery.

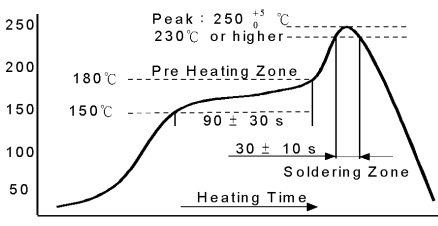
儲存效期：在環境溫度： $25\pm 5^{\circ}\text{C}$ ，濕度： $60\pm 20\%$ ，自交付日起一年。

● 可靠性測試和要求 Reliability Test and Requirement

◆ For CR/QR/ST/HR/CRR/CRH/CRL/CRW/FCR/CRA/QRA/STA/FCR Series

測試項目 Test Item	測試方法 Test Method	流程 Procedure	要求 Requirements
溫度係數 Temperature Coefficient of Resistance (T.C.R)	JIS C 5201-1 clause 4.8	-55℃ 或+ 155℃，25℃ 是室溫參考溫度 -55℃ or +155℃, 25℃ is the reference temperature	請參閱對應等級 Refer to Ratings
短時間過負載 Short Time Overload	JIS C 5201-1 clause 4.13	一般：2.5 倍額定電壓或最大過負載電壓取較少者通 5 秒 General : 2.5 times RCWV or Max. Overload voltage whichever is less for 5 seconds. 高功率：2.5 倍額定電壓或最大過負載電壓取較少者通 2 秒 High Power : 2.5 times RCWV or Max. Overload voltage whichever is less for 2 seconds.	$\pm 1 : \pm(1.0\%+0.05\Omega)$ $\pm 5 : \pm(2.0\%+0.1\Omega)$ Value 阻值 <1Ω : $\pm(2.0\%+0.1\Omega)$
迴焊 IR Reflow	Sony SS-00254	 Peak : 250 $\pm$ 5 °C 230 °C or higher 180 °C --- Pre Heating Zone 150 °C --- 90 $\pm$ 30 s 30 $\pm$ 10 s Soldering Zone Heating Time	$\pm 1 : \pm(1.0\%+0.05\Omega)$ $\pm 5 : \pm(1.0\%+0.05\Omega)$
濾除 Leaching	Sony SS-00254-9	260 $\pm$ 5℃ 30 秒 260 $\pm$ 5℃ for 30 seconds.	>95% Coverage
高溫焊錫 Soldering Heat	JIS C 5201-1 clause 4.18	260 $\pm$ 5℃ 10 秒 260 $\pm$ 5℃ for 10 seconds.	$\pm 1 : \pm(0.5\%+0.05\Omega)$ $\pm 5 : \pm(1.0\%+0.05\Omega)$ Value 阻值 <1Ω : $\pm(1.0\%+0.05\Omega)$
溫度循環 Temperature Cycling	JIS C 5201-1 clause 4.19	-55℃ 到 +155℃，5次循環 -55℃ to +155℃, 5 cycles	0.1%、0.5%、1% : $\pm(0.5\%+0.05\Omega)$ 2%、5% : $\pm(1.0\%+0.10\Omega)$ Value 阻值 <1Ω : $\pm(1.0\%+0.10\Omega)$
電烙鐵 Electric Iron	Sony SS-00254-5	加熱溫度:350 $\pm$ 10℃ 烙鐵加熱時間:3+1/-0 sec Preheating temperature : 350 $\pm$ 10℃ Electric iron preheating time : 3+1/-0 sec	$\pm 1 : \pm(1.0\%+0.05\Omega)$ $\pm 5 : \pm(1.0\%+0.05\Omega)$ Value 阻值 <1Ω : $\pm(1.0\%+0.05\Omega)$
耐溶劑 Resistance to Solvent	JIS C 5201-1 clause 4.29	浸於 20~25℃ 異丙醇溶劑中 60 秒後，取出靜置 48 小時 The tested resistor be immersed into isopropyl alcohol of 20~25℃ for 60 secs. Then the resistor is left in the room for 48 hrs.	$\pm 1 : \pm(0.5\%+0.05\Omega)$ $\pm 5 : \pm(0.5\%+0.05\Omega)$ Value 阻值 <1Ω : $\pm(1.0\%+0.05\Omega)$
耐濕壽命 Load Life in Humidity	JIS C 5201-1 clause 4.24	溫度40 $\pm$ 2℃，濕度90~95% 並施加額定電壓或最大工作電 壓取較少者，90分鐘ON，30分鐘OFF，共1,000 小時 40 $\pm$ 2℃，90~95% R.H. RCWV or Max. working voltage whichever is less for 1000 hrs with 1.5 hrs "ON" and 0.5 hr "OFF" .	0.1%、0.5%、1% : $\pm(1.0\%+0.05\Omega)$ 2%、5% : $\pm(2.0\%+0.05\Omega)$ Value 阻值 <1Ω : $\pm(2.0\%+0.05\Omega)$
耐久性壽命 Load Life (Endurance)	JIS C 5201-1 clause 4.25	溫度70 $\pm$ 2℃ 並施加額定電壓或最大工作電壓取較少者， 90分鐘ON，30分鐘OFF，共1,000 小時 70 $\pm$ 2℃，RCWV or Max. working voltage whichever is less for 1000 hrs with 1.5 hrs "ON" and 0.5 hr "OFF" .	0.1%、0.5%、1% : $\pm(1.0\%+0.05\Omega)$ 2%、5% : $\pm(3.0\%+0.10\Omega)$ Value 阻值 <1Ω : $\pm(3.0\%+0.10\Omega)$
絕緣 Insulation Resistance	JIS C 5201-1 clause 4.6	100V 1分鐘 100V for 1 minute.	$\geq 10G\Omega$
端極彎折 Terminal Bending Strength	JIS C 5201-1 clause 4.33	一次彎折 5 秒 Bending once for 5 seconds D : 0402、0603、0805=5mm 1206、1210、1812=3mm 0612、1218、1020、2010、2512、1225、2030=2mm	$\pm 1 : \pm(1.0\%+0.05\Omega)$ $\pm 5 : \pm(1.0\%+0.05\Omega)$
硫化 Sulfur Test (Only for ST/STA Series)	ASTM-B-809-95	60 $\pm$ 2℃ 1000 小時，不施加額定功率電壓 60 $\pm$ 2℃, no power rating for 1000 hrs	$\Delta R : \pm(1.0\%+0.05\Omega)$

