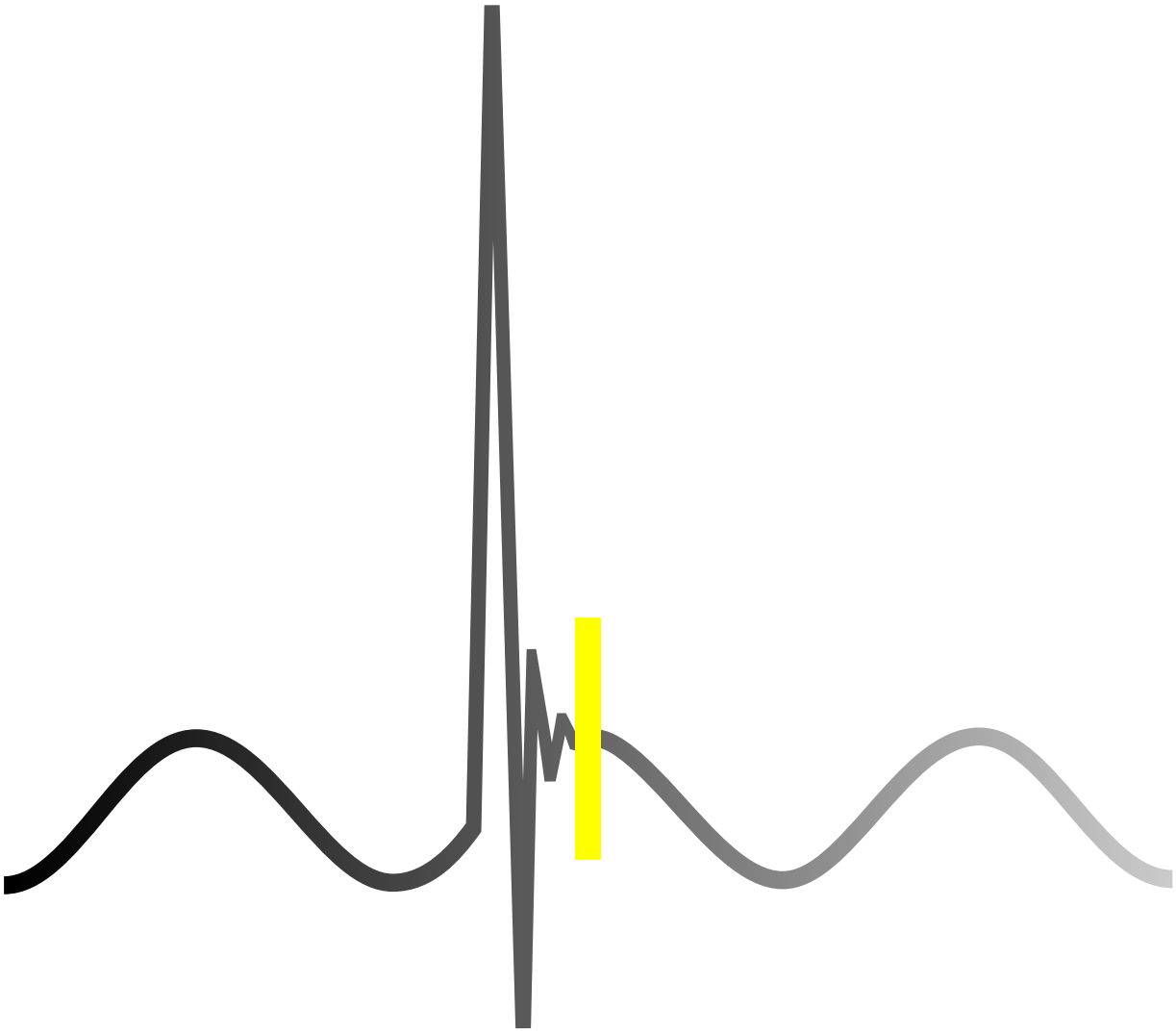
W O R L D P R O D U C T S

SILCON VARISTORS



WORLD PRODUCTS, INC.

World Products Inc. 19654 8th St. East, Sonoma, CA, USA, 95476 . . Phone: (707) 996-5201 . . Fax: (707) 996-3380

Silicon Varistors

World Products Inc., specializing in protection products for AC and DC circuits, is proud to feature WPI's full line of Silicon Varistors.

Varistors are a key point in the construction of electronic products.
Silicon varistors, which incorporate reliable semiconductor technology, will increase the quality of your product.

At World Products Inc., we keep our promises. It's just that simple. You will see for yourself when you buy a Silicon Varistor that you have not only purchased a fine component, but that we will also provide the finest customer service in today's marketplace.

