

鈦酸鋇環形壓敏電阻器

STRONTIUM TITANATE RING VARISTOR

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● 特性 FEATURES

- * 本元件由鈦酸鋇燒制而成。
- * 用于低壓範圍 $E_{10}=1.5\sim60V$ 。
- * 具有大電容量，可在甚寬的頻率範圍內吸收噪音。
- * 具有較大的電壓非線性系數，吸收浪涌能力强，而且具有高可靠性自復原能力。
- * 具有壓敏和電容復合功能，對前沿短的脈衝具有良好的吸收效果。
- * 壓敏電壓 E_{10} 溫度系數小。
- * 耐焊接性好，焊接后 E_{10} 變化率小。伏安特性無方向性。

Conductor ceramic is made of titanium oxide and strontium. Used in the range of low voltage $E_{10}=1.5\sim60V$.

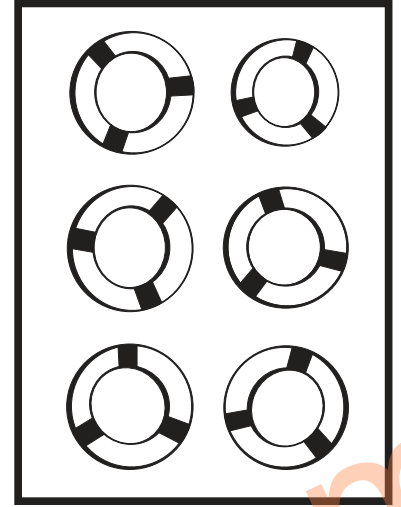
Wide capacitance ,absorb the noise in a wide frequency range.

Excellent non-linearity voltage; High capability to absorb surge and high reliability to recover itself.

With the function both of capacitor and varistor. It can absorb forward short pulse.

Small temperature coefficient of voltage E_{10} .

Excellent soldering-resistance, small E_{10} changing after soldering.



● 用途 APPLICATIONS

用于微型直流馬達的火花消除和噪音吸收。Eliminates sparks between governor contact and commutators and brushes, absorb noise in small Motors

● 訂貨方式 HOW TO ORDER

$\frac{F}{(1)}$ $\frac{S}{(2)}$ $\frac{R}{(3)}$ $\frac{III}{(4)}$ $\frac{A}{(5)}$ $\frac{050}{(6)}$ $\frac{080}{(7)}$

(1)

公司Company	
F	風華公司FengHua

(2)

材料Material	
S	SrTiO3 鈦酸鋇

(3)

電極位置Electrode posction	
S	側面Side
R	正面Surface

(4)

電極數Number of Electrode	
III	三極 3 Poles
V	五極 5 Poles

(5)

外形尺寸 ϕ D(mm) External Dimensions		
	外徑 ϕ D(mm)	內徑 ϕ D(mm)
A	10.7	6.7
B	9.4	5.7
C	8.6	5.7

(6)

下限電壓 E_{10} (V) Lower Limit Voltage	
例Ex	記號 $\times 0.1$
050	5.0

(7)

