有关本公司产品的注意事项

请务必在使用本公司产品目录之前阅读。

⚠ 注意事项

- 本产品目录中记载的内容是至2013年10月的内容。本产品目录记载的内容由于产品的改良等原因发生变更时，恕不另行通知。在您定购我司产品之前请确认最新的产品信息。
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- 有关详细的产品规格我们准备有《交货规格书》，请向我司咨询相关事宜。

- 在您使用我司产品时，请务必进行应用设备实装状态以及应用产品实际使用环境下的测评。

- 本产品目录中记载的电子元器件，电路产品等产品适用于一般电子设备。
  『AV设备，OA设备，家电及办公设备，信息/通讯设备（手机，电脑等）』
  当您计划把本产品目录中记载的产品使用于可能会危及第三方生命安全的应用设备时，请务必提前与我公司取得联系，针对产品信息加以确认。
  【运输用设备（火车控制设备，船舶控制设备等），交通用信号设备，防灾设备，医疗用设备，公共性高的信息通信设备等（电话程控交换机，电话，无线电，电视信号等基地局）】

  另外，请不要在要求高度安全性，可靠性的应用设备上使用本产品目录中记载的产品。【航天设备，航空设备，核控制设备，用于海底的设备，军事设备等】

  同时，应用于安全性，可靠性要求较高的一般电子设备/电路时，请充分进行安全性测评，必要时请在设计过程中追加保护电路。

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- 有关出口的注意事项
  本产品目录中记载的产品中，部分产品在出口时会被归为“外汇及外贸管理法，美国出口管理法规”的管制货物，请及时实施相关手续，依据相关法律法规进行出口。需确认时，可向我司咨询。

环形压敏电阻

■ 特点

- 使用钛酸锶半导体陶瓷材料
- 高电压非线性系数(α)为3　7，大电容量为10　150nF。可在宽频率范围内吸收噪音
- 正面电极型／侧面电极型

■ 用途

- 用于小型电机的调节器连接及转换器和电刷的火花消除、噪音吸收(EMI对策)

■ 型号标示法

S R J △ △ 0 4 0 F 3 ○ ○ ○ ○

❶材质种类	
S	STR系

❷电极位置	
R	正面

❸外型尺寸 φD [mm]	
H△	6.0※
J△	8.0※

△=空格

※属于定制品，请单独咨询。

❹个别规格	
△	标准值

△=空格

❺标称下限电压 E_{10} [V]	
例	代码×0.1
020	2.0
176	17.6

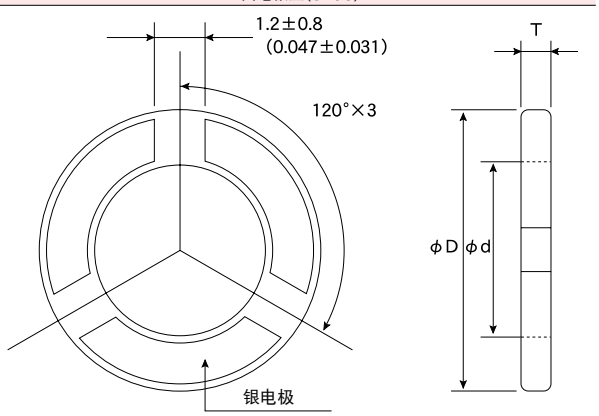
❻上限电压 [V]	一位整数值表示
A	1
B	2
C	3
D	4
E	5
F	6
G	7
H	8
I	9
J	0

❼电极数目	
3	3极
5	5极

❽公司管理记号	
△△△△	标准品

△=空格

■ 外型尺寸

	正面电极型(SRJC)
Fig.	
φD	8.50±0.20 (0.335±0.008)
φd	5.00±0.20 (0.197±0.008)
T	0.65+0.10/−0.15 (0.026+0.004/−0.006)

单位: mm (inch)