Table of Contents

World Products Inc. 19654 8th St. East, Sonoma, CA, USA, 95476 . . Phone: (707) 996-5201 . . Fax: (707) 996-3380

Quick Guide to Silicon Varistors

Series		Model	DC Forward Current I_F(mA)	Peak Forward Surge Current I_{FSM}(A)*	Forward Voltage V_F(V)	Reverse Current I_R(μA)	
SV	SYMMETRICAL TYPE	SV-2SS	150	---	Less Than 4 I_F = 100mA	FORWARD CURRENT I_F(μA)	Less Than 50 V_F = 1.2V
		SV-3SS	250	---	Less Than 2 I_F = 100mA		Less Than 50 V_F = 0.6V
		SV-4SS	150	---	1.8 ± 0.2 I_F = 1mA		---
VR **60SS** **61SS**		VR-60SS	400	---	Less Than 1.5 I_F = 1A		Less Than 20 V_F = 0.2V
		VR-61SS	150	---	2.3 ± 0.25 I_F = 1mA	---	
SVO	UNSYMMETRICAL TYPE	SVO2YS	200	30	1.2 ± 0.2 I_F = 1mA	10 V_R = 100V	
		SVO3YS	150	27	1.8 ± 0.2 I_F = 1mA	10 V_R = 100V	
		SVO4YS	100	25	2.35 ± 0.25 I_F = 1mA	10 V_R = 100V	
		SVO5YS	80	22	3.0 ± 0.3 I_F = 1mA	10 V_R = 100V	
		SVO6YS	70	20	3.5 ± 0.35 I_F = 1mA	10 V_R = 100V	

* The values are measured at 50Hz half sine wave.

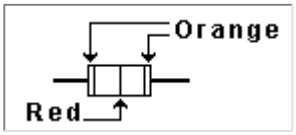
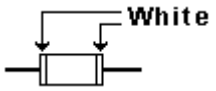
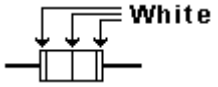
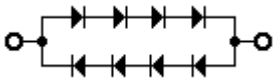
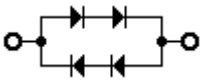
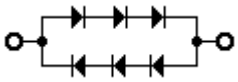
World Products Inc. 19654 8th St. East, Sonoma, CA, USA, 95476 . . Phone: (707) 996-5201 . . Fax: (707) 996-3380

SV Symmetrical Type Silicon Varistors

Applications

- Switchboard (specification 3491)
- Divided voltage stabilization circuit
- Signal control circuit
- Temperature detection circuit
- Zener voltage stabilization circuit
- Meter protection circuit

Maximum Ratings Ta = 25°C

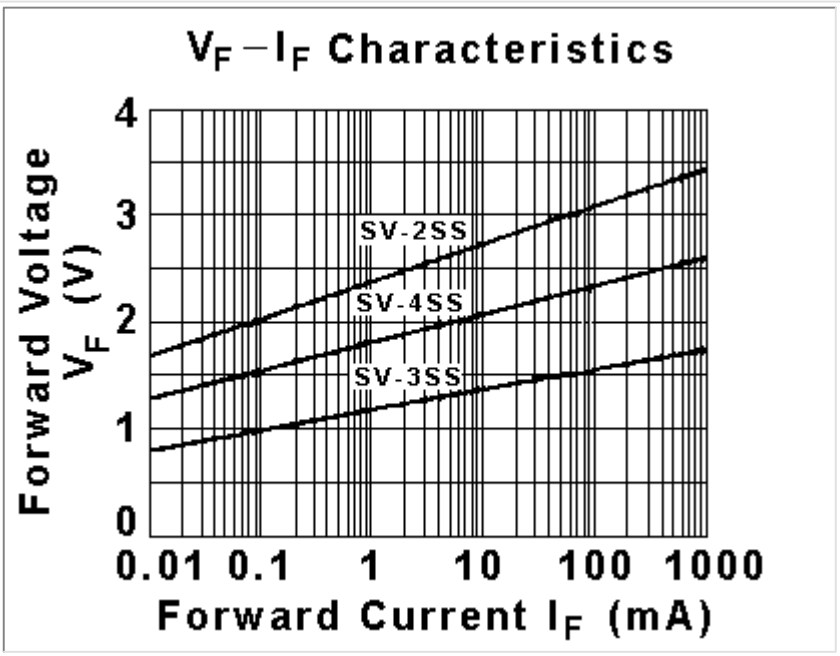
Item	Symbol	SV-2SS	SV-3SS	SV-4SS	Unit
DC Forward Current	I_F	150	250	150	mA
Junction Temperature	T_j	-40 ~ +100			°C
Storage Temperature	T_{stg}	-40 ~ +100			°C
Color Indication					
Internal Junction					

