Metal Oxide Varistor

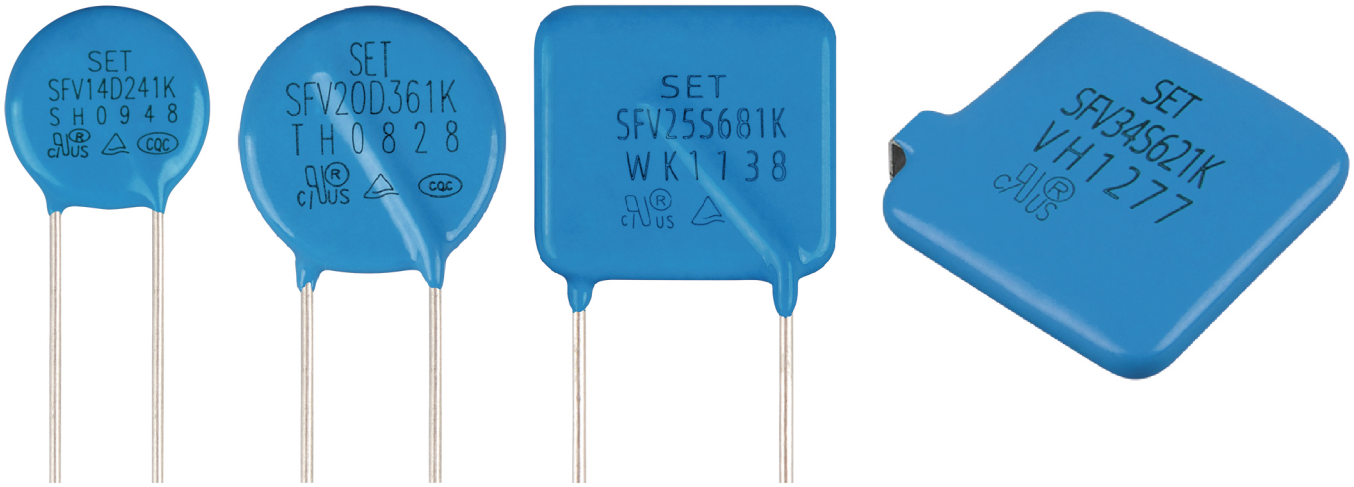
High Surge Type

MOV

- High surge tolerance
- High energy quantity
- Customized dimensions are available
- RoHS & REACH Compliant

- RoHS & REACH Compliant

Please refer to the datasheet of each series.



https://setsafe.com/Product/Over-Voltage-Protection/Metal-Oxide-Varistor-and-MOV-Disk-High-Surge-Type.html

2024

SET safe | SET fuse

Providing a Total Solution for High Standard Safety Circuit Protection

Metal Oxide Varistor（MOV）

Metl Oxide Varistor (MOV) is a nonlinear resistance component with zinc oxide (ZnO) as its main constituent. The resistance of an MOV is sensitive to changes in the lied voltage. Below the threshold voltage, the MOV exhibits high resistance, allowing only a negligibly small leakage current to flow. Once the threshold voltage threshold voltage is exceeded, the resistance of the MOV drops sharply, enablingthe the conduction of a large current. This characteristic makes the MOV suitable for detecting and suppressing surge voltage and overvoltage, thereby protect the circuit from damage caused by excessive voltage.

The Metal Oxide Varistor (MOV) finds wide application in various fields such as photovol taics, communication, lightning protection, power supply, and power strips. It serves to suppress transient overvoltage and absorb surge energy within the circuit.

SETsafe | SETfuse offers Metal Oxide Varistors (MOV) with maximum peak current ratings ranging from 8 kA to 50 kA, and maximum continuous voltage ratings from 130VAC to 750 VAC. Safety certification Includes UL, cUL, TUV, and CQC, and comply with RoHS and REACH requirements.

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Catalogue

1 Overview of Features and Models 1

2 Glossary 2

3 Attention 3

4 Series 4

Description、Features、Applications、Schematics、Product Structure、Dimensions、Part Numbering System、Marking、Specification、Performance Curve、Packaging Information.

4.1 SFV14D H Series 4

4.2 SFV20D H Series 10

4.3 SFV25S H Series 16

4.4 SFV34S H Series 22

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Metal Oxide Varistor-High Surge Type (MOV) Feature & Model List Overview

Nominal Operating Voltage U_n (V) AC	Nominal Operating Voltage U_n (V) DC	Page 5	Page 5	Page 14	Page 14	Maximum Continuous Operating Voltage U_n (V) AC	Maximum Continuous Operating Voltage U_n (V) DC
480V	500V	○	○	SFV25S122K	SFV34S122K	750	990
		○	○	SFV25S112K	SFV34S112K	680	895
		○	○	SFV25S102K	SFV34S102K	625	825
415V		○	○	SFV25S911K	SFV34S911K	550	745
380V		○	○	SFV25S821K	SFV34S821K	510	670
		○	○	SFV25S751K	SFV34S751K	460	615
100V - 240V		SFV14D681K	SFV20D681K	SFV25S681K	SFV34S681K	420	560
		SFV14D621K	SFV20D621K	SFV25S621K	SFV34S621K	385	505
		SFV14D561K	SFV20D561K	SFV25S561K	SFV34S561K	350	460
		SFV14D511K	SFV20D511K	SFV25S511K	SFV34S511K	320	415
100V - 220V		SFV14D471K	SFV20D471K	SFV25S471K	SFV34S471K	300	385
		SFV14D431K	SFV20D431K	SFV25S431K	SFV34S431K	275	350
100V - 120V	250V	SFV14D391K	SFV20D391K	SFV25S391K	SFV34S391K	250	320
		SFV14D361K	SFV20D361K	SFV25S361K	SFV34S361K	230	300
		SFV14D331K	SFV20D331K	SFV25S331K	SFV34S331K	210	275
		SFV14D301K	SFV20D301K	SFV25S301K	SFV34S301K	190	250
100V	125V	SFV14D271K	SFV20D271K	SFV25S271K	SFV34S271K	175	225
		SFV14D241K	SFV20D241K	SFV25S241K	SFV34S241K	150	200
		SFV14D221K	SFV20D221K	○	○	140	180
		SFV14D201K	SFV20D201K	○	○	130	170
		○	○	○	○	115	150
	48V	○	○	○	○	95	125
		○	○	○	○	75	100
		○	○	○	○	60	85
		○	○	○	○	50	65
	24V	○	○	○	○	40	56
		○	○	○	○	35	45
		○	○	○	○	30	38
	12V	○	○	○	○	25	31
		○	○	○	○	20	26
		○	○	○	○	17	22
		○	○	○	○	14	18
		8	13	27.5	50		

Maximum Peak Current (8/20 μs) (kA)

Page

Model

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Glossary

Item	Description
V_N	**Nominal Varistor Voltage** Voltage, at specified D.C. current used as a reference point in the component characteristics. — (GB 18802.331) — (IEC 61051-1)
I_L	**Leakage Current** Measuring at 75% of varistor voltage. — (GB/T 10193) — (IEC 61051-1)
UCT	**Upper Category Temp.** Max. ambient temp. for which a varistor has been designed to operate continuously. — (GB/T 10193) — (IEC 61051-1)
LCT	**Lower Category Temp.** Minimum ambient temp. at which a varistor has been designed to operate continuously. — (GB/T 10193) — (IEC 61051-1)
Max. Peak Current	**Max. Peak Current** Max. current per pulse, which may be passed by a varistor at an ambient temp. of 25 °C, for a given number of pulses. — (GB/T 10193) — (IEC 61051-1)
V_C	**Clamping Voltage** Peak voltage developed across the varistor terminations under standard atmospheric conditions, when passing an 8/20 μs class current pulse. — (GB 18802.331) — (IEC 61051-1)
Voltage Proof	**Voltage Proof** Max. peak voltage, which may be applied under continuous operating conditions between the varistor terminations and any conducting mounting surface (Applicable only to insulated varistors). — (GB/T 10193) — (IEC 61051-1)
C_V	**Capacitance** Capacitance across the MOV measured at a specified frequency and voltage. — (GB 18802.331) — (IEC 61051-1)
V_{ac}	**Max. Continuous a.c. Voltage** Max. a.c. r.m.s. voltage of a substantially sinusoidal waveform (less than 5% total harmonic distortion) which can be applied to the component under continuous operating conditions at 25 °C. — (GB/T 10193) — (IEC 61051-1)
V_{dc}	**Max. Continuous d.c. Voltage** Max. d.c. voltage (with less than 5% ripple) which can be applied to the component under continuous operating conditions at an ambient temp. of 25 °C. — (GB/T 10193) — (IEC 61051-1)
I_{max}	**Max. Discharge Current** Crest value of a current through the SPD having an 8/20 μs waveshape and magnitude according to the manufacturers specification. I_{max} is equal to or greater than I_n. — (GB 18802.1) — (IEC 61643-11)