■ 项目一览／最小订货单位数量

	型号	EHS	外径 φD[mm]	内径 φd[mm]	厚度 T[mm]	测试电流 [mA]	压敏电压 [V]	非线性系数	电极数目	最小订货单位数量 [pcs] 盒装
正面电极	SRR	RoHS	12.70±0.40	9.50±0.30	1.30 max.	10	13.0 to 50.0	≧2.0	3 or 5	1000
	SRPP	RoHS	12.00±0.30	6.95±0.15	1.10 max.		4.0 to 60.0		3 or 5	2000
	SRJA	RoHS	8.50±0.25	5.80±0.15	0.65±0.15		2.0 to 35.0		3	3000
	SRJC	RoHS	8.50±0.20	5.00±0.20	$0.65^{+0.10}_{-0.15}$		2.0 to 35.0			
	SRG	RoHS	5.85±0.15	$4.10^{+0.10}_{-0.05}$	0.5±0.1		3.0 to 9.0			
	SRHN	RoHS	4.20±0.15	$2.80^{+0.20}_{-0.10}$	$0.50^{+0.10}_{-0.20}$		2.0 to 6.5			6000
	SRHTT	RoHS	3.00±0.12	2.15±0.10	0.55 max.		3.0 to 6.5			
	SRHVP	RoHS	$2.80^{+0.05}_{-0.15}$	$1.90^{+0.15}_{-0.00}$	0.50 max.		2.5 to 6.0			

※非上述规格尺寸和特性的产品，　也可与我们联系定制。

■PACKAGING

①Minimum Quantity

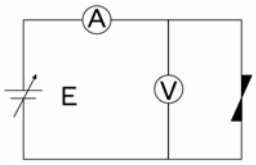
Type	Minimum Quantity [pcs]
	Case Package
SRR	1000
SRPP	2000
SRJA	3000
SRJC	3000
SRG	3000
SRHN	6000
SRHTT	6000
SRHVP	6000

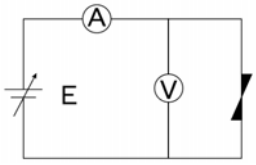
■RELIABILITY DATA

1. Operating Temperature Range	
Specified Value	−25～＋120℃ For the range of 50 to 120℃, refer to the derating curve.

2. Storage Temperature Range	
Specified Value	−25～＋ 120℃

3. Rated Power	
Specified Value	Refer to the individual specification

4. E_{10} Characteristic	
Specified Value	Refer to the individual specification
Test Methods and Remarks	(at 25±5℃)  E : Constant-current source A : Digital ammeter V : Digital voltmeter E_{10} : Voltage at reference current with application of 10mADC Input waveform is square wave. (Width : 50m sec., max.)

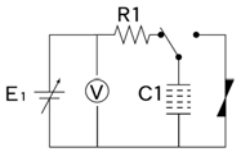
5. Non-linear Coefficient Rated α (at 25±5℃)	
Specified Value	Refer to the individual specification Difinition $\alpha = \frac{1}{\log E_{10} / E_1}$ E_1 : Voltage at reference current with application of 1mADC E_{10} : Voltage at reference current with application of 10mADC
Test Methods and Remarks	 E : Constant-current source A : Digital ammeter V : Digital voltmeter E_{10} : Voltage at reference current with application of 10mADC Input waveform is square wave. (Width : 50m sec., max.)

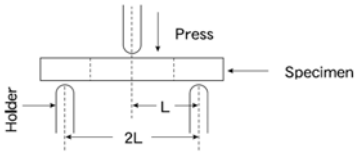
6. Capacitance	
Specified Value	Refer to the individual specification
Test Methods and Remarks	Measuring frequency : 1kHz±10% Measuring voltage : 1.0±0.5Vrms Measuring temperature : 25±5℃

7. Tangent of Loss Angle (tan δ)	
Specified Value	Refer to the individual specification
Test Methods and Remarks	Measuring frequency : 1kHz±10% Measuring voltage : 1.0±0.5Vrms Measuring temperature : 25±5℃