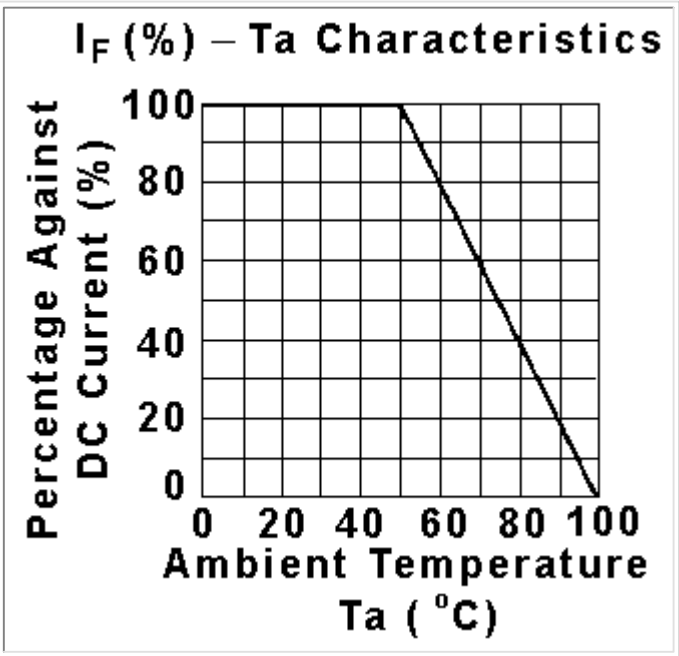
DC Characteristics Both Directions, Ta = 25°C

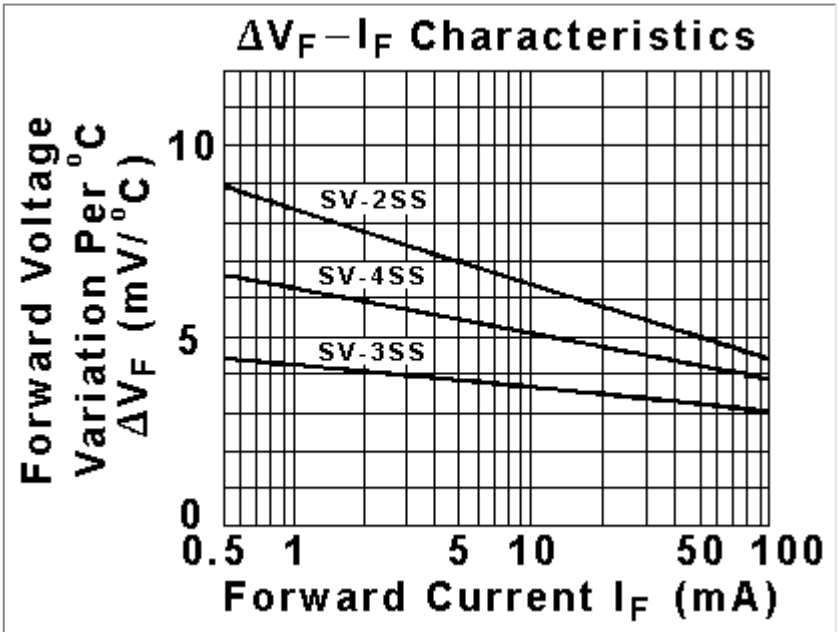
Item	Symbol	Condition	SV-2SS	SV-3SS	SV-4SS	Unit
Forward Voltage	V_F	I_F = 100mA	4 max	2 max	---	V
		I_F = 1mA	---	---	1.80 ± 0.20	
		I_F = 10mA	---	---	2.15 ± 0.20	
		I_F = 30mA	---	---	2.40 ± 0.25	
Forward Current	I_F	V_F = 1.2V	50 max	---	---	µA
		V_F = 0.6V	---	50 max	---	
		V_F = 0.9V	---	---	50 max	

World Products Inc. 19654 8th St. East, Sonoma, CA, USA, 95476 . . Phone: (707) 996-5201 . . Fax: (707) 996-3380

SV Symmetrical Type Silicon Varistors - (continued)