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ATTENTION

Usage

1. Varistor must operated in the specified ambient temp.
2. Do not clean the varistor with strong polar solvent such as ketone, esters, benzene and halogenated hydrocarbon.
3. Please do not apply severe vibration, shock or pressure to MOV.
4. Please fix lead wires when bending or cutting. The distance between the bending point and the sealing of MOV shall be greater than 2 mm.

Replacement

If varistor is visually damaged,please replace it.

Storage

1. Storage Temp. Range: (-40 to +125) °C.
2. Relative Humidity : ≤75% RH.
3. Altitude: <2000 m.
4. Do not store the MOV at the high temp., high humidity or corrosive gas environment, to avoid influencing the solder-ability of the lead wires, the product shall be used up within 1 year after receiving the goods.

Environmental Conditions

1. Varistor should neither be exposed to the open air, nor direct sunshine.
2. Varistor should avoid rain, water vapor or other condition of high temp. and high humidity.
3. Varistor should avoid sand dust, salt spray, or other harmful gases.

Max. Typical Capacitance of Varistor

The typical capacitance of varistor is listed in the specifications. Designers may refer to it when designing MOV in high frequency circuit.

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Description

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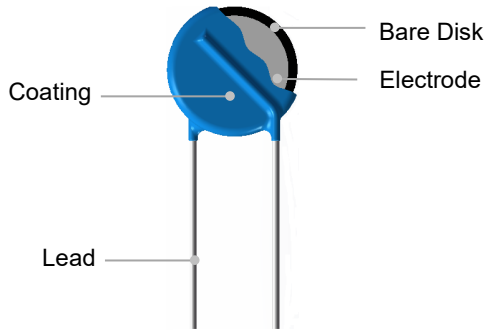
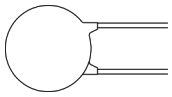
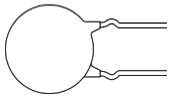
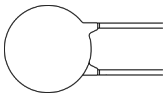
Product Structure



Lead Types

Lead Types		Codes
Straight Lead		A
Outward Crimp Lead		C
Inline Crimp Lead		I
Little Straight Lead		D

Agency Information

Agency	Standards	No.
	UL 1449 5th Edition	E322662
	CSA C22.2 NO.269.5-17	E322662
	EN IEC 61051-1:2018 EN IEC 61051-2:2021 IEC 61051-2-2:1991 Annex G.8.1 of IEC 62368-1:2018	J 50234703
	GB/T 10193-1997 GB/T 10194-1997 GB 4943.1-2022 IEC 61051-2-1991+Amd1:2009	CQC12001084354

Applications

- Power Supplies
- Home Electrical Appliances
- Industrial Devices
- Surge Protectors
- Telecom Devices

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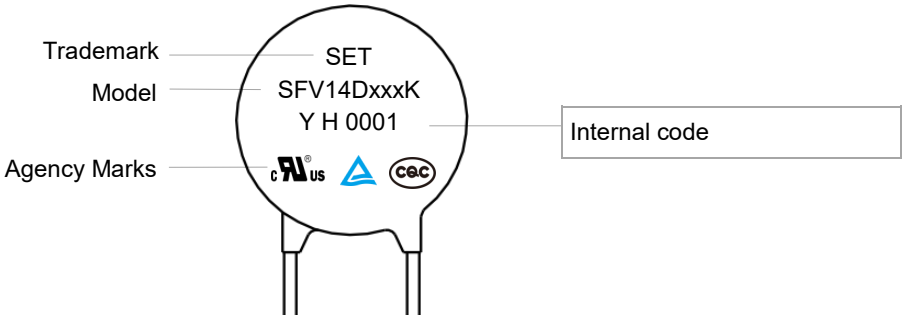
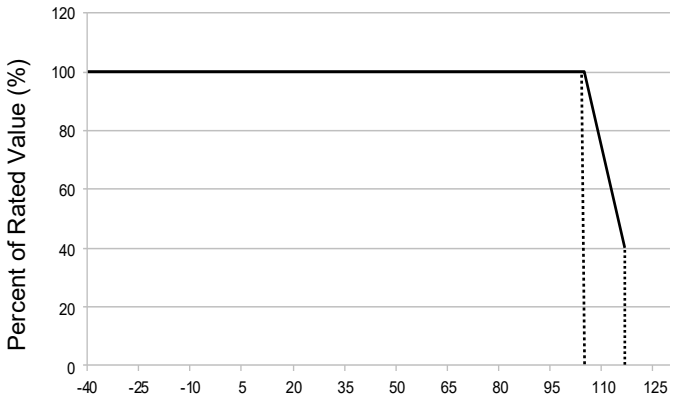
Marking



Temp. Derating Curve



For Normal Temp. Series

Note:
When ambient Temp. exceeds 105 °C, the peak surge current and energy rating should be reduced as shown in left curve.

General Technical Data

Item	Value	Unit
Operating Temperature	-40 to +105	°C
Storage Temperature	-40 to +125	°C
Voltage Proof	≥2500	V_{ac}
Insulation Resistance	≥100	MΩ

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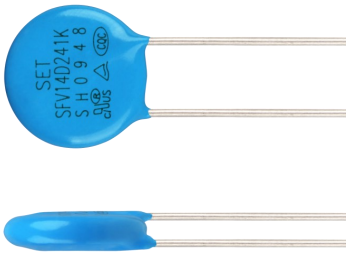
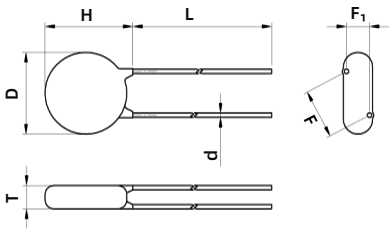
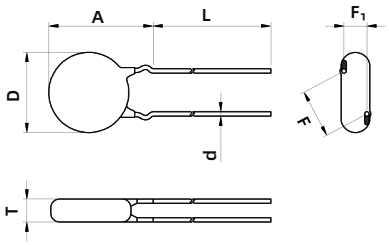
Dimensions (mm)

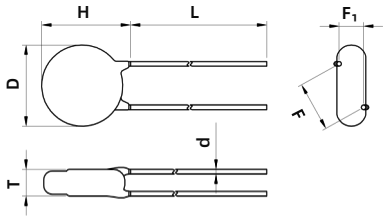




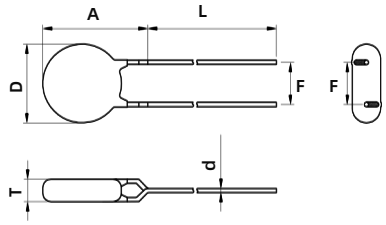
Straight Lead (A)



Outward Crimp (C)



Little Straight Lead (I)



Inline Crimp (D)