◆ For TR Series

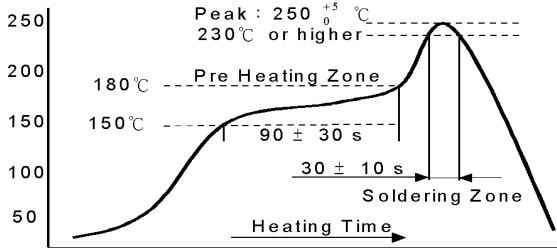
測試項目 Test Item	測試方法 Test Method	流程 Procedure	要求 Requirements
溫度係數 Temperature Coefficient of Resistance (T.C.R)	JIS C 5201-1 clause 4.8	溫度係數+ 155℃，25℃是室溫參考溫度 TCR +155℃，25℃ is the reference temperature	請參閱對應等級 Refer to Ratings
短時間過負載 Short Time Overload	JIS C 5201-1 clause 4.13	一般：2.5 倍額定電壓或最大過負載電壓取較少者通 5 秒 General：2.5 times RCWV or Max. Overload voltage whichever is less for 5 seconds. 高功率：2.5 倍額定電壓或最大過負載電壓取較少者通 2 秒 High Power：2.5 times RCWV or Max. Overload voltage whichever is less for 2 seconds.	$\pm(0.5\%+0.05\Omega)$
迴焊 IR Reflow	Sony SS-00254		$\pm(0.5\%+0.05\Omega)$
濾除 Leaching	Sony SS-00254-9	260±5℃ 30 秒 260±5℃ for 30 seconds.	>95% Coverage
高溫焊錫 Soldering Heat	JIS C 5201-1 clause 4.18	260±5℃ 10 秒 260±5℃ for 10 seconds.	$\pm(0.5\%+0.05\Omega)$
溫度循環 Temperature Cycling	JIS C 5201-1 clause 4.19	-55℃ 到 +155℃，5次循環 -55℃ to +155℃, 5 cycles	$\pm(0.5\%+0.05\Omega)$
電烙鐵 Electric Iron	Sony SS-00254-5	加熱溫度:350±10℃ 烙鐵加熱時間:3+1/-0 sec Preheating temperature : 350±10℃ Electric iron preheating time : 3+1/-0 sec	$\pm(0.5\%+0.05\Omega)$
耐溶劑 Resistance to Solvent	JIS C 5201-1 clause 4.29	浸於 20~25℃ 異丙醇溶劑中 60 秒後，取出靜置 48 小時 The tested resistor be immersed into isopropyl alcohol of 20~25℃ for 60 secs. Then the resistor is left in the room for 48 hrs.	$\pm(0.5\%+0.05\Omega)$
耐濕壽命 Load Life in Humidity	JIS C 5201-1 clause 4.24	溫度40±2℃，濕度90~95% 並施加額定電壓或最大工作電 壓取較少者，90分鐘ON，30分鐘OFF，共1,000 小時 40±2℃, 90~95% R.H., RCWV or Max. working voltage whichever is less for 1000 hrs with 1.5 hrs "ON" and 0.5 hr "OFF".	$\pm(0.5\%+0.05\Omega)$
耐久性壽命 Load Life (Endurance)	JIS C 5201-1 clause 4.25	溫度70±2℃ 並施加額定電壓或最大工作電壓取較少者， 90分鐘ON，30分鐘OFF，共1,000 小時 70±2℃, RCWV, or Max. working voltage whichever is less for 1000 hrs with 1.5 hrs "ON" and 0.5 hr "OFF".	$\pm(0.5\%+0.05\Omega)$
端極彎折 Terminal Bending Strength	JIS C 5201-1 clause 4.33	一次彎折 5 秒 Bending once for 5 seconds D：TR Series 0402、0603、0805=5mm TR Series 1206、1210 =3mm TR Series 1218、2010、2512、2030=2mm	$\pm(0.5\%+0.05\Omega)$
絕緣 Insulation Resistance	JIS C 5201-1 clause 4.6	100V 1 分鐘. 100V for 1 minute.	$\geq 10G\Omega$