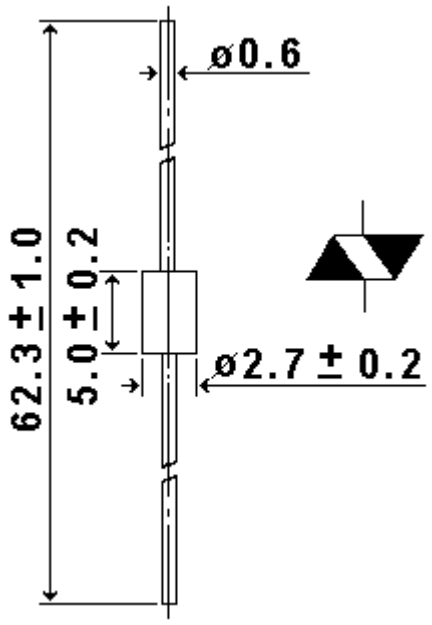






Outline Drawing Unit: mm

Resin Molded Type
Nonflammability: UL94V-O or equivalent
Weight: Approx. 0.3g



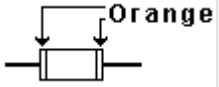
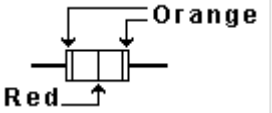
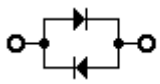
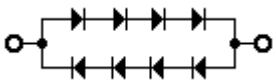
World Products Inc. 19654 8th St. East, Sonoma, CA, USA, 95476 . . Phone: (707) 996-5201 . . Fax: (707) 996-3380

VR -60SS/-61SS Symmetrical Type

Applications

- 600 type telephone set (specification 3491)
- Divided voltage stabilization circuit
- Signal control circuit
- Temperature detection circuit
- Zener voltage stabilization circuit
- Meter protection circuit

Maximum Ratings Ta = 25°C

Item	Symbol	VR-60SS	VR-61SS	Unit
DC Forward Current	I_F	400	150	mA
Junction Temperature	T_j	-40 ~ +100		°C
Storage Temperature	T_{stg}	-40 ~ +100		°C
Color Indication				
Internal Junction				

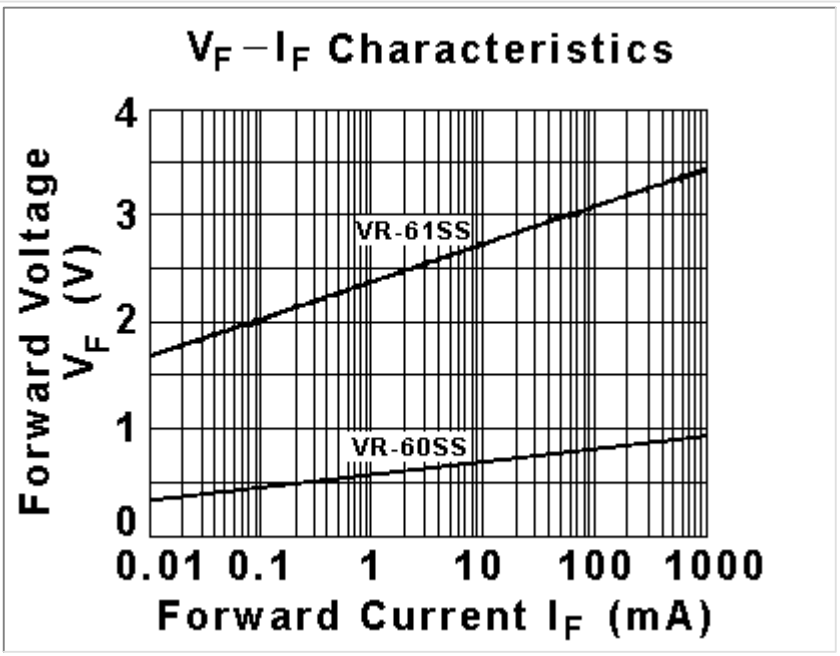
DC Characteristics Both Directions, Ta = 25°C

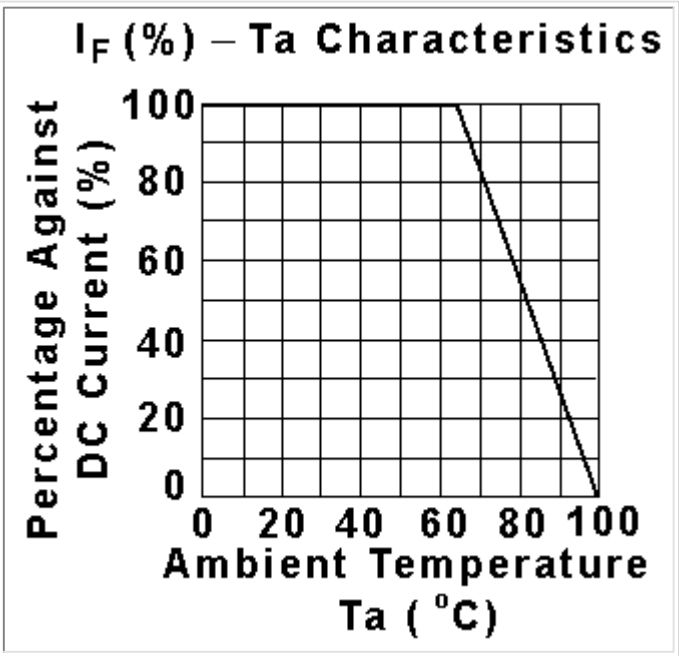
Item	Symbol	Condition	VR-60SS	VR-61SS	Unit
Forward Voltage	V_F	I_F = 1A *	1.5 max	---	V
		I_F = 1mA	---	2.30 ± 0.25	
		I_F = 10mA	---	2.75 ± 0.25	
		I_F = 70mA	---	3.10 ± 0.25	
Forward Current	I_F	V_F = 0.2V	20 max	---	µA

