



## Leaded Varistors

### SuperioR Series

#### Construction

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

#### Features

- High-energy SuperioR series E3
- Very high surge current ratings of 12 kA
- High energy ratings up to 320 J
- PSpice models

#### Approvals

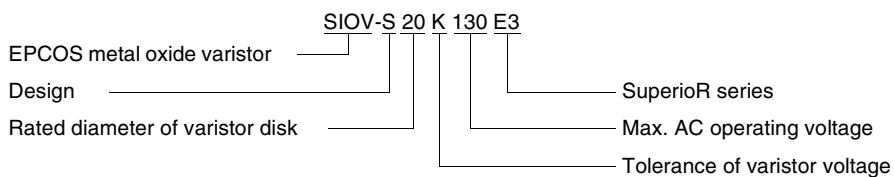
- UL, CSA (all types  $\geq$  K115)
- CECC

#### Taping

- For ordering information see page 206 ff, chapter "Leaded Varistors: Taping"

#### 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 ... + 125 °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                            |                                  |



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

| Type<br>(untaped)<br>SIOV- | 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 |
|----------------------------|-----------------|----------------|---------------|--------------------------------|--------------------------|----------------|
| S20K115E3                  | B72220S3111K101 | 115            | 150           | 12000                          | 110                      | 1,0            |
| S20K130E3                  | B72220S3131K101 | 130            | 170           | 12000                          | 130                      | 1,0            |
| S20K140E3                  | B72220S3141K101 | 140            | 180           | 12000                          | 140                      | 1,0            |
| S20K150E3                  | B72220S3151K101 | 150            | 200           | 12000                          | 150                      | 1,0            |
| S20K175E3                  | B72220S3171K101 | 175            | 225           | 12000                          | 180                      | 1,0            |
| S20K210E3                  | B72220S3211K101 | 210            | 270           | 12000                          | 210                      | 1,0            |
| S20K230E3                  | B72220S3231K101 | 230            | 300           | 12000                          | 220                      | 1,0            |
| S20K250E3                  | B72220S3251K101 | 250            | 320           | 12000                          | 250                      | 1,0            |
| S20K275E3                  | B72220S3271K101 | 275            | 350           | 12000                          | 260                      | 1,0            |
| S20K300E3                  | B72220S3301K101 | 300            | 385           | 12000                          | 290                      | 1,0            |
| S20K320E3                  | B72220S3321K101 | 320            | 420           | 12000                          | 320                      | 1,0            |

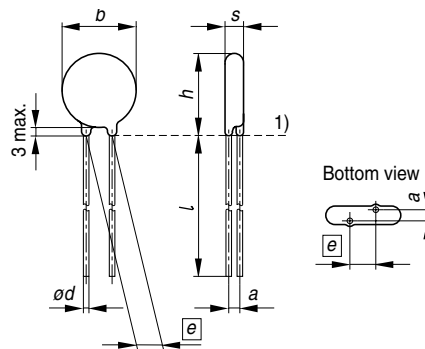
#### Characteristics ( $T_A = 25\text{ °C}$ )

| Type<br>(untaped)<br>SIOV- | $V_V$<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 |                            |                           |                                 |
| S20K115E3                  | 180                  | $\pm 10$                    | 300                   | 100      | 1520                       | 257                       | 278                             |
| S20K130E3                  | 205                  | $\pm 10$                    | 340                   | 100      | 1340                       | 257                       | 278                             |
| S20K140E3                  | 220                  | $\pm 10$                    | 360                   | 100      | 1240                       | 257                       | 278                             |
| S20K150E3                  | 240                  | $\pm 10$                    | 395                   | 100      | 1160                       | 257                       | 278                             |
| S20K175E3                  | 270                  | $\pm 10$                    | 455                   | 100      | 1000                       | 257                       | 278                             |
| S20K210E3                  | 330                  | $\pm 10$                    | 550                   | 100      | 830                        | 257                       | 278                             |
| S20K230E3                  | 360                  | $\pm 10$                    | 595                   | 100      | 760                        | 257                       | 278                             |
| S20K250E3                  | 390                  | $\pm 10$                    | 650                   | 100      | 700                        | 257                       | 278                             |
| S20K275E3                  | 430                  | $\pm 10$                    | 710                   | 100      | 630                        | 257                       | 278                             |
| S20K300E3                  | 470                  | $\pm 10$                    | 775                   | 100      | 580                        | 257                       | 278                             |
| S20K320E3                  | 510                  | $\pm 10$                    | 840                   | 100      | 540                        | 257                       | 278                             |



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1) Seating plane according to IEC 60717

VAR0408-C

## Dimensions

| Type           | $e \pm 1$<br>mm | $a \pm 1$<br>mm | $b_{\max}$<br>mm | $s_{\max}$<br>mm | $h_{\max}$<br>mm | $l_{\min}$<br>mm | $d \pm 0,05$<br>mm |
|----------------|-----------------|-----------------|------------------|------------------|------------------|------------------|--------------------|
| SIOV-S20K115E3 | 10,0            | 1,8             | 22,5             | 4,8              | 26,0             | 30,0             | 1,0                |
| SIOV-S20K130E3 | 10,0            | 2,0             | 22,5             | 5,0              | 26,0             | 30,0             | 1,0                |
| SIOV-S20K140E3 | 10,0            | 2,1             | 22,5             | 5,1              | 26,0             | 30,0             | 1,0                |
| SIOV-S20K150E3 | 10,0            | 2,2             | 22,5             | 5,2              | 26,0             | 30,0             | 1,0                |
| SIOV-S20K175E3 | 10,0            | 2,3             | 22,5             | 5,3              | 26,0             | 30,0             | 1,0                |
| SIOV-S20K210E3 | 10,0            | 2,4             | 22,5             | 5,4              | 26,0             | 30,0             | 1,0                |
| SIOV-S20K230E3 | 10,0            | 2,9             | 22,5             | 5,9              | 26,0             | 30,0             | 1,0                |
| SIOV-S20K250E3 | 10,0            | 3,1             | 22,5             | 6,1              | 27,0             | 30,0             | 1,0                |
| SIOV-S20K275E3 | 10,0            | 3,3             | 22,5             | 6,3              | 27,0             | 30,0             | 1,0                |
| SIOV-S20K300E3 | 10,0            | 3,6             | 22,5             | 6,6              | 27,0             | 30,0             | 1,0                |
| SIOV-S20K320E3 | 10,0            | 3,8             | 22,5             | 6,8              | 27,0             | 30,0             | 1,0                |

## Weight

| Size              | approx.       |                                                                               |
|-------------------|---------------|-------------------------------------------------------------------------------|
| S20K115 ... 320E3 | 4,0 ... 7,0 g | The weight of varistors in between these voltage classes can be interpolated. |

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