● 可根據要求提供電阻溫度係數 - 55℃的測試 Temperature Coefficient of Resistance test to - 55℃ is available on request

◆ For QR/QRA Series

AEC-Q200 test			
測試項目 Test Item	測試方法 Test Method	流程 Procedure	要求 Requirements
溫度循環 Temperature Cycling	JESD22 Method JA-104	1000次循環 (-55℃ 至+ 125℃) 測試結束後24±4小時測量 1000 Cycles (-55℃ to +125℃) Measurement at 24± 4 hours after test conclusion.	0.1%、0.5%、1% : $\pm(0.5\%+0.05\Omega)$ 2%、5% : $\pm(1.0\%+0.10\Omega)$
耐溶劑 Resistance to Solvent	MIL-STD-202 Method 215	加入 OKEM 或同等化學劑清潔水洗 Add Aqueous wash chemical-OKEM clean or equivalent.	1% : $\pm(0.5\%+0.05\Omega)$ 5% : $\pm(0.5\%+0.05\Omega)$
高濕放置 Biased Humidity	MIL-STD-202 Method 103	溫溼度 85℃/85%RH 1000 小時 施加 10%的功率 1000 hours 85℃/85%RH. 10% of operation power.	0.1%、0.5%、1% : $\pm(1.0\%+0.05\Omega)$ 2%、5% : $\pm(3.0\%+0.05\Omega)$
高溫儲存 High Temperature Exposure (Storage)	MIL-STD-202 Method 108	溫度 125℃ 1000 小時 1000 hrs. T=125℃.	0.1%、0.5%、1% : $\pm(0.5\%+0.05\Omega)$ 2%、5% : $\pm(2.0\%+0.05\Omega)$
操作壽命 Operation Life	MIL-STD-202 Method 108	溫度125℃ 並施加額定電壓或最大工作電壓取較少者， 90分鐘ON，30分鐘OFF，共1,000 小時 125℃ RCWV or Max.working voltage whichever is less for 1000 hrs with 1.5 hrs"ON" and 0.5hr "OFF"	0.1%、0.5%、1% : $\pm(1.0\%+0.05\Omega)$ 2%、5% : $\pm(3.0\%+0.10\Omega)$
外觀目視 External Visual	MIL-STD-883 Method 2009	檢驗產品字碼和外觀結構，不需執行電性測試 Electrical test not required. Inspect device construction, marking and workmanship.	—
機械衝擊 Mechanical Shock	MIL-STD-202 Method 213	衝擊加速度：1500g 脈衝時間：0.5ms 衝擊次數：30次衝擊（每個面衝擊5次） Impact acceleration：1500g Pulse duration：0.5ms Number of shocks：30 shocks(5 shocks for each face)	$\pm 1 : \pm(1.0\%+0.05\Omega)$ $\pm 5 : \pm(2.0\%+0.1\Omega)$
振動 Vibration	MIL-STD-202 Method 204	5g's 執行 20 分鐘，3 個方位各 12 循環 5 g's for 20min., 12 cycles each of 3 orientations.	$\pm 1 : \pm(1.0\%+0.05\Omega)$ $\pm 5 : \pm(2.0\%+0.1\Omega)$
靜電 ESD	AEC-Q200- 002 or ISO/DIS 10605	0402 / 0603 : 1KV 0805 and above : 2KV	For the product %
焊錫性 Solderability	J-STD-002	(1) 4 hrs 155℃ 高溫烘烤 dry heat (2) 260±5℃ 10 sec.	$\pm 1 : \pm(0.5\%+0.05\Omega)$ $\pm 5 : \pm(1.0\%+0.05\Omega)$
端極強度 Terminal Strength (SMD)	AEC Q200-006	0402 / 0603 : 8N(牛頓) 0805 and above : 17.7N(牛頓)	無破損 No broken
板彎 Board Flex	AEC Q200-005	一次彎折 60 秒 Beading once for 60 seconds	$\pm 1 : \pm(1.0\%+0.05\Omega)$ $\pm 5 : \pm(1.0\%+0.05\Omega)$

