



## 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

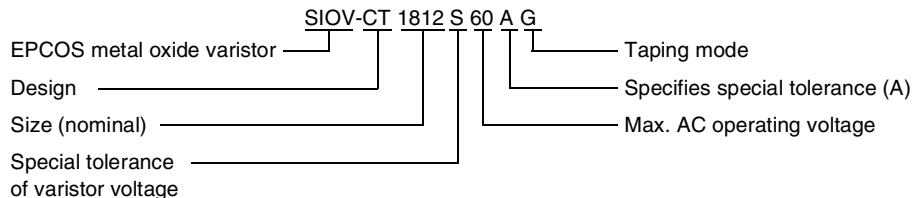
- Suitable for handling surge voltages of up to 2 kV according to the directives of Germany's telecom administration
- Suitable for handling the surge current of the 10/700  $\mu$ s pulse to ITU-T and IEC 61000-4-5
- Matched to line conditions with or without superimposed ringing voltage
- Good solderability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

<sup>1)</sup> 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	$V_{RMS}$ V	$V_{DC}$ V	$i$ (10 ×) 10/700 μs A <sup>1)</sup>	$i_{max}$ 8/20 μs A	$W_{max}$ (2 ms) J	$P_{max}$ 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	$V_V$ (1 mA) V	$\Delta V_V$ (1 mA) %	Max. clamping voltage V		$C_{typ}$ (1 kHz) pF	Derating curve Page	V/I char- acteristic Page
SIOV-			$v$ V	$i$ A <sup>1)</sup>			
CT1812S60AG2	100	+19/-1	200	45	400	243	273
CT1812K75TELEG2	120	± 10	250	45	320	243	273
CT1812S95AG2	150	+20/0	270	45	250	243	273
CT1812K115TELEG2	180	± 10	360	45	200	243	273
CT1812K130TELEG2	205	± 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.



## SMD Varistors

## Telecom – Silver Palladium Termination



## Maximum ratings

Type	Ordering code	$V_{RMS}$ V	$V_{DC}$ V	$i(10 \times)$ 10/700 $\mu$ s A <sup>1)</sup>	$i_{max}$ 8/20 $\mu$ s A	$W_{max}$ (2 ms) J	$P_{max}$ W
SIOV-							
CN1812S60AG2	B72580V0600S172	60	85	45	400	2,2	0,015
CN1812K75TELEG2	B72580V6750K072	75	100	45	400	2,5	0,015
CN1812S95AG2	B72580V0950S172	95	125	45	250	2,8	0,015
CN1812K115TELEG2	B72580V6111K072	115	150	45	250	3,2	0,015
CN1812K130TELEG2	B72580V6131K072	130	170	45	250	3,5	0,015

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

Type	$V_V$ (1 mA) V	$\Delta V_V$ (1 mA) %	Max. clamping voltage V		$C_{typ}$ (1 kHz) pF	Derating curve Page	V/I char- acteristic Page
SIOV-			$v$	$i$ A <sup>1)</sup>			
CN1812S60AG2	100	+19/-1	200	45	400	243	273
CN1812K75TELEG2	120	$\pm 10$	250	45	320	243	273
CN1812S95AG2	150	+20/0	270	45	250	243	273
CN1812K115TELEG2	180	$\pm 10$	360	45	200	243	273
CN1812K130TELEG2	205	$\pm 10$	420	45	200	243	273

## Notes

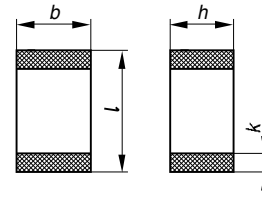
- In addition to the telecom varistors listed above, all varistors of the standard series can be used for telecom applications if the selection criteria are considered.
- These telecom varistors in multilayer technology are not suitable for the operation on AC mains.

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



**SMD Varistors**

**MLV; Telecom Series**



VAR0406-M

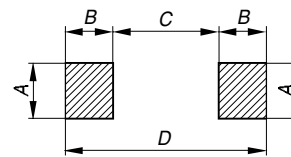
Weight: < 0,2 g

Termination acc. CECC 32101-801

**Dimensions**

Type	<i>l</i> mm	<i>b</i> mm	<i>h</i> mm	<i>k</i> mm
SIOV-CT/CN1812	4,5 ± 0,40	3,20 ± 0,30	2,5 max.	0,25 ... 1,0

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



VAR0391-D

**Recommended solder pad layout**

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

**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.