Model	L (Min.)	H (Max.)	T (Max.)	D (Max.)	d	F	F_1	A (Max.)
SFV14D201K	20	18.5	4.6	16.5	0.80±0.05	7.5±0.5	1.1 ~ 2.7	21.5
SFV14D221K	20	18.5	4.7	16.5	0.80±0.05	7.5±0.5	1.2 ~ 2.8	21.5
SFV14D241K	20	18.5	4.9	16.5	0.80±0.05	7.5±0.5	1.3 ~ 2.9	21.5
SFV14D271K	20	18.5	5.0	16.5	0.80±0.05	7.5±0.5	1.4 ~ 3.1	21.5
SFV14D301K	20	18.5	5.2	16.5	0.80±0.05	7.5±0.5	1.5 ~ 3.2	21.5
SFV14D331K	20	18.5	5.4	16.5	0.80±0.05	7.5±0.5	1.6 ~ 3.3	21.5
SFV14D361K	20	18.5	5.6	16.5	0.80±0.05	7.5±0.5	1.7 ~ 3.5	21.5
SFV14D391K	20	18.5	5.7	16.5	0.80±0.05	7.5±0.5	1.8 ~ 3.6	21.5
SFV14D431K	20	18.5	6.0	16.5	0.80±0.05	7.5±0.5	1.8 ~ 3.8	21.5
SFV14D471K	20	18.5	6.2	16.5	0.80±0.05	7.5±0.5	2.0 ~ 4.0	21.5
SFV14D511K	20	18.5	6.4	16.5	0.80±0.05	7.5±0.5	2.2 ~ 4.2	21.5
SFV14D561K	20	18.5	6.7	16.5	0.80±0.05	7.5±0.5	2.4 ~ 4.4	21.5
SFV14D621K	20	18.5	7.1	16.5	0.80±0.05	7.5±0.5	2.7 ~ 4.7	21.5
SFV14D681K	20	18.5	7.4	16.5	0.80±0.05	7.5±0.5	3.0 ~ 5.0	21.5

Note:
The above data is for reference only.

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Part Numbering System

SFV 14 D 471 - K P H A BUL - 001

Other Options

***Packaging & Lead Length**
BUL: Bulk + Standard Lead Length (Normal L28)
C35: Bulk + Cut to 3.5 mm
(Range:2.5 mm to 6 mm)
L30: Bulk + Special Lead Length 30 mm
(28 mm to 32 mm)
(0/1)AB: Taping + Box (Hole Pitch 12.7 mm)
(0/1)EB: Taping + Box (Hole Pitch 15.0 mm)
(0/1)AR: Taping + Reel (Hole Pitch 12.7 mm)
(0/1)ER: Taping + Reel (Hole Pitch 15.0 mm)
Note:0/1 Means Product Position
0: In Middle of Two Holes; 1: Across the Hole

Lead Types
A: Straight Lead
C: Outward Crimp Lead
D: Inline Crimp Lead
I: Little Straight Lead

Surge Level
H: High Energy Type

Operating Temp.
P: Epoxy Coating 105 °C

Voltage Tolerance
K: ±10%
J: ±5%
S: Special Tolerance

Nominal Varistor Voltage
220: 22×10^{0} = 22 V
471: 47×10^{1} = 470 V
122: 12×10^{2} = 1200 V

Disk Shape
D: Round

Bare Disk Dimension
14: 14 mm

Product Category
SETfuse Varistor

Reminder:
Part numbering system in the datasheet is only for selecting correct parameter and product features. Before placing order, please contact us for specifications and use the part number and product code in the specifications to place order to ensure the part is correct. Product code is the unique indentification.

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Specification

Model	Surge Level	Max. Continuous Operating Voltage		Varistor Voltage @1 mA DC		Clamping Voltage (Max.)		Max. Peak Current (1 time, 8/20 μs)	Max. Energy (8/20 μs)	Typical Capacitance (For reference only) @1 kHz	Agency Information			
		VAC	VDC	Min.	Max.	V_C	I_P	H		(pF)				
		(V)	(V)	(V)	(V)	(V)	(A)	(kA)	(J)		UL	cUL	TUV	CQC
SFV14D201K	H	130	170	180	220	340	50	8	150	1000	●	●	●	●
SFV14D221K	H	140	180	198	242	360	50	8	160	900	●	●	●	●
SFV14D241K	H	150	200	216	264	395	50	8	180	830	●	●	●	●
SFV14D271K	H	175	225	243	297	455	50	8	200	740	●	●	●	●
SFV14D301K	H	190	250	270	330	500	50	8	220	670	●	●	●	●
SFV14D331K	H	210	275	297	363	550	50	8	245	610	●	●	●	●
SFV14D361K	H	230	300	324	396	595	50	8	260	560	●	●	●	●
SFV14D391K	H	250	320	351	429	650	50	8	290	510	●	●	●	●
SFV14D431K	H	275	350	387	473	710	50	8	320	460	●	●	●	●
SFV14D471K	H	300	385	423	517	775	50	8	350	430	●	●	●	●
SFV14D511K	H	320	415	459	561	845	50	8	380	390	●	●	●	●
SFV14D561K	H	350	460	504	616	925	50	8	400	360	●	●	●	●
SFV14D621K	H	385	505	558	682	1025	50	8	400	320	●	●	●	●
SFV14D681K	H	420	560	612	748	1120	50	8	400	290	●	●	●	●

●: Approved ○: Unauthorized ● RoHS & REACH Compliant

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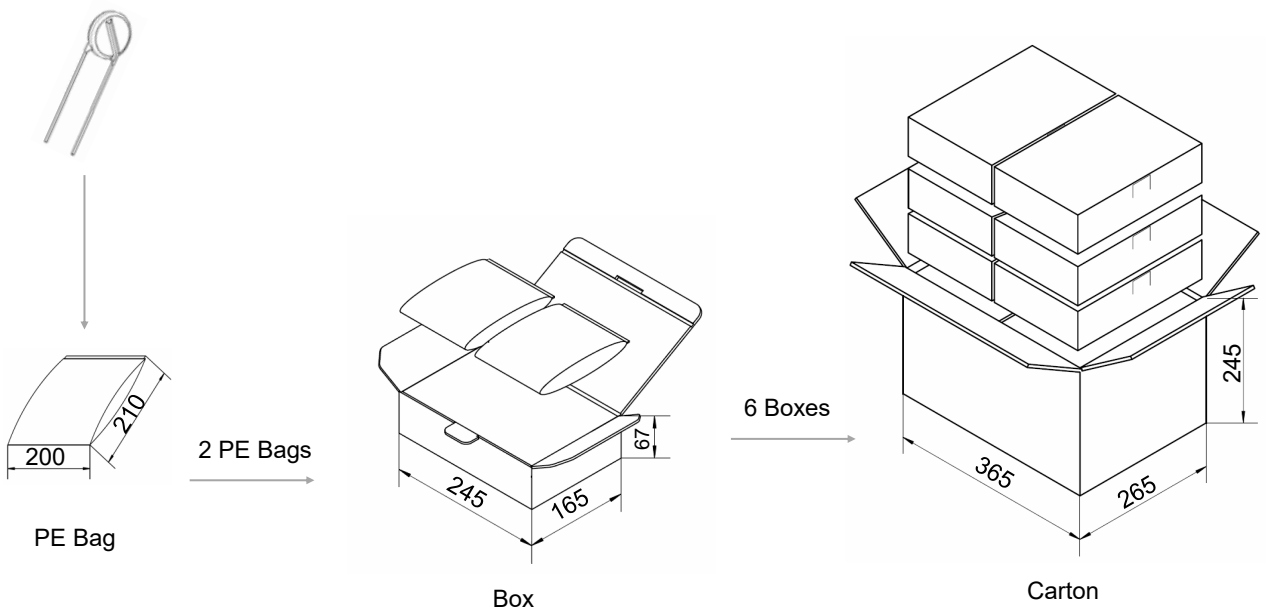
Packaging Information

- Bulk Packaging (Code: BUL)
- Bulk Packaging Quantity & Weight.

Series	Nominal Varistor Voltage	PE Bag	Box	Carton	G. W / Carton (365 × 265 × 245)
SFV14D Series	(V)	(PCS)	(PCS)	(PCS)	(kg)±10%
	201 ~ 361	500	1000	6000	10 ~ 15
	391 ~ 621	400	800	4800	13 ~ 18
	681 ~ 122	250	500	3000	12 ~ 20

Note:
Other lead length packaging information, please contact SETsafe | SETfuse.