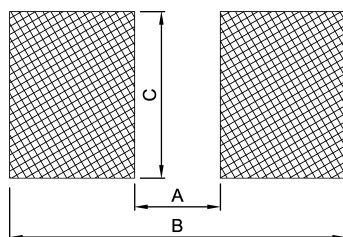
◆ For CF Series

測試項目 Test Item	測試方法 Test Method	流程 Procedure	要求 Requirements
溫度係數 Temperature Coefficient of Resistance (T.C.R)	JIS C 5201-1 clause 4.8	-55℃ 或 +155℃，25℃ 是室溫參考溫度 -55℃ or +155℃, 25℃ is the reference temperature	請參閱對應等級 Refer to Ratings
短時間過負載 Short Time Overload	JIS C 5201-1 clause 4.13	2.5 倍額定功率通 5 秒 2.5 times Rated Power Overload for 5 seconds.	$\pm(2.0\%+0.1\Omega)$
迴焊 IR Reflow	Sony SS-00254		1% : $\pm(1.0\%+0.05\Omega)$ 5% : $\pm(2.0\%+0.05\Omega)$
濾除 Leaching	Sony SS-00254-9	260 $\pm$ 5℃ 30 秒 260 $\pm$ 5℃ for 30 seconds.	>95% Coverage
高溫焊錫 Soldering Heat	JIS C 5201-1 clause 4.18	260 $\pm$ 5℃ 10 秒 260 $\pm$ 5℃ for 10 seconds.	$\pm(1.0\%+0.05\Omega)$
溫度循環 Temperature Cycling	JIS C 5201-1 clause 4.19	-55℃ 到 +155℃，5次循環 -55℃ to +155℃, 5 cycles	$\pm(1.0\%+0.1\Omega)$
耐溶劑 Resistance to Solvent	JIS C 5201-1 clause 4.29	浸於 20~25℃ 異丙醇溶劑中 60 秒後，取出靜置 48 小時 The tested resistor be immersed into isopropyl alcohol of 20~25℃ for 60 secs. Then the resistor is left in the room for 48 hrs.	$\pm(1.0\%+0.05\Omega)$
耐濕壽命 Load Life in Humidity	JIS C 5201-1 clause 4.24	溫度40 $\pm$ 2℃，濕度90~95% 並施加額定電壓，90分鐘ON，30分鐘OFF，共1,000 小時 40 $\pm$ 2℃, 90~95% R.H. RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5 hr "OFF".	$\pm(2.0\%+0.05\Omega)$
耐久性壽命 Load Life (Endurance)	JIS C 5201-1 clause 4.25	溫度70 $\pm$ 2℃ 並施加額定電壓，90分鐘ON，30分鐘OFF，共1,000 小時 70 $\pm$ 2℃, RCWV or for 1000 hrs with 1.5 hrs "ON" and 0.5 hr "OFF".	$\pm(3.0\%+0.1\Omega)$
絕緣 Insulation Resistance	JIS C 5201-1 clause 4.6	100V 1分鐘 100V for 1 minute.	$\geq 10G\Omega$
端極彎折 Terminal Bending Strength	JIS C 5201-1 clause 4.33	一次彎折 5 秒 Bending once for 5 seconds D : 0603、0805=5mm 1206、1210、1812 =3mm 2010、2512 =2mm	$\pm(1.0\%+0.05\Omega)$
硫化 Sulfur Test	ASTM-B-809-95	60 $\pm$ 2℃ 1000 小時，不施加額定功率電壓 60 $\pm$ 2℃ no power rating for 1000 hrs	$\pm(1.0\%+0.05\Omega)$

