Construction

- Round varistor element, leaded
- Coating: epoxy resin (D1: phenolic resin), flame-retardant to UL 94 V-0
- Terminals: tinned copper wire

Features

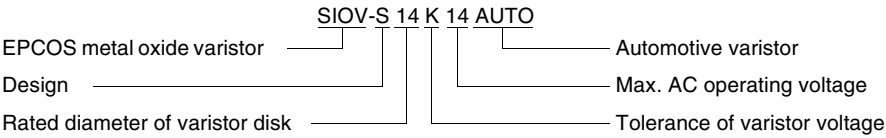
- High energy absorption, particularly in case of load dump
- Jump-start strength
- Stable protection level, minimum leakage current
- High resistance to cyclic temperature stress
- PSpice models
- Types for T_A = 125 °C

Taping

- All types available on tape upon request

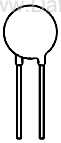
Type designation

Detailed description of coding system on page 39, chapter *"General Technical Information"*



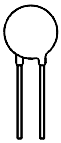
General technical data

Climatic category LCT UCT Damp heat, steady state (93 % r.h., 40 °C)	40/85/56 (D1: 40/125/56) – 40 °C + 85 °C (D1: + 125 °C) 56 days	in accordance with IEC 60068-1 in accordance with IEC 60068-2-3
Operating temperature	– 40 … + 85 °C (D1: … + 125 °C)	in accordance with CECC 42 000
Storage temperature	– 40 … + 125 °C (D1: … + 150 °C)	
Electric strength	≥ 2,5 kV_{RMS} (not D1)	in accordance with CECC 42 000
Insulation resistance	≥ 10 MΩ (not D1)	in accordance with CECC 42 000
Response time	< 25 ns	



Maximum ratings (T_A = 85 °C, T_A = 125 °C for S…D1)

Type (untaped) SIOV-	Ordering code	V_{RMS} V	V_{DC} V	i_{max} 8/20 µs A	W_{max} (2 ms) J	P_{max} W	W_{LD} (10x) J
12-V supply systems							
S07K14AUTOS2D1	B72207S1140K201	14	16	250	0,9	0,02	12
S10K14AUTO	B72210S1140K102	14	16	500	2,0	0,05	25
S10K14AUTOS5D1	B72210S1140K501	14	16	500	2,0	0,05	25
S14K14AUTO	B72214S1140K102	14	16	1000	4,0	0,10	50
S14K14AUTOS5D1	B72214S1140K501	14	16	1000	4,0	0,10	50
S20K14AUTO	B72220S1140K102	14	16	2000	12,0	0,20	100
S10K17AUTO	B72210S1170K102	17	20	500	2,5	0,05	25
S14K17AUTO	B72214S1170K102	17	20	1000	5,0	0,10	50
S20K17AUTO	B72220S1170K102	17	20	2000	14,0	0,20	100
24-V supply systems							
S20K25AUTO	B72220S1250K102	25	28	2000	22,0	0,20	100
S14K30AUTO	B72214S1300K102	30	34	1000	9,0	0,10	50
S20K30AUTO	B72220S1300K102	30	34	2000	26,0	0,20	100



Characteristics (T_A = 25 °C)

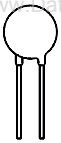
Type (untaped) SIOV-	V_{Jump} (5 min) V	V_v (1 mA) V	ΔV_v (1 mA) %	Max. clamping voltage v V	Max. clamping voltage i A	C_{typ} (1 kHz) nF	Derating curve Page	V/I characteristic Page
12-V supply systems								
S07K14AUTOS2D1	25	22	± 10	43	2,5	2,3	246	275
S10K14AUTO	25	22	± 10	43	5,0	5,2	248	276
S10K14AUTOS5D1	25	22	± 10	43	5,0	5,2	248	276
S14K14AUTO	25	22	± 10	43	10,0	10,0	249	277
S14K14AUTOS5D1	25	22	± 10	43	10,0	10,0	249	277
S20K14AUTO	25	22	± 10	43	20,0	19,0	251	278
S10K17AUTO	30	27	± 10	53	5,0	4,4	248	276
S14K17AUTO	30	27	± 10	53	10,0	8,2	249	277
S20K17AUTO	30	27	± 10	53	20,0	15,6	251	278
24-V supply systems								
S20K25AUTO	40	39	± 10	77	20,0	11,1	251	278
S14K30AUTO	45	47	± 10	93	10,0	5,0	249	277
S20K30AUTO	45	47	± 10	93	20,0	9,4	251	278