All Dimensions in mm



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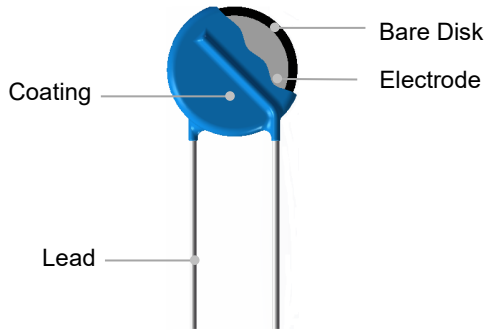
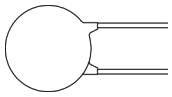
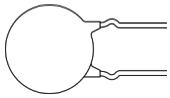
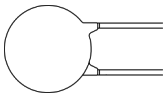
Product Structure



Lead Types

Lead Types		Codes
Straight Lead		A
Outward Crimp Lead		C
Inline Crimp Lead		I
Little Straight Lead		D

Agency Information

Agency	Standards	No.
	UL 1449 5th Edition	E322662
	CSA C22.2 NO.269.5-17	E322662
	EN IEC 61051-1:2018 EN IEC 61051-2:2021 IEC 61051-2-2:1991 Annex G.8.1 of IEC 62368-1:2018	J 50239739
	GB/T 10193-1997 GB/T 10194-1997 GB 4943.1-2022 IEC 61051-2-1991+Amd1:2009	CQC12001084355

Applications

- Power Supplies
- Home Electrical Appliances
- Industrial Devices
- Surge Protectors
- Telecom Devices

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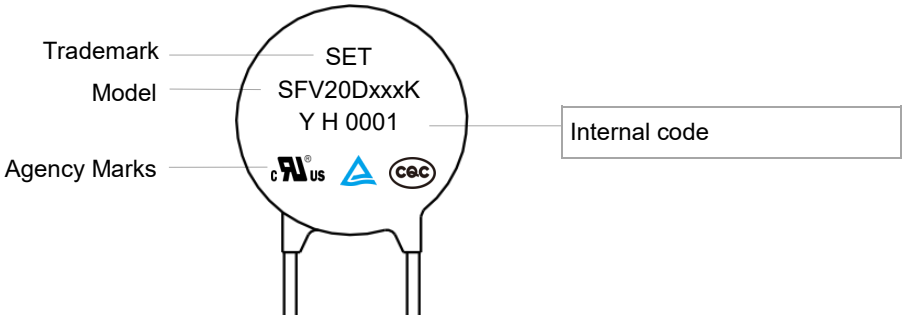
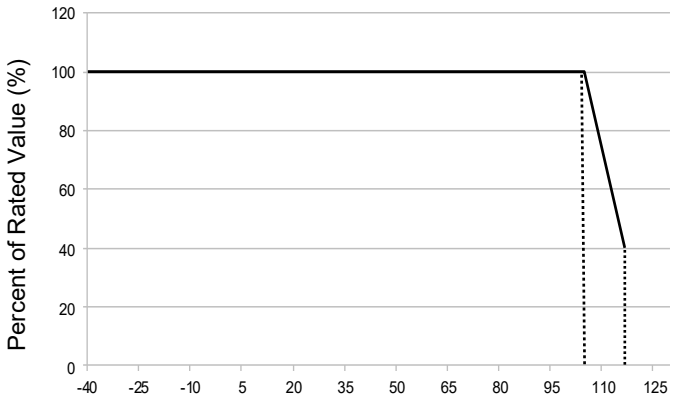
Marking



Temp. Derating Curve



For Normal Temp. Series

Note:
When ambient Temp. exceeds 105 °C, the peak surge current and energy rating should be reduced as shown in left curve.

General Technical Data

Item	Value	Unit
Operating Temperature	-40 to +105	°C
Storage Temperature	-40 to +125	°C
Voltage Proof	≥2500	V_{ac}
Insulation Resistance	≥100	MΩ

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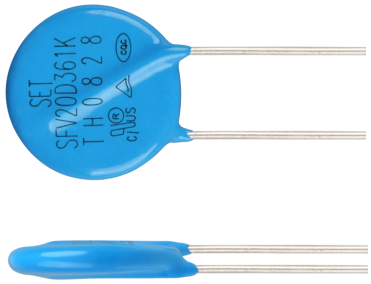
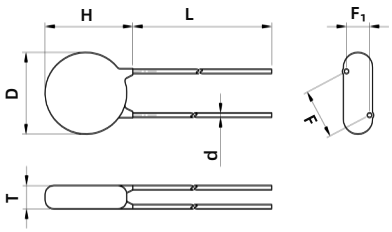
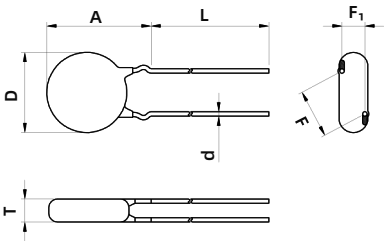
Dimensions (mm)

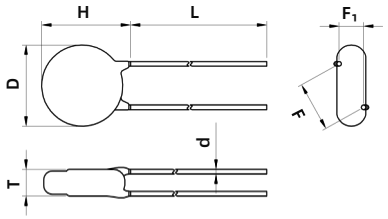




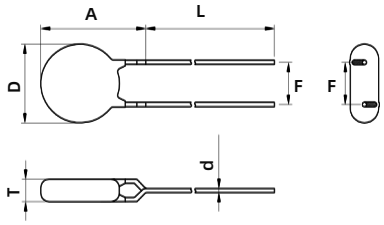
Straight Lead (A)



Outward Crimp (C)



Little Straight Lead (I)



Inline Crimp (D)

Model	L (Min.)	H (Max.)	T (Max.)	D (Max.)	d	F	F_1	A (Max.)
SFV20D201K	20	25.5	4.8	23	1.00±0.05	10.0±0.5	1.0 ~ 3.0	27.5
SFV20D221K	20	25.5	4.9	23	1.00±0.05	10.0±0.5	1.0 ~ 3.0	27.5
SFV20D241K	20	25.5	5.0	23	1.00±0.05	10.0±0.5	1.1 ~ 3.1	27.5
SFV20D271K	20	25.5	5.2	23	1.00±0.05	10.0±0.5	1.3 ~ 3.3	27.5
SFV20D301K	20	25.5	5.3	23	1.00±0.05	10.0±0.5	1.4 ~ 3.4	27.5
SFV20D331K	20	25.5	5.5	23	1.00±0.05	10.0±0.5	1.6 ~ 3.6	27.5
SFV20D361K	20	25.5	5.6	23	1.00±0.05	10.0±0.5	1.7 ~ 3.7	27.5
SFV20D391K	20	25.5	5.8	23	1.00±0.05	10.0±0.5	1.9 ~ 3.9	27.5
SFV20D431K	20	25.5	6.0	23	1.00±0.05	10.0±0.5	2.0 ~ 4.0	27.5
SFV20D471K	20	25.5	6.2	23	1.00±0.05	10.0±0.5	2.2 ~ 4.2	27.5
SFV20D511K	20	25.5	6.4	23	1.00±0.05	10.0±0.5	2.4 ~ 4.4	27.5
SFV20D561K	20	25.5	6.6	23	1.00±0.05	10.0±0.5	2.7 ~ 4.7	27.5
SFV20D621K	20	25.5	6.9	23	1.00±0.05	10.0±0.5	3.0 ~ 5.0	27.5
SFV20D681K	20	25.5	7.2	23	1.00±0.05	10.0±0.5	3.2 ~ 5.2	27.5

Note:
The above data is for reference only.

