

## SMD Varistors

### MLV; Telecom Series



#### Construction

- Multilayer technology
- Termination: nickel barrier (CT series) or silver palladium (CN series)
- No plastic or epoxy encapsulation assures better than UL 94 V-0 flammability rating

#### Features

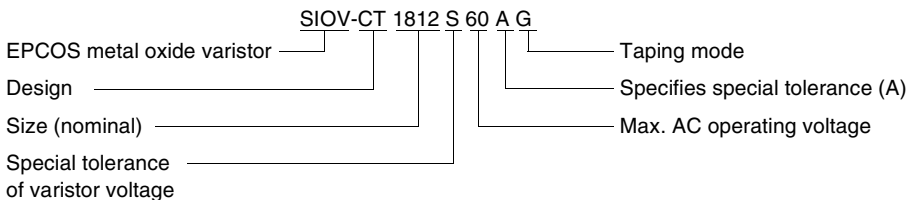
- Suitable for handling surge voltages of up to 2 kV according to the directives of Germany's telecom administration
- Suitable for handling the surge current of the 10/700  $\mu$ s pulse to ITU-T and IEC 61000-4-5
- Matched to line conditions with or without superimposed ringing voltage
- Good solderability
- Suitable for ESD protection
- PSpice models

#### Taping

- Supply on 8/12-mm tape, for tape dimensions see pages 154/155, for reel dimensions and packing units see page 157, chapter "SMD Varistors: Taping"

#### Type designation

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



#### General technical data

|                                            |                   |                                   |
|--------------------------------------------|-------------------|-----------------------------------|
| Climatic category                          | 55/85/56          | 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 <sup>1)</sup>          | - 40 ... + 125 °C |                                   |
| Response time                              | < 0,5 ns          |                                   |
| Solderability                              | 235 °C, 2 s       | in accordance with IEC 60068-2-58 |
| Resistance to soldering heat               | 260 °C, 10 s      | in accordance with IEC 60068-2-58 |

1) For mounted parts (storage conditions for unused parts on reel see page 38, chapter "General Technical Information")



## SMD Varistors

Telecom – Nickel Barrier Termination (available upon request)

### Maximum ratings

| Type             | Ordering code   | $V_{RMS}$<br>V | $V_{DC}$<br>V | $i(10 \times)$<br>10/700 $\mu$ s<br>A <sup>1)</sup> | $i_{max}$<br>8/20 $\mu$ s<br>A | $W_{max}$<br>(2 ms)<br>J | $P_{max}$<br>W |
|------------------|-----------------|----------------|---------------|-----------------------------------------------------|--------------------------------|--------------------------|----------------|
| SIOV-            |                 |                |               |                                                     |                                |                          |                |
| CT1812S60AG2     | B72580T0600S172 | 60             | 85            | 45                                                  | 400                            | 2,2                      | 0,015          |
| CT1812K75TELEG2  | B72580T6750K072 | 75             | 100           | 45                                                  | 400                            | 2,5                      | 0,015          |
| CT1812S95AG2     | B72580T0950S172 | 95             | 125           | 45                                                  | 250                            | 2,8                      | 0,015          |
| CT1812K115TELEG2 | B72580T6111K072 | 115            | 150           | 45                                                  | 250                            | 3,2                      | 0,015          |
| CT1812K130TELEG2 | B72580T6131K072 | 130            | 170           | 45                                                  | 250                            | 3,5                      | 0,015          |

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

| Type             | $V_V$<br>(1 mA)<br>V | $\Delta V_V$<br>(1 mA)<br>% | Max. clamping voltage<br>$v$<br>V |                        | $C_{typ}$<br>(1 kHz)<br>pF | Derating<br>curve<br>Page | V/I char-<br>acteristic<br>Page |
|------------------|----------------------|-----------------------------|-----------------------------------|------------------------|----------------------------|---------------------------|---------------------------------|
| SIOV-            |                      |                             |                                   | $i$<br>A <sup>1)</sup> |                            |                           |                                 |
| CT1812S60AG2     | 100                  | +19/-1                      | 200                               | 45                     | 400                        | 243                       | 273                             |
| CT1812K75TELEG2  | 120                  | $\pm 10$                    | 250                               | 45                     | 320                        | 243                       | 273                             |
| CT1812S95AG2     | 150                  | +20/0                       | 270                               | 45                     | 250                        | 243                       | 273                             |
| CT1812K115TELEG2 | 180                  | $\pm 10$                    | 360                               | 45                     | 200                        | 243                       | 273                             |
| CT1812K130TELEG2 | 205                  | $\pm 10$                    | 420                               | 45                     | 200                        | 243                       | 273                             |

### Notes

- In addition to the telecom varistors listed above, all varistors of the standard series can be used for telecom applications if the selection criteria are considered.
- These telecom varistors in multilayer technology are not suitable for the operation on AC mains.

1) The test circuit according to figure 44 in chapter "Applications" yields a surge current amplitude of approx. 45 A.


**Maximum ratings**

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|------------------|-----------------|----------------|---------------|-----------------------------------------------------|--------------------------------|--------------------------|----------------|
| SIOV-            |                 |                |               |                                                     |                                |                          |                |
| CN1812S60AG2     | B72580V0600S172 | 60             | 85            | 45                                                  | 400                            | 2,2                      | 0,015          |
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**Notes**

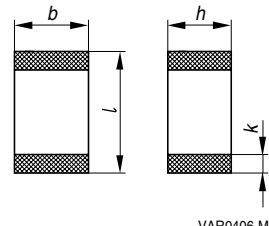
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1) The test circuit according to figure 44 in chapter "Applications" yields a surge current amplitude of approx. 45 A.



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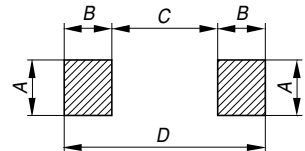
Weight: < 0,2 g

Termination acc. CECC 32101-801

### Dimensions

| Type           | $l$<br>mm      | $b$<br>mm       | $h$<br>mm | $k$<br>mm    |
|----------------|----------------|-----------------|-----------|--------------|
| SIOV-CT/CN1812 | $4,5 \pm 0,40$ | $3,20 \pm 0,30$ | 2,5 max.  | 0,25 ... 1,0 |

Termination: nickel barrier (CT) or silver palladium (CN)



### Recommended solder pad layout

| Type           | $A$<br>mm | $B$<br>mm | $C$<br>mm | $D$<br>mm |
|----------------|-----------|-----------|-----------|-----------|
| SIOV-CT/CN1812 | 3,6       | 1,5       | 3,0       | 6,0       |

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