



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

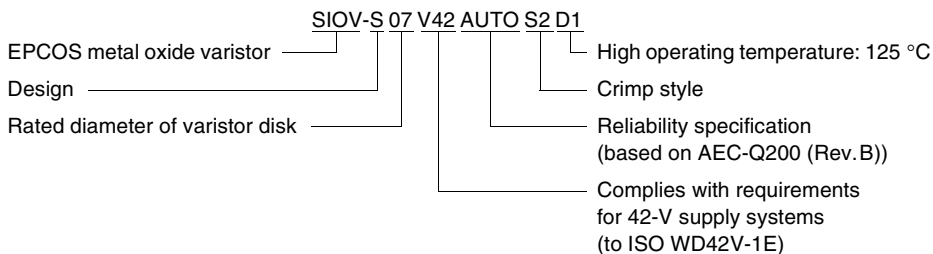
- Reliable protection from inductive voltage spikes, e. g. in wiper and air vent motors, power windows, rear mirror, power seat and other servo drives

Taping

- All types available on tape upon request

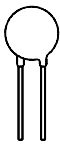
Type designation

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 | |



Leaded Varistors
Automotive Series for 42-V Supply Systems

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 |

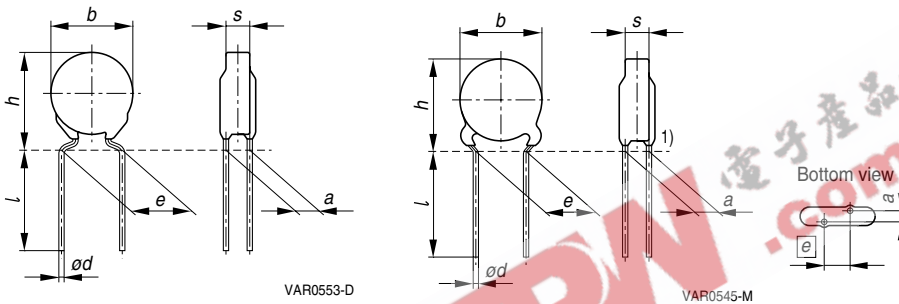
| Characteristics | Test methods | Specifications |
|---------------------------|--|---|
| Fast temperature cycling | IEC 60068-2-14, test Na, UCT/LCT, dwell time 15 min 1000 cycles | $ \Delta V/V (1\text{ mA}) \leq 10\%$ No visible damage |
| Damp heat, steady state | Based on IEC 60068-2-3, 85 °C,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

1) Measured in load direction



Leaded Varistors

Automotive Series for 42-V Supply Systems



1) Seating plane in accordance with IEC 60717

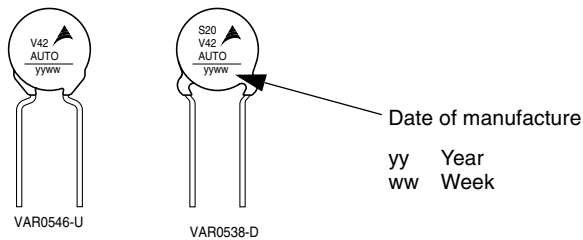
S07V42AUTOS2D1

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 |
|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------------------|
| SIOV- | | | | | | | |
| 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 |

Herausgegeben von EPCOS AG

Unternehmenskommunikation, Postfach 80 17 09, 81617 München, DEUTSCHLAND

☎ ++49 89 636 09, FAX (0 89) 636-2 26 89

© EPCOS AG 2002. Vervielfältigung, Veröffentlichung, Verbreitung und Verwertung dieser Broschüre und ihres Inhalts ohne ausdrückliche Genehmigung der EPCOS AG nicht gestattet.

Bestellungen unterliegen den vom ZVEI empfohlenen Allgemeinen Lieferbedingungen für Erzeugnisse und Leistungen der Elektroindustrie, soweit nichts anderes vereinbart wird.

Diese Broschüre ersetzt die vorige Ausgabe.

Fragen über Technik, Preise und Liefermöglichkeiten richten Sie bitte an den Ihnen nächstgelegenen Vertrieb der EPCOS AG oder an unsere Vertriebsgesellschaften im Ausland. Bauelemente können aufgrund technischer Erfordernisse Gefahrstoffe enthalten. Auskünfte darüber bitten wir unter Angabe des betreffenden Typs ebenfalls über die zuständige Vertriebsgesellschaft einzuholen.

Published by EPCOS AG

Corporate Communications, P.O. Box 80 17 09, 81617 Munich, GERMANY

☎ ++49 89 636 09, FAX (0 89) 636-2 26 89

© EPCOS AG 2002. Reproduction, publication and dissemination of this brochure and the information contained therein without EPCOS' prior express consent is prohibited.

Purchase orders are subject to the General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry recommended by the ZVEI (German Electrical and Electronic Manufacturers' Association), unless otherwise agreed.

This brochure replaces the previous edition.

For questions on technology, prices and delivery please contact the Sales Offices of EPCOS AG or the international Representatives.

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our Sales Offices.

