

## Block Varistors

### HighE Series

#### Construction

- Disk-shaped varistor element, potted in plastic housing
- Housing and potting flame-retardant to UL 94 V-0
- Screw terminals M4 (SIOV-B32 ... 40)  
Screw terminals M5 (SIOV-B60 ... 80)

#### Features

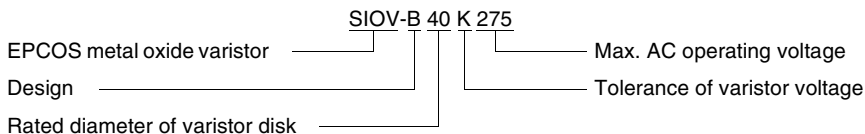
- Heavy-duty varistors (surge current capability up to 100 kA)
- Wide product range
- SIOV-B40 also available without housing (LS40 series)
- PSpice models

#### Approvals

- UL
- CSA ( $\geq$  K130)
- SEV (except SIOV-B80)

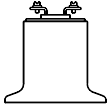
#### Type designation

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



#### General technical data

|   |                                    |                                  |
|---|------------------------------------|----------------------------------|
| Climatic category                             | 40/85/56                           | in accordance with IEC 60068-1   |
| LCT   | - 40 °C                            |                                  |
| UCT   | + 85 °C                            |                                  |
| Damp heat, steady state<br>(93 % r.h., 40 °C) | 56 days                            | in accordance with IEC 60068-2-3 |
| Operating temperature                         | - 40 ... + 85 °C                   | in accordance with CECC 42 000   |
| Storage temperature                           | - 40 ... + 110 °C                  |                                  |
| Electric strength                             | $\geq 2,5 \text{ kV}_{\text{RMS}}$ | in accordance with CECC 42 000   |
| Insulation resistance                         | $\geq 10 \text{ M}\Omega$          | in accordance with CECC 42 000   |
| Response time                                 | < 25 ns                            |                                  |
| Max. torque                                   |                                    |                                  |
| B32/B40                                       | 1,0 Nm                             |                                  |
| B60/B80                                       | 2,5 Nm                             |                                  |



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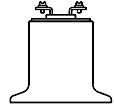
### HighE Series

Maximum ratings ( $T_A = 85\text{ °C}$ )