上限電壓 E_{10} (V) Upper Limit Voltage	
例Ex	記號 $\times 0.1$
080	8.0

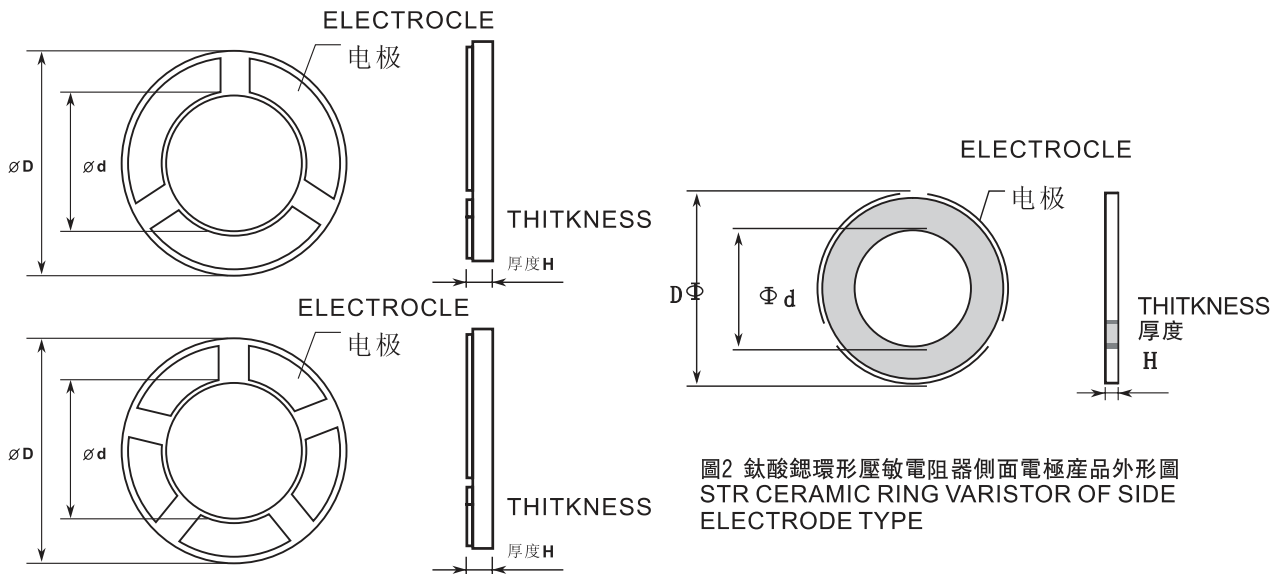


圖1 鈦酸鋇環形壓敏電阻器正面電極產品外形圖
STR CERAMIC RING VARISTOR OF SURFACE ELECTRODE TYPE

圖2 鈦酸鋇環形壓敏電阻器側面電極產品外形圖
STR CERAMIC RING VARISTOR OF SIDE ELECTRODE TYPE

• 外形尺寸 EXTRNAL DIMENSIONS

單位 (Unit):mm

尺寸代碼 The size of code	外徑 ϕD	內徑 ϕd	厚度 H
A	10.7 ± 0.2	6.7 ± 0.2	≤ 1.05
B	9.4 ± 0.3	5.8 ± 0.2	≤ 1.05
C	8.6 ± 0.2	5.7 ± 0.2	≤ 0.85
Co	8.6 ± 0.2	5.0 ± 0.2	≤ 0.8
D	8.0 ± 0.2	5.0 ± 0.2	≤ 0.8
E	7.8 ± 0.2	5.3 ± 0.2	≤ 0.7
Fo	6.6 ± 0.2	4.7 ± 0.2	≤ 0.75
F	6.6 ± 0.2	3.7 ± 0.2	≤ 0.9
G	6.0 ± 0.2	3.7 ± 0.2	≤ 0.8
Go	5.85 ± 0.2	4.1 ± 0.2	≤ 0.8
G1	6.0 ± 0.2	4.0 ± 0.2	≤ 0.8
Ho	5.5 ± 0.2	4.1 ± 0.2	≤ 0.75
H	3.7 ± 0.2	2.5 ± 0.2	≤ 0.65
I	3.1 ± 0.2	2.1 ± 0.2	≤ 0.65
J	3.0 ± 0.2	2.0 ± 0.2	≤ 0.5
K	4.2 ± 0.2	2.8 ± 0.2	≤ 0.65
W	12.7 ± 0.2	9.5 ± 0.2	≤ 1.0
Y	14.0 ± 0.3	7.5 ± 0.2	≤ 1.3
Z	16.0 ± 0.4	9.4 ± 0.2	≤ 1.3

※ 若顧客在外形尺寸上有特殊要求，我們可根據顧客的圖紙設計生產。
Mark indicates non-standard code for customers design requirements.

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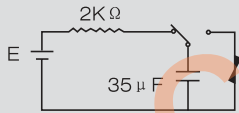
STRONTIUM TITANATE RING VARISTOR

● 規格型號一覽 (A型) PART NUMBERS (TYPE A)

規格型號 Type	測試電流 Measuring current(mA)	10毫安壓敏電壓 E ₁₀ Voltage(V)	靜態電容量 Capacitance 1KHZ (nf)	電極數 Number of Electrode
FSRⅢA020045	10	2.0~4.5	5 min.	3
FSRⅢA040066	10	4.0~6.6	5 min.	3
FSRⅢA050080	10	5.0~8.0	5 min.	3
FSRⅢA060090	10	6.0~9.0	5 min.	3
FSRⅢA080120	10	8.0~12.0	5 min.	3
FSRⅢA090140	10	9.0~14.0	5 min.	3
FSRⅢA100150	10	10.0~15.0	5 min.	3
FSRⅢA130180	10	13.0~18.0	5 min.	3
FSRⅢA170300	10	17.0~30.0	5 min.	3

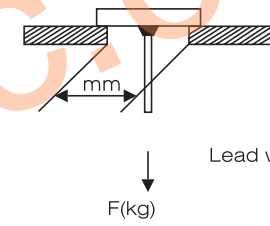
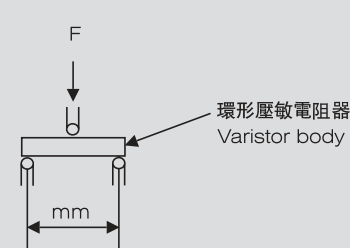
● 技術性能 PERFORMANCE PARAMETER

