

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

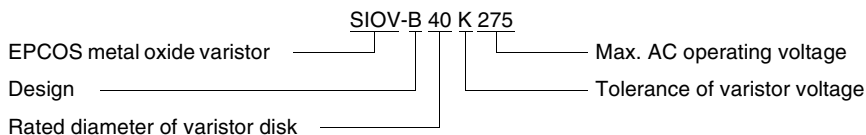
- Heavy-duty varistors (surge current capability up to 100 kA)
- Wide product range
- SIOV-B40 also available without housing (LS40 series)
- PSpice models

Approvals

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

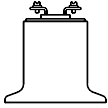
Type designation

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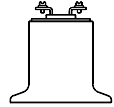
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Maximum ratings ($T_A = 85\text{ °C}$)

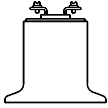
| Type | Ordering code | V_{RMS} | V_{DC} | i_{max} 8/20 μ s A | W_{max} (2 ms) J | P_{max} W |
|---------|-----------------|-----------|----------|--------------------------------|--------------------------|----------------|
| SIOV- | | V | V | | | |
| B40K75 | B72240B0750K001 | 75 | 100 | 25000 | 190 | 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 (1 mA) V | ΔV_V (1 mA) % | Max. clamping voltage | | C_{typ} (1 kHz) pF | Derating curve Page | V/I char- acteristic Page |
|---------|----------------------|-----------------------------|-----------------------|----------|----------------------------|---------------------------|---------------------------------|
| | | | v V | i A | | | |
| B40K75 | 120 | ± 10 | 220 | 300 | 11000 | 259 | 282 |
| B32K130 | 205 | ± 10 | 340 | 200 | 4400 | 259 | 281 |
| B40K130 | 205 | ± 10 | 340 | 300 | 5600 | 260 | 282 |
| B60K130 | 205 | ± 10 | 340 | 500 | 15000 | 262 | 283 |
| B80K130 | 205 | ± 10 | 340 | 800 | 28000 | 264 | 285 |
| B32K150 | 240 | ± 10 | 395 | 200 | 3700 | 259 | 281 |
| B40K150 | 240 | ± 10 | 395 | 300 | 4800 | 260 | 282 |
| B60K150 | 240 | ± 10 | 395 | 500 | 12000 | 262 | 283 |
| B80K150 | 240 | ± 10 | 395 | 800 | 23000 | 264 | 285 |
| B32K230 | 360 | ± 10 | 595 | 200 | 2500 | 259 | 281 |
| B40K230 | 360 | ± 10 | 595 | 300 | 3200 | 261 | 282 |
| B60K230 | 360 | ± 10 | 595 | 500 | 7900 | 263 | 283 |
| B80K230 | 360 | ± 10 | 595 | 800 | 16000 | 264 | 285 |
| B32K250 | 390 | ± 10 | 650 | 200 | 2200 | 259 | 281 |
| B40K250 | 390 | ± 10 | 650 | 300 | 2900 | 261 | 282 |
| B60K250 | 390 | ± 10 | 650 | 500 | 7100 | 263 | 283 |
| B80K250 | 390 | ± 10 | 650 | 800 | 14000 | 264 | 285 |
| B32K275 | 430 | ± 10 | 710 | 200 | 2000 | 259 | 281 |
| B40K275 | 430 | ± 10 | 710 | 300 | 2700 | 261 | 282 |
| B60K275 | 430 | ± 10 | 710 | 500 | 6600 | 263 | 283 |
| B80K275 | 430 | ± 10 | 710 | 800 | 13000 | 264 | 285 |
| B32K320 | 510 | ± 10 | 840 | 200 | 1700 | 259 | 281 |
| B40K320 | 510 | ± 10 | 840 | 300 | 2300 | 261 | 282 |
| B60K320 | 510 | ± 10 | 840 | 500 | 5600 | 263 | 283 |
| B80K320 | 510 | ± 10 | 840 | 800 | 11000 | 264 | 285 |
| B32K385 | 620 | ± 10 | 1025 | 200 | 1400 | 259 | 281 |
| B40K385 | 620 | ± 10 | 1025 | 300 | 1900 | 261 | 282 |
| B60K385 | 620 | ± 10 | 1025 | 500 | 4600 | 263 | 283 |
| B80K385 | 620 | ± 10 | 1025 | 800 | 9000 | 264 | 285 |



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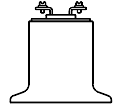
Maximum ratings ($T_A = 85\text{ °C}$)

| Type | Ordering code | V_{RMS} V | V_{DC} V | i_{max} 8/20 μ s A | W_{max} (2 ms) J | P_{max} 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 ¹⁾ | B72260B0102K001 | 1100 | 1465 | 70000 | 3000 | 1,6 |
| B80K1100 | B72280B0112K001 | 1100 | 1465 | 100000 | 6000 | 2,0 |

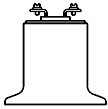
Varistor elements without plastic housing (suitable for soldering) are available upon request.

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

1) Operating voltage differs from type designation


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

| Type | V_V (1 mA) V | ΔV_V (1 mA) % | Max. clamping voltage | | C_{typ} (1 kHz) pF | Derating curve Page | V/I char- acteristic Page |
|----------|----------------------|-----------------------------|-----------------------|----------|----------------------------|---------------------------|---------------------------------|
| | | | v V | i 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 |

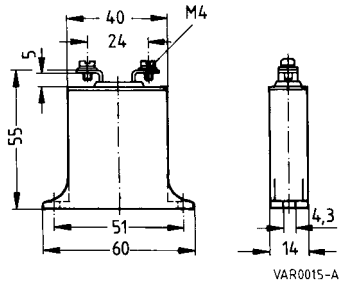


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Dimensions

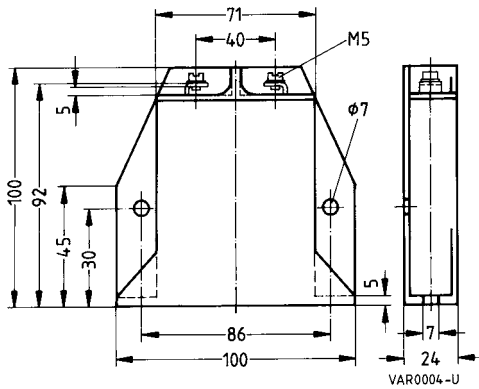
SIOV-B32/-B40



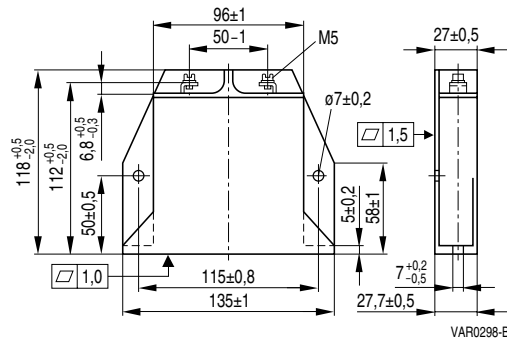
Weight

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

SIOV-B60



SIOV-B80



Dimensions in mm

Herausgegeben von EPCOS AG

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