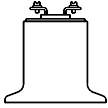
| Type    | Ordering code   | $V_{RMS}$ | $V_{DC}$ | $i_{max}$<br>8/20 $\mu$ s<br>A | $W_{max}$<br>(2 ms)<br>J | $P_{max}$<br>W |
|---------|-----------------|-----------|----------|--------------------------------|--------------------------|----------------|
| SIOV-   |                 | V         | V        |                                |                          |                |
| B40K75  | B72240B0750K001 | 75        | 100      | 25000                          | 190                      | 1,4            |
| B32K130 | B72232B0131K001 | 130       | 170      | 25000                          | 210                      | 1,2            |
| B40K130 | B72240B0131K001 | 130       | 170      | 40000                          | 310                      | 1,4            |
| B60K130 | B72260B0131K001 | 130       | 170      | 70000                          | 490                      | 1,6            |
| B80K130 | B72280B0131K001 | 130       | 170      | 100000                         | 660                      | 2,0            |
| B32K150 | B72232B0151K001 | 150       | 200      | 25000                          | 240                      | 1,2            |
| B40K150 | B72240B0151K001 | 150       | 200      | 40000                          | 360                      | 1,4            |
| B60K150 | B72260B0151K001 | 150       | 200      | 70000                          | 570                      | 1,6            |
| B80K150 | B72280B0151K001 | 150       | 200      | 100000                         | 800                      | 2,0            |
| B32K230 | B72232B0231K001 | 230       | 300      | 25000                          | 300                      | 1,2            |
| B40K230 | B72240B0231K001 | 230       | 300      | 40000                          | 460                      | 1,4            |
| B60K230 | B72260B0231K001 | 230       | 300      | 70000                          | 730                      | 1,6            |
| B80K230 | B72280B0231K001 | 230       | 300      | 100000                         | 1200                     | 2,0            |
| B32K250 | B72232B0251K001 | 250       | 320      | 25000                          | 330                      | 1,2            |
| B40K250 | B72240B0251K001 | 250       | 320      | 40000                          | 490                      | 1,4            |
| B60K250 | B72260B0251K001 | 250       | 320      | 70000                          | 800                      | 1,6            |
| B80K250 | B72280B0251K001 | 250       | 320      | 100000                         | 1300                     | 2,0            |
| B32K275 | B72232B0271K001 | 275       | 350      | 25000                          | 360                      | 1,2            |
| B40K275 | B72240B0271K001 | 275       | 350      | 40000                          | 550                      | 1,4            |
| B60K275 | B72260B0271K001 | 275       | 350      | 70000                          | 860                      | 1,6            |
| B80K275 | B72280B0271K001 | 275       | 350      | 100000                         | 1400                     | 2,0            |
| B32K320 | B72232B0321K001 | 320       | 420      | 25000                          | 430                      | 1,2            |
| B40K320 | B72240B0321K001 | 320       | 420      | 40000                          | 640                      | 1,4            |
| B60K320 | B72260B0321K001 | 320       | 420      | 70000                          | 1000                     | 1,6            |
| B80K320 | B72280B0321K001 | 320       | 420      | 100000                         | 1600                     | 2,0            |
| B32K385 | B72232B0381K001 | 385       | 505      | 25000                          | 550                      | 1,2            |
| B40K385 | B72240B0381K001 | 385       | 505      | 40000                          | 800                      | 1,4            |
| B60K385 | B72260B0381K001 | 385       | 505      | 70000                          | 1200                     | 1,6            |
| B80K385 | B72280B0381K001 | 385       | 505      | 100000                         | 2000                     | 2,0            |

Varistor elements without plastic housing (suitable for soldering) are available upon request.

Designations: SIOV-D32K ... K6      SIOV-D60K ... K6  
 SIOV-D40K ... QK6      SIOV-D80K ... K6