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Part Numbering System

SFV 20 D 471 - K P H A BUL - 001

Other Options

***Packaging & Lead Length**
BUL: Bulk + Standard Lead Length (Normal L28)
C35: Bulk + Cut to 3.5 mm
(Range:2.5 mm to 6 mm)
L30: Bulk + Special Lead Length 30 mm
(28 mm to 32 mm)
(0/1)AB: Taping + Box (Hole Pitch 12.7 mm)
(0/1)EB: Taping + Box (Hole Pitch 15.0 mm)
(0/1)AR: Taping + Reel (Hole Pitch 12.7 mm)
(0/1)ER: Taping + Reel (Hole Pitch 15.0 mm)
Note:0/1 Means Product Position
0: In Middle of Two Holes; 1: Across the Hole

Lead Types
A: Straight Lead
C: Outward Crimp Lead
D: Inline Crimp Lead
I: Little Straight Lead

Surge Level
H: High Energy Type

Operating Temp.
P: Epoxy Coating 105 °C

Voltage Tolerance
K: ±10%
J: ±5%
S: Special Tolerance

Nominal Varistor Voltage
220: 22×10^{0} = 22 V
471: 47×10^{1} = 470 V
122: 12×10^{2} = 1200 V

Disk Shape
D: Round

Bare Disk Dimension
20: 20 mm

Product Category
SETfuse Varistor

Reminder:
Part numbering system in the datasheet is only for selecting correct parameter and product features. Before placing order, please contact us for specifications and use the part number and product code in the specifications to place order to ensure the part is correct. Product code is the unique indentification.

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Specification

Model	Surge Level	Max. Continuous Operating Voltage		Varistor Voltage @1 mA DC		Clamping Voltage (Max.)		Max. Peak Current (1 time, 8/20 μs)	Max. Energy (8/20 μs)	Typical Capacitance (For reference only) @1 kHz	Agency Information			
		VAC	VDC	Min.	Max.	V_C	I_P	H		(pF)				
		(V)	(V)	(V)	(V)	(V)	(A)	(kA)	(J)		UL	cUL	TUV	CQC
SFV20D201K	H	130	170	180	220	340	100	13	300	2000	●	●	●	●
SFV20D221K	H	140	180	198	242	360	100	13	320	1800	●	●	●	●
SFV20D241K	H	150	200	216	264	395	100	13	340	1650	●	●	●	●
SFV20D271K	H	175	225	243	297	455	100	13	380	1500	●	●	●	●
SFV20D301K	H	190	250	270	330	500	100	13	400	1300	●	●	●	●
SFV20D331K	H	210	275	297	363	550	100	13	440	1200	●	●	●	●
SFV20D361K	H	230	300	324	396	595	100	13	470	1100	●	●	●	●
SFV20D391K	H	250	320	351	429	650	100	13	510	1000	●	●	●	●
SFV20D431K	H	275	350	387	473	710	100	13	550	930	●	●	●	●
SFV20D471K	H	300	385	423	517	775	100	13	600	850	●	●	●	●
SFV20D511K	H	320	415	459	561	845	100	13	650	780	●	●	●	●
SFV20D561K	H	350	460	504	616	925	100	13	700	710	●	●	●	●
SFV20D621K	H	385	505	558	682	1025	100	13	700	650	●	●	●	●
SFV20D681K	H	420	560	612	748	1120	100	13	800	600	●	●	●	●

●: Approved ○: Unauthorized ● RoHS & REACH Compliant

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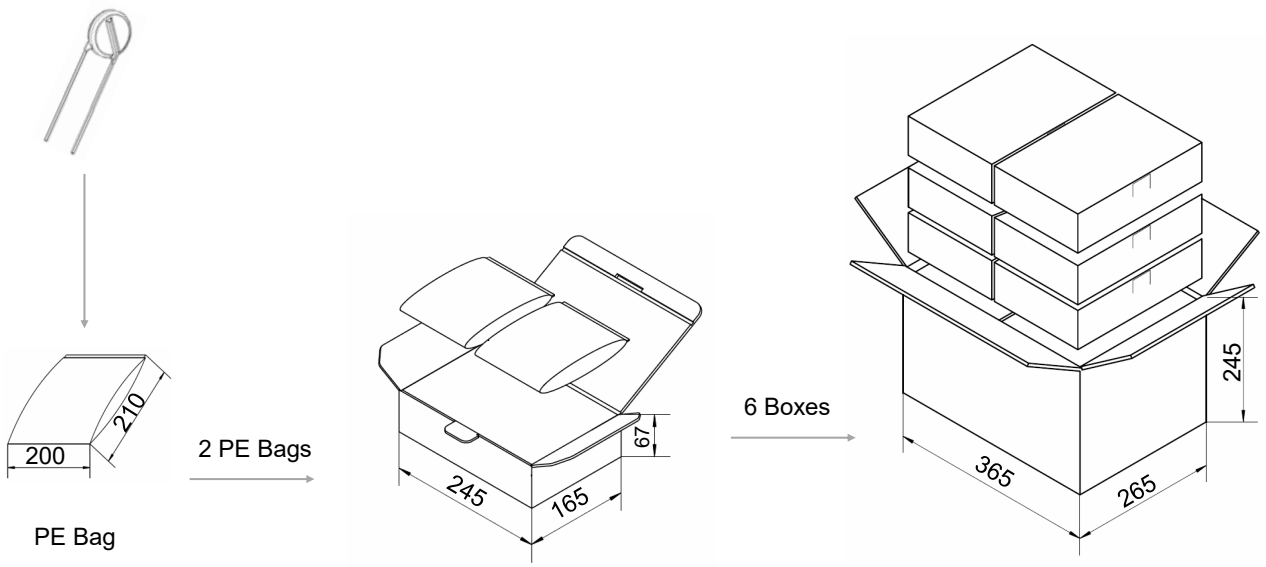
Packaging Information

- Bulk Packaging (Code: BUL)
- Bulk Packaging Quantity & Weight.

Series	Nominal Varistor Voltage	PE Bag	Box	Carton	G. W / Carton (365 × 265 × 245)
	(V)	(PCS)	(PCS)	(PCS)	(kg)±10%
SFV20D Series	201 ~ 471	250	500	3000	11 ~ 16
	511 ~ 681	200	400	2400	14 ~ 18

Note:
Other lead length packaging information, please contact SETsafe | SETfuse.

All Dimensions in mm



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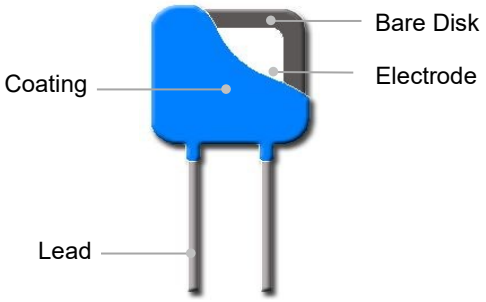
Description

Metl Oxide Varistor (MOV) is a nonlinear resistance component with zinc oxide (ZnO) as its main constituent. The resistance of an MOV is sensitive to changes in the lied voltage. Below the threshold voltage, the MOV exhibits high resistance, allowing only a negligibly small leakage current to flow. Once the threshold voltage is exceeded, the resistance of the MOV drops sharply, enabling the conduction of a large current. This characteristic makes the MOV suitable for detecting and suppressing surge voltage and overvoltage, thereby protect the circuit from damage caused by excessive voltage.

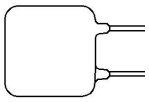
The Metal Oxide Varistor (MOV) finds wide application in various fields such as photovolt aics, communication, lightning protection, power supply, and power strips. It serves to suppress transient overvoltage and absorb surge energy within the circuit.

SETsafe | SETfuse offers Metal Oxide Varistors (MOV) with SFV25S H series maximum peak current ratings ranging from to 27.5 kA, and maximum continuous voltage from 150VAC to 750 VAC. Safety certification Includes UL, cUL, TUV, and CQC, and comply with RoHS and REACH requirements.