● 一般資訊 General Information

■ 建議焊盤設計

◆ For CR/QR/ST/TR/HR/CRR/TCR/CRH/CRL/CRW/FCR Series (CF Series)

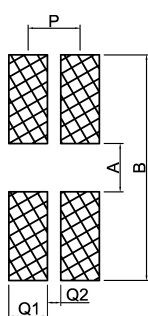


■ 尺寸 Dimension

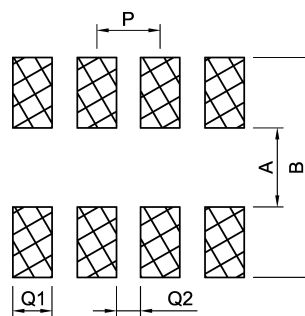
單位 Unit: mm

型別 Type 項目 Item	0201	0402	0603	0805	1206	0612	1210	1812	2010	1020	1218	2512	1225	2030
A	0.25	0.60	0.80 (1.20)	1.30 (1.40)	2.20 (1.80)	0.60	2.00 (2.00)	3.11 (2.31)	3.80 (2.40)	0.75	2.04	4.90 (2.70)	0.85	3.50
B	1.10	1.60	2.40	2.90	4.20	2.90	4.40	5.91	6.60	3.40	4.24	8.10	3.70	7.50
C	0.32	0.70	1.00	1.45	1.80	3.20	2.70	3.30	2.70	5.00	4.80	3.40	6.40	7.80

◆ For CRA/QRA/STA Series



022R

024R 034R
064R

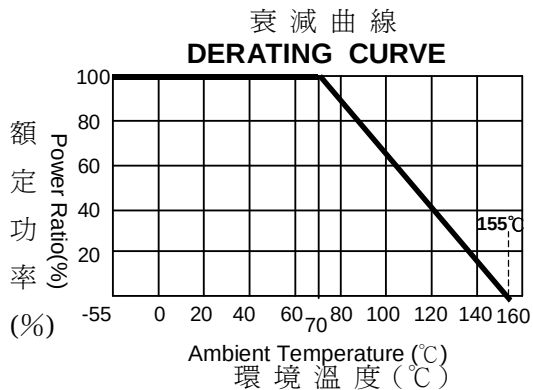
■ 尺寸 Dimension

單位 Unit: mm

型別 Type 項目 Item	022R	034R	064R
A	0.50	1.00	2.00
B	2.00	2.60	4.75
P	0.67	0.80	1.30
Q1	0.33	0.40	0.90
Q2	0.34	0.40	0.375

■ 性能特點 Performance Characteristics

■ 功率衰減曲線 Power Derating Curve



在環境溫度 70℃ 以下作業之功率可達 100%，當環境溫度超過 70℃ 作業之功率要依照衰減曲線進行減額。

Power rating or current rating is in the case based on continuous full-load at ambient temperature of 70℃.

For operation at ambient temperature in excess of 70℃, the load should be derated in accordance with figure of derating Curve.