**Characteristics** ( $T_A = 25\text{ }^\circ\text{C}$ )

| Type    | $V_V$<br>(1 mA)<br>V | $\Delta V_V$<br>(1 mA)<br>% | Max. clamping voltage |          | $C_{typ}$<br>(1 kHz)<br>pF | Derating<br>curve<br>Page | V/I char-<br>acteristic<br>Page |
|---------|----------------------|-----------------------------|-----------------------|----------|----------------------------|---------------------------|---------------------------------|
|         |                      |                             | $v$<br>V              | $i$<br>A |                            |                           |                                 |
| B40K75  | 120                  | $\pm 10$                    | 220                   | 300      | 11000                      | 259                       | 282                             |
| B32K130 | 205                  | $\pm 10$                    | 340                   | 200      | 4400                       | 259                       | 281                             |
| B40K130 | 205                  | $\pm 10$                    | 340                   | 300      | 5600                       | 260                       | 282                             |
| B60K130 | 205                  | $\pm 10$                    | 340                   | 500      | 15000                      | 262                       | 283                             |
| B80K130 | 205                  | $\pm 10$                    | 340                   | 800      | 28000                      | 264                       | 285                             |
| B32K150 | 240                  | $\pm 10$                    | 395                   | 200      | 3700                       | 259                       | 281                             |
| B40K150 | 240                  | $\pm 10$                    | 395                   | 300      | 4800                       | 260                       | 282                             |
| B60K150 | 240                  | $\pm 10$                    | 395                   | 500      | 12000                      | 262                       | 283                             |
| B80K150 | 240                  | $\pm 10$                    | 395                   | 800      | 23000                      | 264                       | 285                             |
| B32K230 | 360                  | $\pm 10$                    | 595                   | 200      | 2500                       | 259                       | 281                             |
| B40K230 | 360                  | $\pm 10$                    | 595                   | 300      | 3200                       | 261                       | 282                             |
| B60K230 | 360                  | $\pm 10$                    | 595                   | 500      | 7900                       | 263                       | 283                             |
| B80K230 | 360                  | $\pm 10$                    | 595                   | 800      | 16000                      | 264                       | 285                             |
| B32K250 | 390                  | $\pm 10$                    | 650                   | 200      | 2200                       | 259                       | 281                             |
| B40K250 | 390                  | $\pm 10$                    | 650                   | 300      | 2900                       | 261                       | 282                             |
| B60K250 | 390                  | $\pm 10$                    | 650                   | 500      | 7100                       | 263                       | 283                             |
| B80K250 | 390                  | $\pm 10$                    | 650                   | 800      | 14000                      | 264                       | 285                             |
| B32K275 | 430                  | $\pm 10$                    | 710                   | 200      | 2000                       | 259                       | 281                             |
| B40K275 | 430                  | $\pm 10$                    | 710                   | 300      | 2700                       | 261                       | 282                             |
| B60K275 | 430                  | $\pm 10$                    | 710                   | 500      | 6600                       | 263                       | 283                             |
| B80K275 | 430                  | $\pm 10$                    | 710                   | 800      | 13000                      | 264                       | 285                             |
| B32K320 | 510                  | $\pm 10$                    | 840                   | 200      | 1700                       | 259                       | 281                             |
| B40K320 | 510                  | $\pm 10$                    | 840                   | 300      | 2300                       | 261                       | 282                             |
| B60K320 | 510                  | $\pm 10$                    | 840                   | 500      | 5600                       | 263                       | 283                             |
| B80K320 | 510                  | $\pm 10$                    | 840                   | 800      | 11000                      | 264                       | 285                             |
| B32K385 | 620                  | $\pm 10$                    | 1025                  | 200      | 1400                       | 259                       | 281                             |
| B40K385 | 620                  | $\pm 10$                    | 1025                  | 300      | 1900                       | 261                       | 282                             |
| B60K385 | 620                  | $\pm 10$                    | 1025                  | 500      | 4600                       | 263                       | 283                             |
| B80K385 | 620                  | $\pm 10$                    | 1025                  | 800      | 9000                       | 264                       | 285                             |



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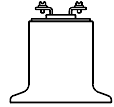
#### Maximum ratings ( $T_A = 85\text{ °C}$ )

