

Leaded Varistors

Automotive Series for 42-V Supply Systems

Construction

- Round varistor element, leaded
- Coating: phenolic resin
- Terminals: tinned copper wire

Features

- New automotive series for 42-V supply systems
- This series complies with the electrical requirements for the new 42-V board net as specified in draft standard ISO/TC22 WD42V-1E
- Stable protection level, minimum leakage current
- High resistance to cyclic temperature stress: 1000 cycles
- High operating temperature of up to 125 °C

Applications

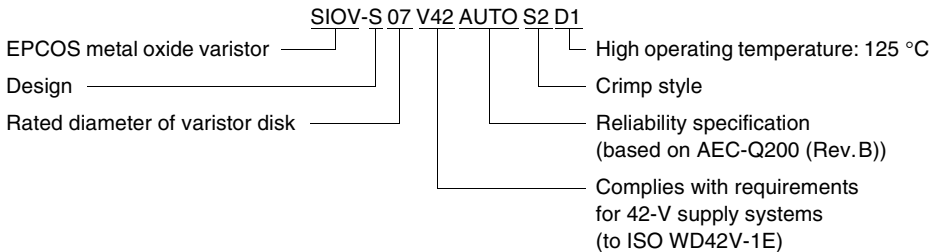
- Reliable protection from inductive voltage spikes, e. g. in wiper and air vent motors, power windows, rear mirror, power seat and other servo drives

Taping

- All types available on tape upon request

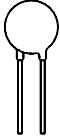
Type designation

Detailed description of coding system on page 39, chapter “General Technical Information”



General technical data

Climatic category	40/125/56	in accordance with IEC 60068-1
LCT	– 40 °C	
UCT	+ 125 °C	
Damp heat, steady state (93 % r.h., 40 °C)	56 days	in accordance with IEC 60068-2-3
Operating temperature	– 40 ... + 125 °C	in accordance with CECC 42 000
Storage temperature	– 40 ... + 150 °C	
Response time	< 25 ns	



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Maximum ratings ($T_A = 125\text{ °C}$)

Type (untaped) SIOV-	Ordering code	$V_{\text{rms-op, max}}^{1)}$ V_{DC}	$V_{\text{op, max}}^{2)}$ V_{DC}	$V_{\text{max, dyn}}^{3)}$ V_{DC}	W_{max} (2 ms) J	P_{max} W
42-V supply systems						
S07V42AUTOS2D1	B72207S1390K201	48	50	58	3,0	0,02
S10V42AUTOS5D1	B72210S1390K501	48	50	58	6,4	0,05
S14V42AUTOS5D1	B72214S1390K501	48	50	58	13,0	0,10
S20V42AUTOS5D1	B72220S1390K501	48	50	58	37,0	0,20

Note:

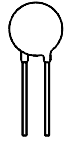
- 1) Root-mean-square value of max. DC operating voltage incl. ripple content
- 2) Peak value of max. DC operating voltage incl. ripple content
- 3) Max. dynamic overvoltage as per ISO/TC22 WD24V-1E, $t_s \leq 400\text{ ms}$

Characteristics ($T_A = 25\text{ °C}$)

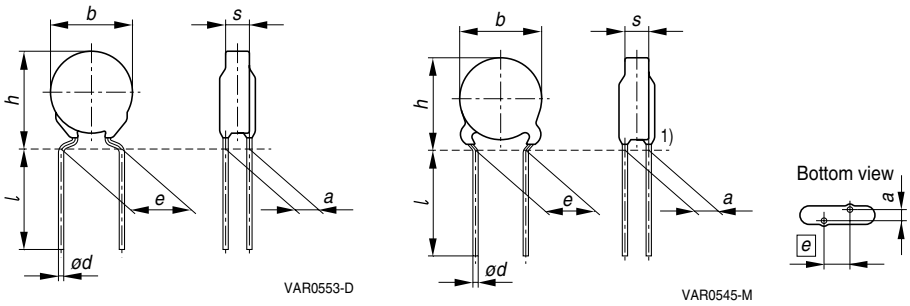
Type (untaped) SIOV-	V_V (1 mA) V	ΔV_V (1 mA) %	Max. clamping voltage v i V A		C_{typ} (1 kHz) nF	Derating curve Page	V/I char- acteristic Page
42-V supply systems							
S07V42AUTOS2D1	62	± 10	125	2,5	0,97	246	286
S10V42AUTOS5D1	62	± 10	125	5,0	2,20	248	286
S14V42AUTOS5D1	62	± 10	125	10,0	3,80	249	286
S20V42AUTOS5D1	62	± 10	125	20,0	7,30	251	286

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

1) Measured in load direction



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1) Seating plane in accordance with IEC 60717

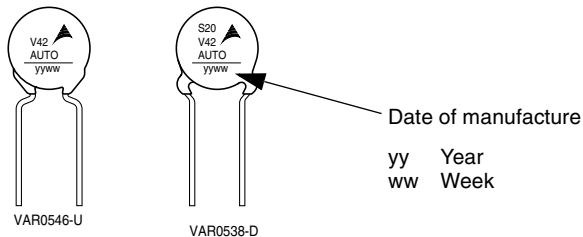
S07V42AUTOS2D1

S10, S14, S20V42AUTOS5D1

Dimensions

Type	$e \pm 1$ mm	$a \pm 1$ mm	b_{\max} mm	s_{\max} mm	h_{\max} mm	l_{\min} mm	$d \pm 0,05$ mm
S07V42AUTOS2D1	5,0	1,7	9,0	4,1	12,0	30,0	0,6
S10V42AUTOS5D1	7,5	2,0	12,0	4,8	15,5	30,0	0,8
S14V42AUTOS5D1	7,5	2,1	16,0	4,9	20,0	30,0	0,8
S20V42AUTOS5D1	10,0	2,3	22,0	5,5	27,0	30,0	1,0

Typical marking (schematic representation)



For crimp styles S2 and S5 see page 212

Weight

Size	approx.
S07	0,5 g
S10	1,0 g
S14	2,5 g
S20	5,0 g

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