Product Structure



Lead Types

Lead Types		Codes
Straight Lead		A

Agency Information

Agency	Standards	No.
	UL 1449 5th Edition	E322662
	CSA C22.2 NO.269.5-17	E322662
TÜVRheinland	EN IEC 61051-1:2018 EN IEC 61051-2:2021 IEC 61051-2-2:1991 Annex G.8.1 of IEC 62368-1:2023	J 50401611

Applications

- Power Supplies
- Home Electrical Appliances
- Industrial Devices
- Surge Protectors
- Telecom Devices

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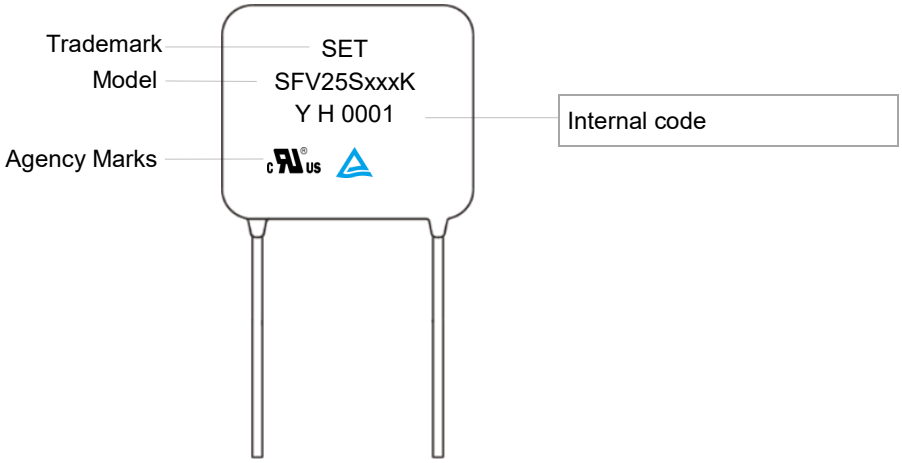
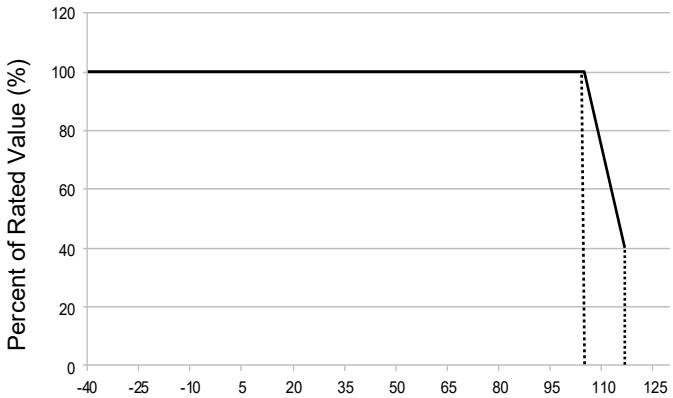
Marking



Temp. Derating Curve



For Normal Temp. Series

Note:
When ambient Temp. exceeds 105 °C, the peak surge current and energy rating should be reduced as shown in left curve.

General Technical Data

Item	Value	Unit
Operating Temperature	-40 to +105	°C
Storage Temperature	-40 to +125	°C
Voltage Proof	≥2500	V_{ac}
Insulation Resistance	≥100	MΩ

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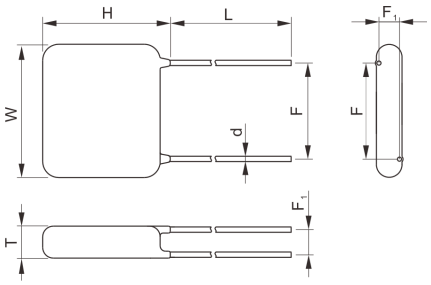
Dimensions (mm)



Straight Lead

Model	L	W (Max.)	H (Max.)	T (Max.)	d	F	F_1
SFV25S241K	16.0±3.0	28	30	7.0	1.20±0.05	18.0±1.0	2.6 ~ 4.6
SFV25S271K	16.0±3.0	28	30	7.2	1.20±0.05	18.0±1.0	2.8 ~ 4.8
SFV25S301K	16.0±3.0	28	30	7.4	1.20±0.05	18.0±1.0	3.0 ~ 5.0
SFV25S331K	16.0±3.0	28	30	7.6	1.20±0.05	18.0±1.0	3.1 ~ 5.1
SFV25S361K	16.0±3.0	28	30	7.8	1.20±0.05	18.0±1.0	3.3 ~ 5.3
SFV25S391K	16.0±3.0	28	30	8.0	1.20±0.05	18.0±1.0	3.5 ~ 5.5
SFV25S431K	16.0±3.0	28	30	8.2	1.20±0.05	18.0±1.0	3.7 ~ 5.7
SFV25S471K	16.0±3.0	28	30	8.5	1.20±0.05	18.0±1.0	4.0 ~ 6.0
SFV25S511K	16.0±3.0	28	30	8.7	1.20±0.05	18.0±1.0	4.2 ~ 6.2
SFV25S561K	16.0±3.0	28	30	9.0	1.20±0.05	18.0±1.0	4.5 ~ 6.5
SFV25S621K	16.0±3.0	28	30	9.4	1.20±0.05	18.0±1.0	4.8 ~ 6.8
SFV25S681K	16.0±3.0	28	30	9.8	1.20±0.05	18.0±1.0	5.2 ~ 7.2
SFV25S751K	16.0±3.0	28	30	10.2	1.20±0.05	18.0±1.0	5.6 ~ 7.6
SFV25S821K	16.0±3.0	28	30	10.7	1.20±0.05	18.0±1.0	6.0 ~ 8.0
SFV25S911K	16.0±3.0	28	30	11.2	1.20±0.05	18.0±1.0	6.6 ~ 8.6
SFV25S102K	16.0±3.0	28	30	11.8	1.20±0.05	18.0±1.0	7.1 ~ 9.1
SFV25S112K	16.0±3.0	28	30	12.4	1.20±0.05	18.0±1.0	7.7 ~ 9.7
SFV25S122K	16.0±3.0	28	30	13.0	1.20±0.05	18.0±1.0	8.3 ~ 10.3

Note:
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Part Numbering System

SFV 25 S 471 - K P H A BUL - 001

Other Options

***Packaging & Lead Length**
BUL: Bulk + Standard Lead Length (Normal L28)
C35: Bulk + Cut to 3.5 mm
(Range:2.5 mm to 6 mm)

Lead Types
A: Straight Lead
E: Straight Strap Lead
L: All Lead Wire A

Surge Level
H: High Energy Type

Operating Temp.
P: Epoxy Coating 105 °C

Voltage Tolerance
K: ±10%
J: ±5%
S: Special Tolerance

Nominal Varistor Voltage
220: 22×10^{0} = 22 V
471: 47×10^{1} = 470 V
122: 12×10^{2} = 1200 V

Disk Shape
S: Square

Bare Disk Dimension
25: 22×25 mm

Product Category
SETfuse Varistor

Reminder:
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Specification

Model	Max. Continuous Operating Voltage		Varistor Voltage @1 mA DC		Clamping Voltage (Max.)		Max. Discharge Current (8/20 μs)		Max. Energy (10/1000 μs)	Typical Capacitance (For reference only) @1 kHz	Agency Information			
	VAC	VDC	Min.	Max.	V_C	I_P	I_n	I_{max}	(J)	(pF)	UL	cUL	TUV	CQC
	(V)	(V)	(V)	(V)	(V)	(A)	(kA)	(kA)						
SFV25S241K	150	200	216	264	395	175	10	25	302	2800	●	●	●	○
SFV25S271K	175	225	243	297	455	175	10	25	340	2450	●	●	●	○
SFV25S301K	190	250	270	330	500	175	10	25	375	2200	●	●	●	○
SFV25S331K	210	275	297	363	550	175	10	25	410	2050	●	●	●	○
SFV25S361K	230	300	324	396	595	175	10	25	465	1850	●	●	●	○
SFV25S391K	250	320	351	429	650	175	10	25	520	1700	●	●	●	○
SFV25S431K	275	350	387	473	710	175	10	25	575	1600	●	●	●	○
SFV25S471K	300	385	423	517	775	175	10	25	630	1450	●	●	●	○
SFV25S511K	320	415	459	561	845	175	10	25	665	1300	●	●	●	○
SFV25S561K	350	460	504	616	925	175	10	25	720	1200	●	●	●	○
SFV25S621K	385	505	558	682	1025	175	10	25	790	1100	●	●	●	○
SFV25S681K	420	560	612	748	1120	175	10	25	790	1000	●	●	●	○
SFV25S751K	460	615	675	825	1240	175	10	25	825	900	●	●	●	○
SFV25S821K	510	670	738	902	1355	175	10	25	840	800	●	●	●	○
SFV25S911K	550	745	819	1001	1500	175	10	25	900	700	●	●	●	○
SFV25S102K	625	825	900	1100	1650	175	10	25	950	660	●	●	●	○
SFV25S112K	680	895	990	1210	1815	175	10	25	1040	615	●	●	●	○
SFV25S122K	750	1000	1080	1320	1980	175	10	25	1170	555	●	●	●	○