| Type                   | Ordering code   | $V_{RMS}$<br>V | $V_{DC}$<br>V | $i_{max}$<br>8/20 $\mu$ s<br>A | $W_{max}$<br>(2 ms)<br>J | $P_{max}$<br>W |
|------------------------|-----------------|----------------|---------------|--------------------------------|--------------------------|----------------|
| SIOV-                  |                 |                |               |                                |                          |                |
| B32K420                | B72232B0421K001 | 420            | 560           | 25000                          | 600                      | 1,2            |
| B40K420                | B72240B0421K001 | 420            | 560           | 40000                          | 910                      | 1,4            |
| B60K420                | B72260B0421K001 | 420            | 560           | 70000                          | 1500                     | 1,6            |
| B80K420                | B72280B0421K001 | 420            | 560           | 100000                         | 2200                     | 2,0            |
| B32K440                | B72232B0441K001 | 440            | 585           | 25000                          | 630                      | 1,2            |
| B40K440                | B72240B0441K001 | 440            | 585           | 40000                          | 950                      | 1,4            |
| B60K440                | B72260B0441K001 | 440            | 585           | 70000                          | 1580                     | 1,6            |
| B80K440                | B72280B0441K001 | 440            | 585           | 100000                         | 2350                     | 2,0            |
| B32K460                | B72232B0461K001 | 460            | 615           | 25000                          | 660                      | 1,2            |
| B40K460                | B72240B0461K001 | 460            | 615           | 40000                          | 1000                     | 1,4            |
| B60K460                | B72260B0461K001 | 460            | 615           | 70000                          | 1650                     | 1,6            |
| B80K460                | B72280B0461K001 | 460            | 615           | 100000                         | 2500                     | 2,0            |
| B32K550                | B72232B0551K001 | 550            | 745           | 25000                          | 620                      | 1,2            |
| B40K550                | B72240B0551K001 | 550            | 745           | 40000                          | 960                      | 1,4            |
| B60K550                | B72260B0551K001 | 550            | 745           | 70000                          | 1500                     | 1,6            |
| B80K550                | B72280B0551K001 | 550            | 745           | 100000                         | 3100                     | 2,0            |
| B32K680                | B72232B0681K001 | 680            | 895           | 25000                          | 760                      | 1,2            |
| B40K680                | B72240B0681K001 | 680            | 895           | 40000                          | 1100                     | 1,4            |
| B60K680                | B72260B0681K001 | 680            | 895           | 70000                          | 1800                     | 1,6            |
| B80K680                | B72280B0681K001 | 680            | 895           | 100000                         | 3600                     | 2,0            |
| B32K750                | B72232B0751K001 | 750            | 970           | 25000                          | 800                      | 1,2            |
| B40K750                | B72240B0751K001 | 750            | 970           | 40000                          | 1200                     | 1,4            |
| B60K750                | B72260B0751K001 | 750            | 970           | 70000                          | 2000                     | 1,6            |
| B80K750                | B72280B0751K001 | 750            | 970           | 100000                         | 4000                     | 2,0            |
| B60K1000 <sup>1)</sup> | B72260B0102K001 | 1100           | 1465          | 70000                          | 3000                     | 1,6            |
| B80K1100               | B72280B0112K001 | 1100           | 1465          | 100000                         | 6000                     | 2,0            |

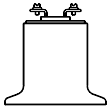
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Designations: SIOV-D32K ... K6      SIOV-D60K ... K6  
 SIOV-D40K ... QK6      SIOV-D80K ... K6