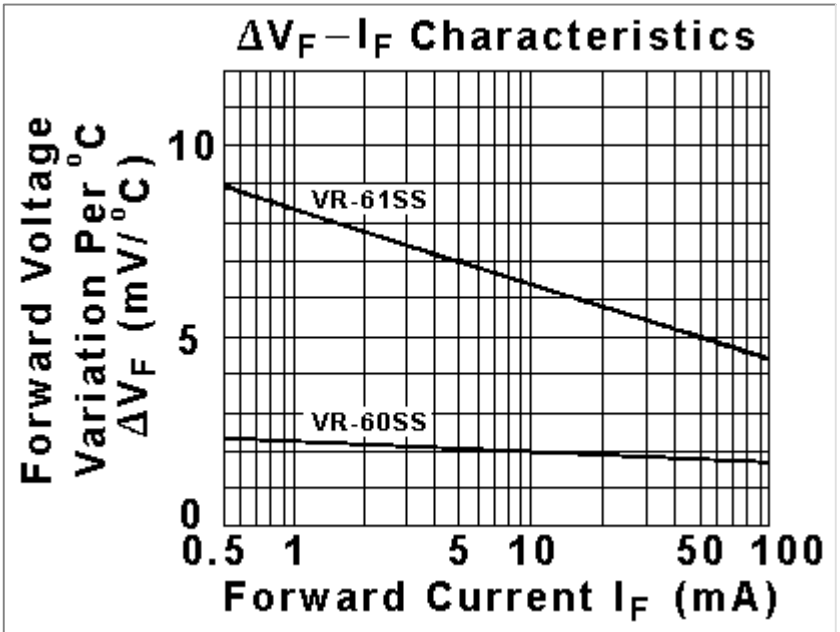
* - Value obtained within 3 sec.

World Products Inc. 19654 8th St. East, Sonoma, CA, USA, 95476 . . Phone: (707) 996-5201 . . Fax: (707) 996-3380

VR -60SS/-61SS Symmetrical Type - (continued)

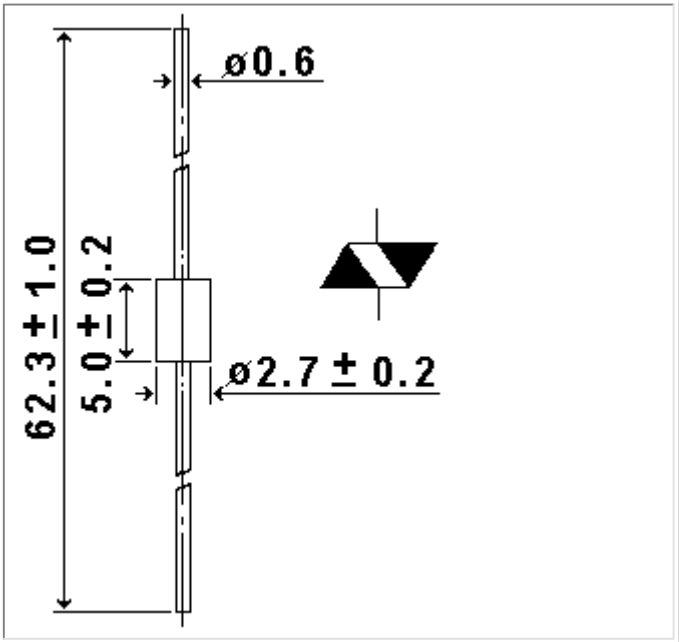






Outline Drawing Unit: mm

Resin Molded Type
Nonflammability: UL94V-O or equivalent
Weight: Approx. 0.3g



World Products Inc. 19654 8th St. East, Sonoma, CA, USA, 95476 . . Phone: (707) 996-5201 . . Fax: (707) 996-3380

SVO Unsymmetrical Type

Applications

- Noise Limiter
- Gauge Protection
- Current Blocking
- Voltage Limiter
- Temperature Compensation