項目 Item	性能指標 Specified Value	測試方法及摘要 Test Methods and Remarks
1、使用環境溫度 Operating Temperature range	-25℃~+120℃ 50℃~120℃時參考幾何曲線 For the range 50 to120℃. refer to the derating curve	
2、存放環境溫度 Storage Temperature range	5℃~+35℃	
3、額定功率 Rated Power	因產品規格而異 Refer to individual specification	
4、E ₁₀ 特性 E ₁₀ Characteristic	因產品規格而異 Refer to individual specification	(在25±5℃) E: 恒流電源 Constant-current source A: 數字電流計 Digital ammeter V: 數字電壓計 Digital Voltmeter
5、靜電容量 Capacitance	因產品規格而異 Refer to individual specification	測試頻率Measuring frequency:1KHZ±10% 測試電壓Measuring voltage:1.0±0.5Vrms 測試溫度Measuring Temperature:25±5℃
6、非線性系數 Non-linear Coefficient α (at25±5℃)	因產品規格而異 Refer to individual specification $\alpha = \frac{1}{\lg E_{10}/E_1}$ E ₁ :通1mADC直流電時的壓敏電壓 Voltage at referece current with application of 1mADC E ₁₀ :通10mADC直流電時的壓敏電壓 Voltage at referece current with application of 10mADC	E: 恒流電源 Constant-current source A: 數字電流計 Digital ammeter V: 數字電壓計 Digital Voltmeter

項目 Item	性能指標 Specified Value	測試方法及摘要 Test Methods and Remarks
7、溫度特性 Temperature characteristic	± 0.3%/°C	<p>分別在25°C、50°C測出E10的壓敏電壓計算出來。 Measurement of voltage at reference at 25°C and 50°C shall made for the calculation by the following formula:</p> $\frac{E_{10}(50^{\circ}\text{C}) - E_{10}(25^{\circ}\text{C})}{E_{10}(25^{\circ}\text{C})} \times \frac{100}{(50^{\circ}\text{C} - 25^{\circ}\text{C})} (\%/^{\circ}\text{C})$
8、耐脈衝 Pulse resistance	變化率小於：10% Change rate $E_{10} < 10\%$	 <p>在上圖所示電路中，壓敏電阻在20秒內承受10次衝擊，然後測其壓敏特性。 Varistors shall be subjected to 10 times discharge form a capacitor shown in the above circuit with an interval of 20 seconds, and then measured varistor voltage.</p>
9、耐濕性 Moisture resistance	變化率小於10% Change rate $E_{10} < 10\%$	<p>壓敏電阻在60±2°C，90~95%RH時，經240±8小時耐濕性測試，然後在空氣中放置1~2小時後測試。 Varistors shall be subjected to humidity test for 240±8 hrs. at 60±2°C and 90 to 95%RH. After removal from the temperature oven. Varistor shall be placed at for 1 to 2 hrs, and then measured.</p>
10、耐熱性 Heat resistance	變化率小於10% Change rate $E_{10} < 10\%$	<p>在設定溫度125±5°C，持續時間240±8小時後，取出放置1~2小時後測試。 Ambient 125±5°C, Duration 240±8 hrs. Measurement shall be made after 1 to 2 hrs, after removal.</p>

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項目 Item	性能指標 Specified Value	測試方法及摘要 Test Methods and Remarks								
11、耐寒性 Cold resistance	變化率小于10% Change rate $E_{10} \leq 10\%$	<p>在設定溫度$-30 \pm 3^\circ\text{C}$，持續時間240 ± 8小時后，取出放置1~2小時后測試。 Ambient $-30 \pm 3^\circ\text{C}$, Duration 240 ± 8 hrs. Measurement shall be made after 1 to 2 hrs, after removal.</p>								
12、耐焊性 Soldering	變化率小于10% Change rate $E_{10} \leq 10\%$	<p>在$350^\circ\text{C} \pm 10^\circ\text{C}$用含錫量60%的焊錫焊接0.5秒，放置1~2小時后測量。</p> <table border="1"> <tr> <td>Tool</td> <td>Soldering iron</td> </tr> <tr> <td>Soldering material</td> <td>Soft solder stick (sn:60%) (containing flux)</td> </tr> <tr> <td>Temp($^\circ\text{C}$)</td> <td>$350^\circ\text{C} \pm 10^\circ\text{C}$</td> </tr> <tr> <td>Touching time(sec.)</td> <td>0.5 s</td> </tr> </table> <p>Measurement shall be made after 1 to 2 hrs, after removal.</p>	Tool	Soldering iron	Soldering material	Soft solder stick (sn:60%) (containing flux)	Temp($^\circ\text{C}$)	$350^\circ\text{C} \pm 10^\circ\text{C}$	Touching time(sec.)	0.5 s
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Temp($^\circ\text{C}$)	$350^\circ\text{C} \pm 10^\circ\text{C}$									
Touching time(sec.)	0.5 s									
13、電極抗拉性 Tensile strength electrode	因產品規格而异 Refer to individual specification	 <p>Lead wire</p> <p>F(kg)</p> <table border="1"> <tr> <td>引線Lead wire(mm)</td> <td>視產品大小而异</td> </tr> <tr> <td>負荷Load (kg)</td> <td>視產品大小而异</td> </tr> <tr> <td>受力方向 Direction</td> <td>反向 Vertical (Electrode VS lead)</td> </tr> </table>	引線Lead wire(mm)	視產品大小而异	負荷Load (kg)	視產品大小而异	受力方向 Direction	反向 Vertical (Electrode VS lead)		
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14、抗折性 Bending strength of body	因產品規格而异 Refer to individual specification	 <p>F</p> <p>環形壓敏電阻器 Varistor body</p> <p>mm</p>								