1) Operating voltage differs from type designation


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

| Type     | $V_V$<br>(1 mA)<br>V | $\Delta V_V$<br>(1 mA)<br>% | Max. clamping voltage |          | $C_{typ}$<br>(1 kHz)<br>pF | Derating<br>curve<br>Page | V/I char-<br>acteristic<br>Page |
|----------|----------------------|-----------------------------|-----------------------|----------|----------------------------|---------------------------|---------------------------------|
|          |                      |                             | $v$<br>V              | $i$<br>A |                            |                           |                                 |
| SIOV-    |                      |                             |                       |          |                            |                           |                                 |
| B32K420  | 680                  | ± 10                        | 1120                  | 200      | 1300                       | 259                       | 281                             |
| B40K420  | 680                  | ± 10                        | 1120                  | 300      | 1800                       | 261                       | 282                             |
| B60K420  | 680                  | ± 10                        | 1120                  | 500      | 4300                       | 263                       | 283                             |
| B80K420  | 680                  | ± 10                        | 1120                  | 800      | 8500                       | 264                       | 285                             |
| B32K440  | 715                  | ± 10                        | 1180                  | 200      | 1250                       | 259                       | 281                             |
| B40K440  | 715                  | ± 10                        | 1180                  | 300      | 1700                       | 261                       | 282                             |
| B60K440  | 715                  | ± 10                        | 1180                  | 500      | 4100                       | 263                       | 283                             |
| B80K440  | 715                  | ± 10                        | 1180                  | 800      | 8100                       | 264                       | 285                             |
| B32K460  | 750                  | ± 10                        | 1240                  | 200      | 1200                       | 259                       | 281                             |
| B40K460  | 750                  | ± 10                        | 1240                  | 300      | 1600                       | 261                       | 282                             |
| B60K460  | 750                  | ± 10                        | 1240                  | 500      | 3900                       | 263                       | 283                             |
| B80K460  | 750                  | ± 10                        | 1240                  | 800      | 7700                       | 264                       | 285                             |
| B32K550  | 910                  | ± 10                        | 1500                  | 200      | 1000                       | 260                       | 281                             |
| B40K550  | 910                  | ± 10                        | 1500                  | 300      | 1400                       | 261                       | 282                             |
| B60K550  | 910                  | ± 10                        | 1500                  | 500      | 3300                       | 263                       | 283                             |
| B80K550  | 910                  | ± 10                        | 1500                  | 800      | 6500                       | 264                       | 285                             |
| B32K680  | 1100                 | ± 10                        | 1815                  | 200      | 830                        | 260                       | 281                             |
| B40K680  | 1100                 | ± 10                        | 1815                  | 300      | 1100                       | 261                       | 282                             |
| B60K680  | 1100                 | ± 10                        | 1815                  | 500      | 2600                       | 263                       | 283                             |
| B80K680  | 1100                 | ± 10                        | 1815                  | 800      | 5200                       | 264                       | 285                             |
| B32K750  | 1200                 | ± 10                        | 2000                  | 200      | 800                        | 260                       | 281                             |
| B40K750  | 1200                 | ± 10                        | 2000                  | 300      | 1000                       | 261                       | 282                             |
| B60K750  | 1200                 | ± 10                        | 2000                  | 500      | 2400                       | 263                       | 283                             |
| B80K750  | 1200                 | ± 10                        | 2000                  | 800      | 4800                       | 264                       | 285                             |
| B60K1000 | 1800                 | ± 10                        | 2970                  | 500      | 1600                       | 263                       | 283                             |
| B80K1100 | 1800                 | ± 10                        | 2970                  | 800      | 3200                       | 264                       | 285                             |

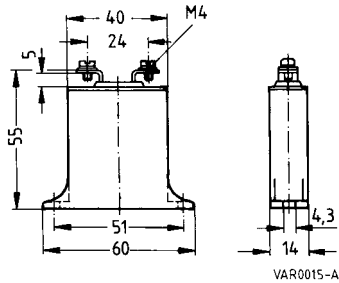


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#### Dimensions

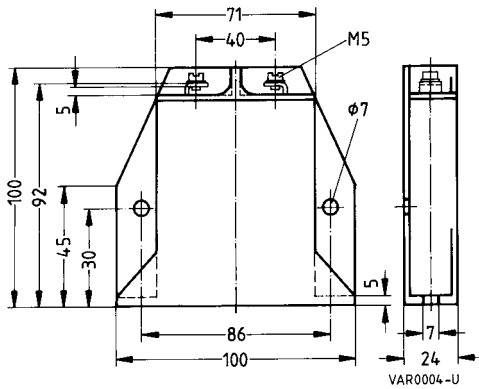
##### SIOV-B32/-B40



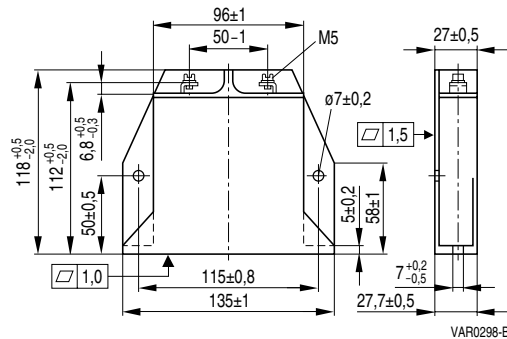
#### Weight

| Size | approx. |
|------|---------|
| B32  | 45 g    |
| B40  | 50 g    |
| B60  | 250 g   |
| B80  | 650 g   |

##### SIOV-B60



##### SIOV-B80



Dimensions in mm

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