●: Approved ○: Unauthorized ● RoHS & REACH Compliant

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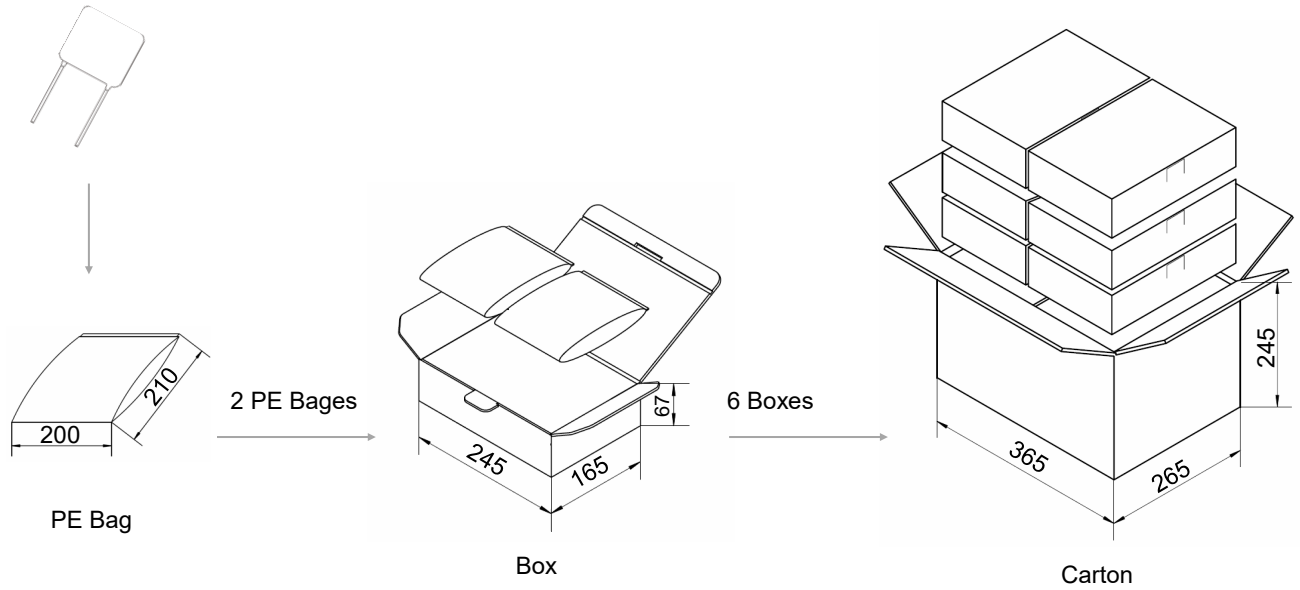
Packaging Information

- Bulk Packaging (Code: BUL)
- Bulk Packaging Quantity & Weight.

Series	Nominal Varistor Voltage	PE Bag	Box	Carton	G. W / Carton (365 × 265 × 245)
	(V)	(PCS)	(PCS)	(PCS)	(kg)±10%
SFV25S Series	241 ~ 821	100	200	1200	15 ~ 26
	911 ~ 122	80	160	960	23 ~ 28

Note:
Other lead length packaging information, please contact SETsafe | SETfuse.

All Dimensions in mm



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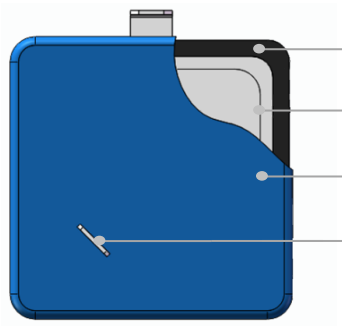
Description

Metl Oxide Varistor (MOV) is a nonlinear resistance component with zinc oxide (ZnO) as its main constituent. The resistance of an MOV is sensitive to changes in the lied voltage. Below the threshold voltage, the MOV exhibits high resistance, allowing only a negligibly small leakage current to flow. Once the threshold voltage is exceeded, the resistance of the MOV drops sharply, enabling the conduction of a large current. This characteristic makes the MOV suitable for detecting and suppressing surge voltage and overvoltage, thereby protect the circuit from damage caused by excessive voltage.

The Metal Oxide Varistor (MOV) finds wide application in various fields such as photovolt aics, communication, lightning protection, power supply, and power strips. It serves to suppress transient overvoltage and absorb surge energy within the circuit.

SETsafe | SETfuse offers Metal Oxide Varistors (MOV) with SFV34S H series maximum peak current ratings ranging from to 50 kA, and maximum continuous voltage from 150VAC to 750 VAC. Safety certification Includes UL, cUL, TUV, and CQC, and comply with RoHS and REACH requirements.

Product Structure



Applications

- Power Supplies
- Home Electrical Appliances
- Industrial Devices
- Surge Protectors
- Telecom Devices

Agency Information

Agency	Standards	No.
	UL 1449 4th Edition	E322662
	CSA C22.2 NO.269.5-17	E322662

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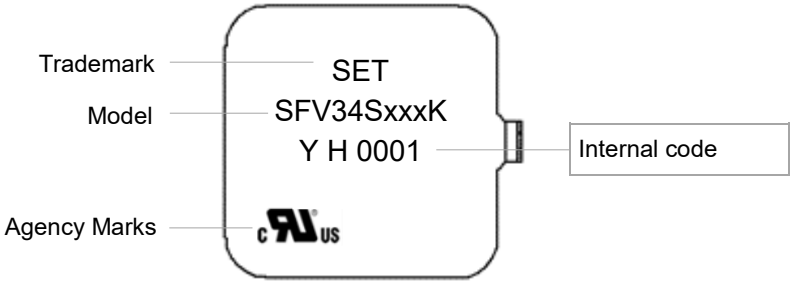
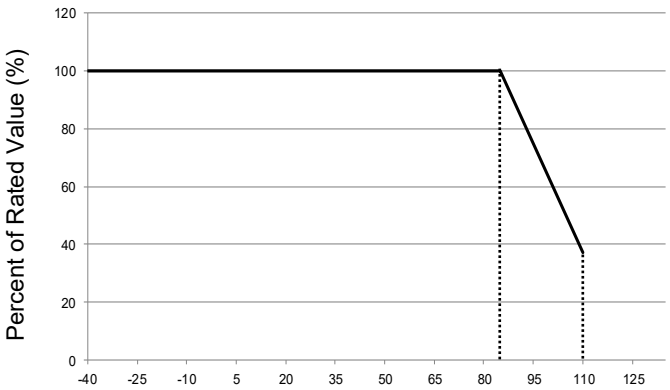
Marking



Temp. Derating Curve



For Normal Temp. Series

Note: When ambient temp. exceeds 85 °C, the peak surge current and energy rating should be reduced as shown in left curve.