8. Temperature Characteristic of Capacitance	
Specified Value	Refer to the individual specification
Test Methods and Remarks	Measurement of voltage at reference current at 25℃ and 50℃shall be made for the calculation by the following equation. $\alpha = \frac{E_{10}\ (50℃) - E_{10}\ (25℃)}{E_{10}\ (25℃)} \times \frac{100}{50℃ - 25℃}\ (\%/℃)$ Change of maximum capacitance deviation in step 1 to 5

step	Temperature(℃)
1	25 (Reference temperature)
2	50

9. Pulse	
Specified Value	Refer to the individual specification
Test Methods and Remarks	 R1 : 2kΩ C1 : 35±5μF E_1 : Individual specification Number of pulse application : 10 times Measuring temperature : 25±5℃

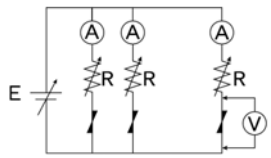
10. Body Strength	
Specified Value	Refer to the individual specification
Test Methods and Remarks	 Pressing force : Refer to Individual specification L : Depends upon the sample size

11. Adhesion of Electrode	
Specified Value	No detachment of electrode or sign of such defects
Test Methods and Remarks	Lead wire shall be soldered perpendicularly onto the electrode, then pulled out perpendicularly. Speed to pull out : 2.5cm／2sec. Solder to be used : Eutectic solder

12. Resistance to Soldering Heat	
Specified Value	E_{10} : Within ±20%, α : Refer to the individual specification
Test Methods and Remarks	Temperature at the tip of soldering iron : 280±5℃, 300±5℃ Duration : 2 sec. Preheating temperature : 150℃, 170℃ Recovery : 1 hr of recovery under the standard condition after the test.

13. Resistance to Solvent	
Specified Value	No significant abnormality in appearance and legible marking.

14. Damp Heat	
Specified Value	E_{10} : Within ±20%, α : Refer to the individual specification
Test Methods and Remarks	Temperature : 60±10℃ Humidity : 90 to 95% RH Duration : 300±8 hrs Recovery : 1 hr of recovery under the standard condition after the removal from test chamber. Measuring conditions : E_1 = Current application for 30 sec. : E_{10} = Current application for 60 sec.

15. DC Load Resistance	
Specified Value	E_{10} : Within ±20%, α : Refer to the individual specification
Test Methods and Remarks	 E : Constant-current source A : Digital ammeter V : Digital voltmeter R : Load adjusting variable resistor P=Ⓥ×Ⓐ Test environment : standard condition Current : Refer to the individual specification Duration : 300±8 hrs Recovery : 1 hr of recovery under the standard condition after the removal from test chamber.

Note on standard condition :

"standard condition" referred to herein is defined as follows :

5 to 35℃ of temperature, 45 to 85% relative humidity and 86 to 106kPa of air pressure.

When there are questions concerning measurement results :

In order to provide correlation data, the test shall be conducted under condition of 25±2℃ of temperature, 60 to 70% relative humidity and 86 to 106kPa of air pressure.

Unless otherwise specified, all the tests are conducted under the "standard condition."

RING VARISTORS

■PRECAUTIONS

1. Circuit Design	
Precautions	◆Verification of operating environment, electrical rating and performance 1. A malfunction in medical equipment, spacecraft, nuclear reactors, etc. may cause serious harm to human life or have severe social ramifications. As such, any varistors to be used in such equipment may require higher safety and/or reliability considerations and should be clearly differentiated from components used in general purpose applications. ◆Operating Environment precautions 1. Varistors should not be used in the following environments : （1）Environmental conditions to avoid a. exposure to water or salt water. b. exposure to moisture or condensation. c. exposure to corrosive gases (such as hydrogen sulfide, sulfurous acid, chlorine, and ammonia).

2. Soldering	
Precautions	◆Soldering ・ Be sure to do pre-heating sufficiently so that the difference between a soldering iron and ring varistors in temperature should be 150℃ or less. ・ Ring Varistors are susceptible to thermal shock when exposed to rapid or concentrated heating or rapid cooling. Therefore, the soldering process must be conducted with a great care so as to prevent malfunction of the components due to excessive thermal shock. ・ Use a 30W soldering iron with a maximum tip diameter of 3.0mm. ・ The soldering iron should not directly touch the products.
Technical considerations	◆Soldering Refer to individual specifications.