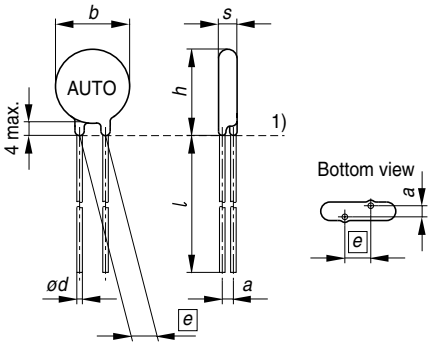
Notes

- If the maximum loads specified for load dump and jump start are fully utilized, subsequent polarity reversal of the AUTO varistors is inadmissible.
- If the load remains under the maximum ratings, polarity reversal may be admissible. Contact EPCOS for consultancy on this kind of problem.
- Load dump or jump start can decrease the varistor voltage in load direction by max. 15 %.
- Load dump: min. time of energy input 40 ms, interval 60 s.

Characteristics	Test methods	Specifications
Fast temperature cycling	IEC 60068-2-14, test Na, UCT/LCT, dwell time 15 min 100 cycles: SIOV-S…AUTO 1000 cycles: SIOV-S…AUTOD1	$\lvert\Delta V/V$ (1 mA)$\rvert \leq$ 10 % No visible damage
Damp heat, steady state	Based on IEC 60068-2-3, 85 °C, 85 % r.h., V_{DC}, 1000 h	$\lvert\Delta V/V$ (1 mA)$\rvert^{1)} \leq$ 10 % No visible damage
Max. DC operating voltage	MIL STD 202F, method 108A, UCT, V_{DC}, 1000 h	$\lvert\Delta V/V$ (1 mA)$\rvert^{1)} \leq$ 10 % No visible damage

1) Measured in load direction





1) Seating plane in accordance with IEC 60717

VAR0401-Y

Dimensions

Type	e ± 1 mm	a ± 1 mm	b_{max} mm	s_{max} mm	h_{max} mm	l_{min} mm	d ± 0,05 mm
SIOV-S07K14AUTOS2D1	5,0	1,3	9,0	3,5	12,5	30,0	0,6
SIOV-S10K14AUTO	7,5	1,5	13,0	5,0	16,5	30,0	0,8
SIOV-S10K14AUTOS5D1	7,5	1,5	12,0	4,0	16,0	30,0	0,8
SIOV-S14K14AUTO	7,5	1,5	17,0	5,0	20,5	30,0	0,8
SIOV-S14K14AUTOS5D1	7,5	1,5	16,0	4,0	20,0	30,0	0,8
SIOV-S20K14AUTO	10,0	1,6	23,0	5,4	27,5	30,0	1,0
SIOV-S10K17AUTO	7,5	1,6	13,0	5,1	16,5	30,0	0,8
SIOV-S14K17AUTO	7,5	1,7	17,0	5,1	20,5	30,0	0,8
SIOV-S20K17AUTO	10,0	1,6	23,0	5,6	27,5	30,0	1,0
SIOV-S20K25AUTO	10,0	2,9	23,0	6,2	27,5	30,0	1,0
SIOV-S14K30AUTO	7,5	1,8	17,0	5,3	20,5	30,0	0,8
SIOV-S20K30AUTO	10,0	3,2	23,0	6,5	27,5	30,0	1,0

For crimp styles S2 and S5 see page 212

Weight

Size	approx.
S07	0,6 … 0,8 g
S10	1,0 … 2,0 g
S14	2,0 … 4,0 g
S20	3,0 … 6,0 g

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