General Technical Data

Item	Value	Unit
Operating Temperature	-40 ~ +85	°C
Storage Temperature	-40 to +125	°C
Voltage Proof	≥2500	V_{ac}
Insulation Resistance	≥100	MΩ

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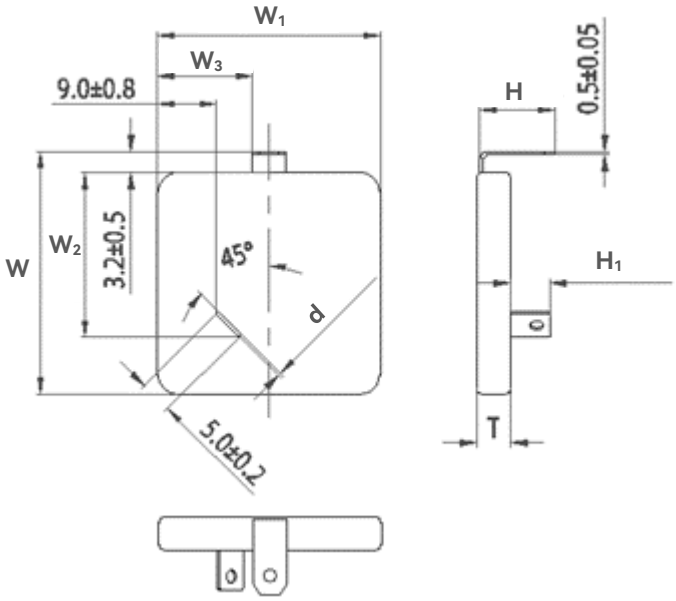
Dimensions (mm)



Model	W	W_1	W_2	W_3	H	H_1	T	d
SFV34S241K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	4.3	0.5±0.05
SFV34S271K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	4.5	0.5±0.05
SFV34S301K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	4.7	0.5±0.05
SFV34S331K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	4.9	0.5±0.05
SFV34S361K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	5.0	0.5±0.05
SFV34S391K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	5.1	0.5±0.05
SFV34S431K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	5.2	0.5±0.05
SFV34S471K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	5.4	0.5±0.05
SFV34S511K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	5.6	0.5±0.05
SFV34S561K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	5.8	0.5±0.05
SFV34S621K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	6.1	0.5±0.05
SFV34S681K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	6.5	0.5±0.05
SFV34S751K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	6.8	0.5±0.05
SFV34S821K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	7.2	0.5±0.05
SFV34S911K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	7.6	0.5±0.05
SFV34S102K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	8.0	0.5±0.05
SFV34S112K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	8.5	0.5±0.05
SFV34S122K	37.2±1.0	34.0±1.0	25.2±0.5	14.5±0.5	11.5±0.5	6.0±0.5	9.0	0.5±0.05

Note:
The above data is for reference only.

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Part Numbering System

SFV 34 S 471 - K T ××××× T - B

- **Bare**
- Performance Code
  Default : 8/20 μs
  T: 10/350 μs
- **Structure Code**
- **T stands for High Temperature Series**
- **Voltage Tolerance**
  K : ±10%
- **Nominal Varistor Voltage**
  220: 22×10^{0} = 22V
  471: 47×10^{1} = 470 V
  122: 12×10^{2} = 1200 V
- **Disk Shape**
  S: Square
- **Bare Disk Dimension**
  S 34: 34×34 mm
- **Product Category**
  Setfuse Varistor

Reminder:
Part numbering system in the datasheet is only for selecting correct parameter and product features. Before placing order, please contact us for specifications and use the part number and product code in the specifications to place order to ensure the part is correct. Product code is the unique indentification.

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Specification

Model	Max. Continuous Operating Voltage		Varistor Voltage @1 mA DC		Clamping Voltage (Max.)		Max. Discharge Current (8/20 μs)		Max. Energy (10/1000 μs)	Typical Capacitance (For reference only) @1 kHz	Agency Information			
	VAC	VDC	Min.	Max.	V_C	I_P	I_n	I_{max}	(J)	(pF)	UL	cUL	TUV	CQC
	(V)	(V)	(V)	(V)	(V)	(A)	(kA)	(kA)						
SFV34S241K	150	200	216	264	395	300	20	50	480	5650	●	●	○	○
SFV34S271K	175	225	243	297	455	300	20	50	540	5100	●	●	○	○
SFV34S301K	190	250	270	330	500	300	20	50	600	4510	●	●	○	○
SFV34S331K	210	275	297	363	550	300	20	50	656	4150	●	●	○	○
SFV34S361K	230	300	324	396	595	300	20	50	745	3750	●	●	○	○
SFV34S391K	250	320	351	429	650	300	20	50	830	3500	●	●	○	○
SFV34S431K	275	350	387	473	710	300	20	50	920	2950	●	●	○	○
SFV34S471K	300	385	423	517	775	300	20	50	1000	2880	●	●	○	○
SFV34S511K	320	415	459	561	845	300	20	50	1060	2650	●	●	○	○
SFV34S561K	350	460	504	616	925	300	20	50	1150	2450	●	●	○	○
SFV34S621K	385	505	558	682	1025	300	20	50	1250	2200	●	●	○	○
SFV34S681K	420	560	612	748	1120	300	20	50	1250	2000	●	●	○	○
SFV34S751K	460	615	675	825	1240	300	20	50	1280	1820	●	●	○	○
SFV34S821K	510	670	738	902	1355	300	20	50	1300	1800	●	●	○	○
SFV34S911K	550	745	819	1001	1500	300	20	50	1475	1500	●	●	○	○
SFV34S102K	625	825	900	1100	1650	300	20	50	1550	1350	●	●	○	○
SFV34S112K	680	895	990	1210	1815	300	20	50	1750	1230	●	●	○	○
SFV34S122K	750	1000	1080	1320	1980	300	20	50	2000	1135	●	●	○	○

●: Approved ○: Unauthorized ● RoHS & REACH Compliant

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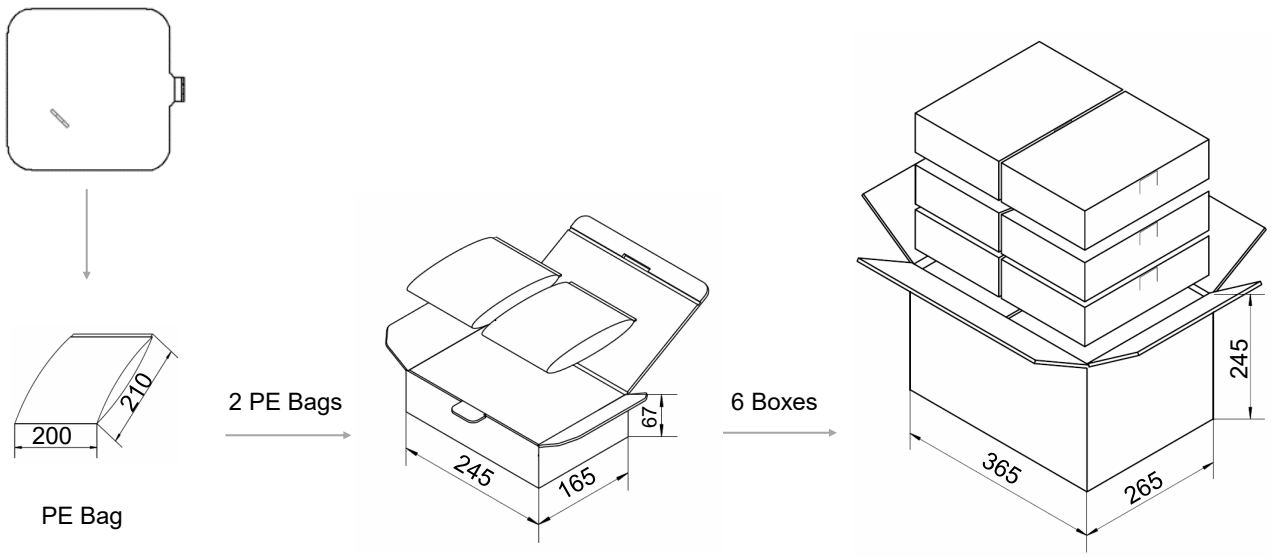
Packaging Information

- Bulk Packaging (Code: BUL)
- Bulk Packaging Quantity & Weight.

Series	Nominal Varistor Voltage	PE Bag	Box	Carton	G. W / Carton (365 × 265 × 245)
SFV34S Series	(V)	(PCS)	(PCS)	(PCS)	(kg)±10%
	241 ~ 301	40	80	480	9 ~ 10
	331 ~ 821	30	60	360	7 ~ 14
	911 ~ 122	20	40	240	10 ~ 13

Note:
Other lead length packaging information, please contact SETsafe | SETfuse.

All Dimensions in mm



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