Maximum Ratings Ta = 25°C

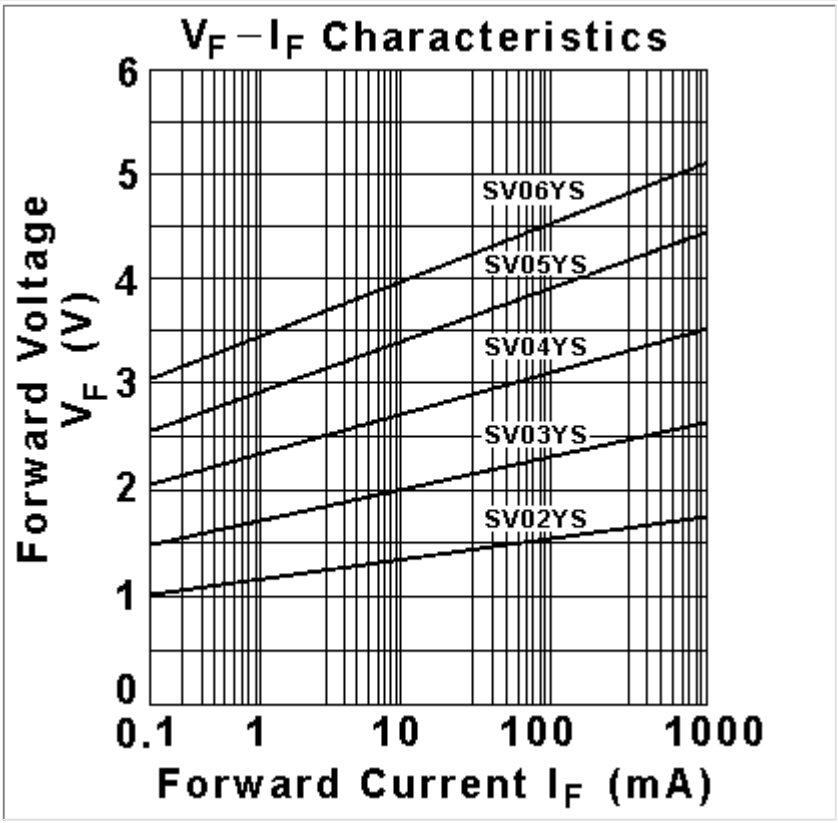
Item	Symbol	SVO2YS	SVO3YS	SVO4YS	SVO5YS	SVO6YS	Unit
DC Forward Current	I_F	200	150	100	80	70	mA
Peak Forward Surge Current	I_{FSM}	30	16	12	10	8	A
		(50Hz half sine wave)					
Junction Temperature	T_j	-40 ~ +130					°C
Storage Temperature	T_{stg}	-40 ~ +130					°C
Internal Junction							

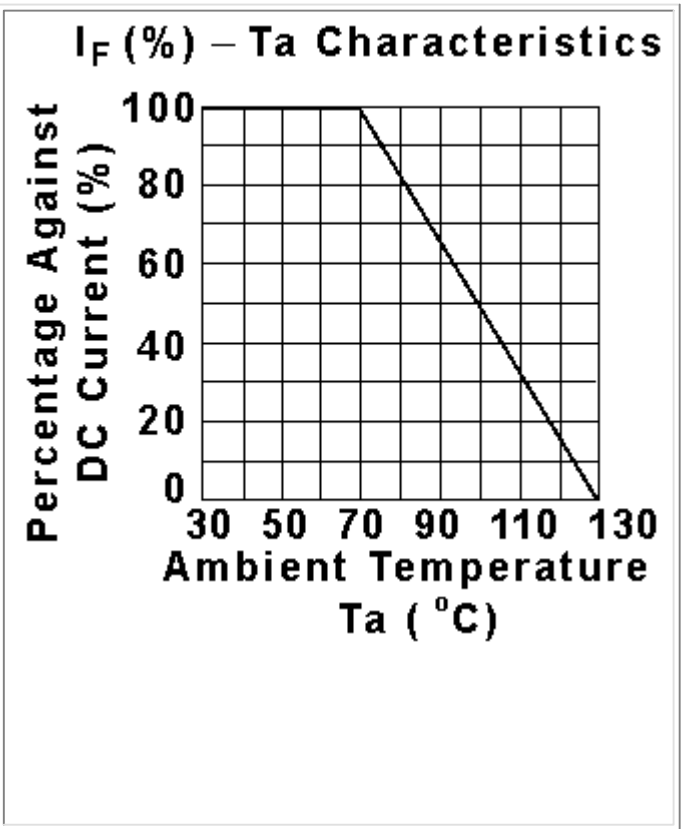
Electrical Characteristics Both Directions, Ta = 25°C