額定電壓或額定電流 Voltage Rating or Current Rating

電阻值範圍：≥1Ω

額定電壓：對於額定功率之直流或交流(商用週率有效值 RMS)電壓。可用下列公式求得。

Resistance Range: ≥1Ω

Rated Voltage: The resistor shall have a DC continuous working voltage or a RMS AC continuous working voltage at commercial-line frequency and wave form corresponding to the power rating, as determined formula as following:

$$E(RCWV) = \sqrt{P \times R}$$

E=額定電壓 Rated voltage(V)

P=額定功率 Power rating(W)

R=公稱阻值 Nominal resistance(Ω)

■ 操作和儲存溫度 Operation and Storage Temperature

	最小 MIN	最大 MAX
操作溫度 Operation temperature	-55℃	70℃
儲存溫度 Storage temperature	20℃	30℃
儲存濕度 Storage humidity	40%	80%

■ 產品量測方法 Product Testing Method:

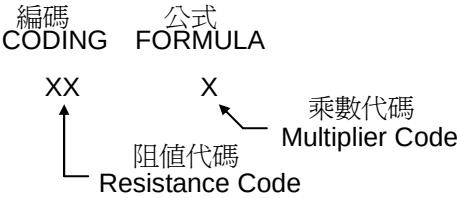
本公司產品使用於我司測包機量測設備是用 4 腳探針接觸產品兩端背面作量測，若有不同量測點及量測方式，可事先告知，以利客製訂作生產。

Our products are tested with our company's tapping & testing equipments by using four-feet probe to touch at the back of both electrodes. Supposed different testing points or methods are requested, please advise beforehand and customized-made production is available.

字碼 Marking

0603 E-96 乘數代碼 Multiplier Code

代碼 Code	A	B	C	D	E	F	G	H	X	Y	Z
乘數 Multiplier	10 ⁰	10 ¹	10 ²	10 ³	10 ⁴	10 ⁵	10 ⁶	10 ⁷	10 ⁻¹	10 ⁻²	10 ⁻³



範例
Example : 10.2KΩ = 102 x 10² Ω = 02C

02 C

33.2Ω = 332 x 10⁻¹ Ω = 51X

51 X

0603 標準 E96 數值和 0603 阻值代碼

0603 Standard E-96 Values and 0603 Resistance Codes

Value	100	102	105	107	110	113	115	118	121	124	127	130	133	137	140	143	147	150	154	158	162	165	169	174
Code	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Value	178	182	187	191	196	200	205	210	215	221	226	232	237	243	249	255	261	267	274	280	287	294	301	309
Code	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Value	316	324	332	340	348	357	365	374	383	392	402	412	422	432	442	453	464	475	487	499	511	523	536	549
Code	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
Value	562	576	590	604	619	634	649	665	681	698	715	732	750	768	787	806	825	845	866	887	909	931	953	976
Code	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

標準電阻值的代碼 Standard Resistance Values in a code

字碼代碼 Marking code:

1%: Ex: 120K, The marking code is 1203

121K, The marking code is 1213



5%: Ex: 120K, The marking code is 124



微歐姆電阻值代碼 mΩ Resistance Codes

Resistance	Code	0603 Code	Resistance	Code	0603 Code	Resistance	Code	0603 Code	Resistance	Code	0603 Code	Resistance	Code	0603 Code
10mΩ	R010	010	65mΩ	R065	065	0.12Ω	R120	R12	0.27Ω	R270	R27	0.56Ω	R560	R56
15mΩ	R015	015	68mΩ	R068	068	0.13Ω	R130	R13	0.30Ω	R300	R30	0.60Ω	R600	R60
20mΩ	R020	020	70mΩ	R070	070	0.15Ω	R150	R15	0.33Ω	R330	R33	0.65Ω	R650	R65
30mΩ	R030	030	75mΩ	R075	075	0.16Ω	R160	R16	0.36Ω	R360	R36	0.68Ω	R680	R68
40mΩ	R040	040	80mΩ	R080	080	0.18Ω	R180	R18	0.40Ω	R400	R40	0.70Ω	R700	R70
50mΩ	R050	050	90mΩ	R090	090	0.20Ω	R200	R20	0.43Ω	R430	R43	0.75Ω	R750	R75
56mΩ	R056	056	0.10Ω	R100	R10	0.22Ω	R220	R22	0.47Ω	R470	R47	0.80Ω	R800	R80
60mΩ	R060	060	0.11Ω	R110	R11	0.25Ω	R250	R25	0.50Ω	R500	R50	0.90Ω	R900	R90

- 注：0201/0402/022 R 系列電阻沒有字碼代碼。Note: 0201 / 0402 / 022R series resistor has no marking code.
- 注：除特殊字碼外，其他的排阻產品 1%和 5%的字碼標示是相同的。
Note: Except for special code, the other Array resistors1%&5% product code is the same.