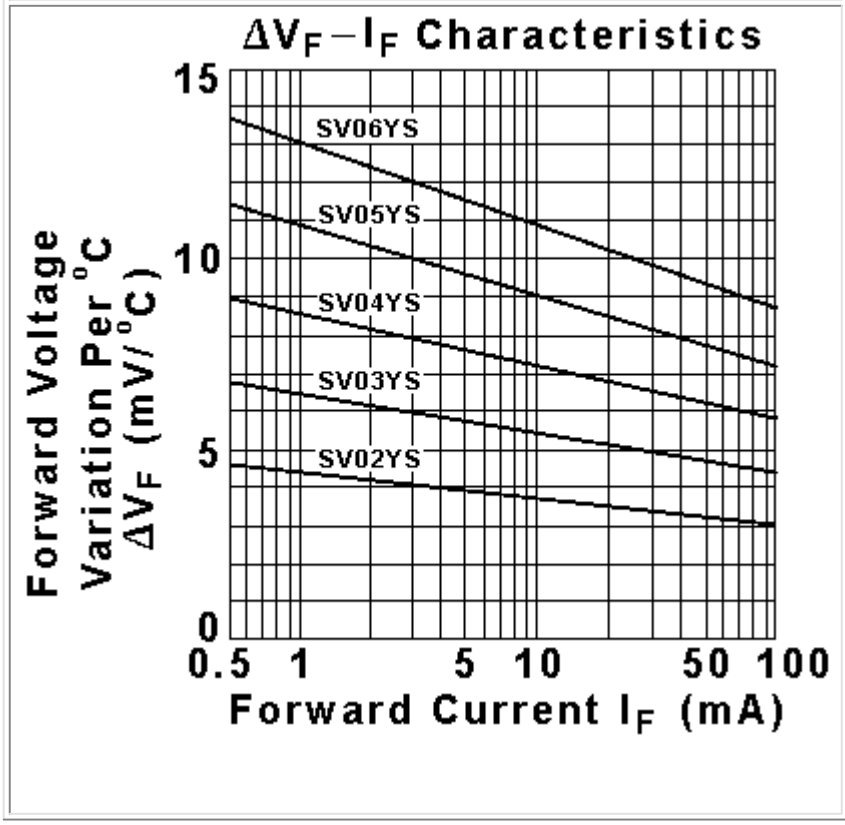
Item	Symbol	Condition	SVO2YS	SVO3YS	SVO4YS	SVO5YS	SVO6YS	Unit
Forward Voltage	V_F	I_F = 1mA	1.2 ± 0.20	1.80 ± 0.20	2.35 ± 0.25	3.00 ± 0.3	3.5 ± 0.35	V
		I_F = 70mA	1.5 ± 0.25	2.30 ± 0.25	3.00 ± 0.30	3.80 ± 0.4	4.5 ± 0.45	
Reverse Current	I_R	V_R = 100V	10					µA

World Products Inc. 19654 8th St. East, Sonoma, CA, USA, 95476 . . Phone: (707) 996-5201 . . Fax: (707) 996-3380

SVO Unsymmetrical Type - (continued)

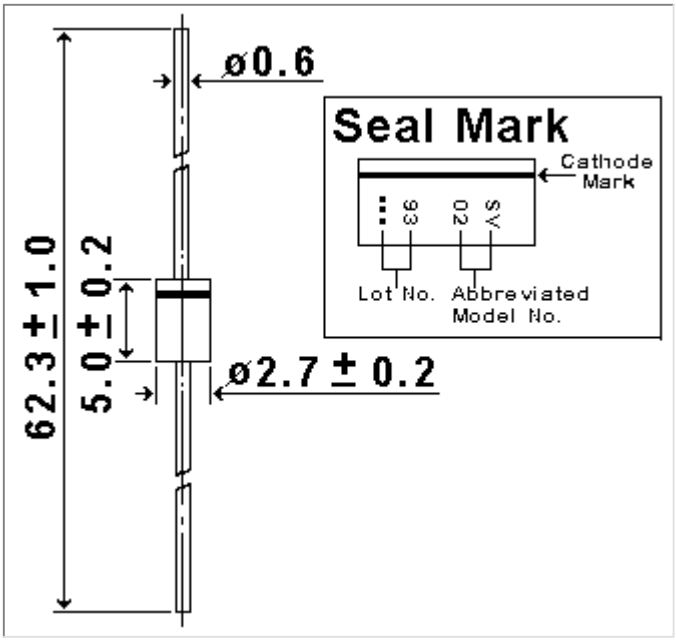






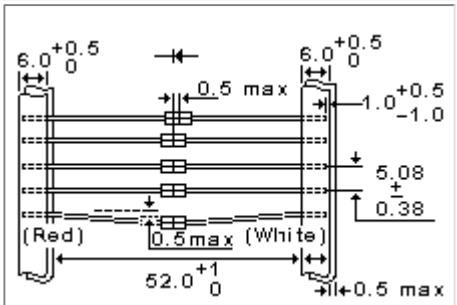
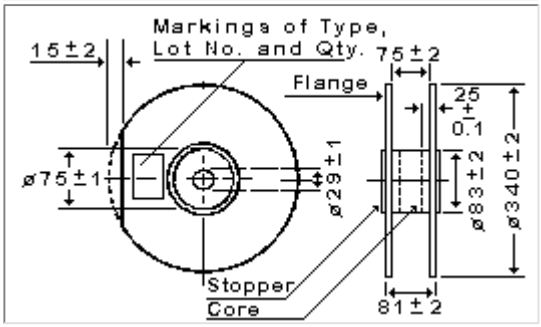
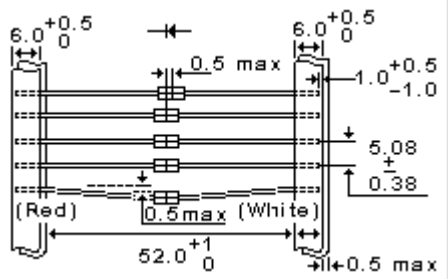
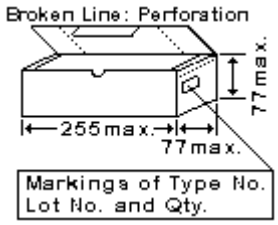
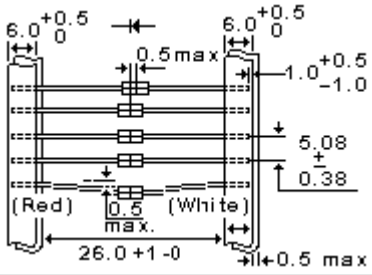
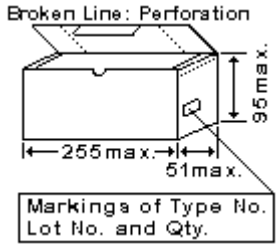
Outline Drawing Unit: mm

Resin Molded Type
Nonflammability: UL94V-O or equivalent
Weight: Approx. 0.3g



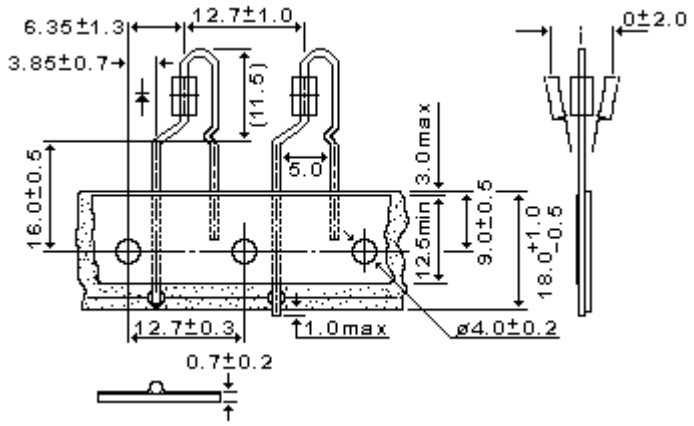
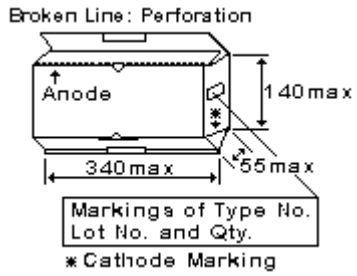
World Products Inc. 19654 8th St. East, Sonoma, CA, USA, 95476 . . Phone: (707) 996-5201 . . Fax: (707) 996-3380

Silicon Varistors - Tape and Reel Specifications

Designation	Dimension (mm)	Packaging Dimension and Marking	Quantity
V Suffix [V] is added to Type No.	**Axial Taping** 	**Reel** 	For 2.7ø body: 5,000 pcs per one reel. For 4.0ø body: 3,000 pcs per one reel.
V1 Suffix [V1] is added to Type No.	**Axial Taping** 	**Ammunition Pack** 	For 2.7ø body: 2,000 pcs per one box. For 4.0ø body: 1,000 pcs per one box.
V0 Suffix [V0] is added to Type No.	**Axial Taping** 	**Ammunition Pack** 	For 2.7ø and 2.4ø body: 2,000 pcs per one box.

World Products Inc. 19654 8th St. East, Sonoma, CA, USA, 95476 . . Phone: (707) 996-5201 . . Fax: (707) 996-3380

Silicon Varistors - Tape and Reel Specifications - (Continued)

Designation	Dimension (mm)	Packaging Dimension and Marking
W Suffix [W] is added to Type No.	**Radial Taping**	**Ammunition Pack**
		
Quantity : For 2.7ø body and 0.6ø lead: 4,000 pcs per one box.		