

### SIOV metal oxide varistors

SMD varistors standard series, CU types

Series/Type: B726\*

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#### **SMD**

#### EPCOS type designation system for SMD varistor standard series

CU	4032	K	275	G2
Construction: CU ≙ Encapsulated chip				
Case sizes: 3225 ≜ 32 x 25 4032 ≜ 40 x 32				
Varistor voltage tolerance: $K \triangleq \pm 10\%$				
Maximum RMS operating voltage (V <sub>RMS</sub> ): 275 $\triangleq$ 275 V				
Taping mode: G2 ≜ Taped, 330-mm reel				



# SMD varistors (CU types) Standard series SMD

#### Construction

- Cylindrical varistor element, encapsulated.
- Encapsulation: thermoplastic, flame-retardant to UL 94 V-0.
- Termination: tinned copper alloy, suitable for lead-free wave and reflow soldering, and compatible with tin/lead solder.

#### **Features**

- Electrical equivalents to leaded types SIOV-S05/S07
- Operating voltage up to 300 V<sub>RMS</sub>
- SMD plastic package
- RoHS-compatible
- Suitable for lead-free soldering
- PSpice models available

#### **Approvals**

- UL
- IEC
- $\,\blacksquare\,$  CSA approved (types with voltages higher than 30  $V_{\text{RMS}})$

#### **Delivery mode**

- Blister tape, 330-mm reel
- Packing unit: 1000 pcs.

#### V/I characteristics and derating curves

V/I and derating curves are attached to the data sheet. The curves are sorted by  $V_{\text{RMS}}$  and then by case size, which is included in the type designation.

#### General technical data

Maximum RMS operating voltage		V <sub>RMS</sub>	11 300	V
Maximum DC operating voltage		$V_{DC}$	14 385	V
Maximum surge current	(8/20 μs) 1 time	i <sub>max</sub>	100 1200	Α
Maximum energy absorption	(2 ms)	$W_{max}$	300 23000	mJ
Maximum clamping voltage	(8/20 μs)	$V_{c,max}$	36 775	V
Operating temperature			-40/+85	°C
Storage temperature			-40/+125	°C





SMD varistors (CU types)

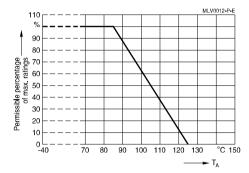
Standard series

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**SMD** 

#### Temperature derating

Climatic category: -40/+85 °C





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#### SMD varistors (CU types)

Maximum ratings (T<sub>A</sub> = 85 °C)

Standard series

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## Electrical specifications and ordering codes

#### $\overline{V}_{DC}$ $\overline{\mathsf{W}}_{\mathsf{max}}$ $\overline{\mathsf{V}}_{\mathsf{RMS}}$ L 1) $P_{max}$ Type Ordering code i<sub>max</sub> (8/20 us) (2 ms) (8/20 us) 1 time 15 times Α V V mJ mW CU3225K11G2 B72650M0110K072 CU4032K11G2 B72660M0110K072 CU3225K14G2 B72650M0140K072 CU4032K14G2 B72660M0140K072 CU3225K17G2 B72650M0170K072 CU4032K17G2 B72660M0170K072 B72650M0200K072 CU3225K20G2 B72660M0200K072 CU4032K20G2 CU3225K25G2 B72650M0250K072 CU4032K25G2 B72660M0250K072 CU3225K30G2 B72650M0300K072 B72660M0300K072 CU4032K30G2 CU3225K35G2 B72650M0350K072 CU4032K35G2 B72660M0350K072 CU3225K40G2 B72650M0400K072 B72660M0400K072 CU4032K40G2 CU3225K50G2 B72650M0500K072 CU4032K50G2 B72660M0500K072 CU3225K60G2 B72650M0600K072 CU4032K60G2 B72660M0600K072 CU3225K75G2 B72650M0750K072 B72660M0750K072 CU4032K75G2 CU3225K95G2 B72650M0950K072 CU4032K95G2 B72660M0950K072 CU3225K115G2 B72650M0111K072 CU4032K115G2 B72660M0111K072 CU3225K130G2 B72650M0131K072 CU4032K130G2 B72660M0131K072 CU3225K140G2 B72650M0141K072 CU4032K140G2 B72660M0141K072 CU3225K150G2 B72650M0151K072 B72660M0151K072 CU4032K150G2 CU3225K175G2 B72650M0171K072

B72660M0171K072

CU4032K175G2

<sup>&</sup>lt;sup>1)</sup> **Note:** Nominal discharge current I<sub>n</sub> according to UL 1449, 4<sup>th</sup> edition.



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Characteristics ( $T_A = 25$  °C)

Type	V <sub>V</sub>	$\Delta V_{V}$	V <sub>c,max</sub>	I <sub>c</sub>	$C_{typ}$
• •	(1 mA)			(8/20 µs)	(1 kHz, 1 V)
	V	%	V	Α	pF
CU3225K11G2	18	±10	36	1.0	1750
CU4032K11G2	18	±10	36	2.5	2750
CU3225K14G2	22	±10	43	1.0	1450
CU4032K14G2	22	±10	43	2.5	2300
CU3225K17G2	27	±10	53	1.0	1200
CU4032K17G2	27	±10	53	2.5	1900
CU3225K20G2	33	±10	65	1.0	980
CU4032K20G2	33	±10	65	2.5	1600
CU3225K25G2	39	±10	77	1.0	850
CU4032K25G2	39	±10	77	2.5	1400
CU3225K30G2	47	±10	93	1.0	720
CU4032K30G2	47	±10	93	2.5	1200
CU3225K35G2	56	±10	110	1.0	620
CU4032K35G2	56	±10	110	2.5	1050
CU3225K40G2	68	±10	135	1.0	520
CU4032K40G2	68	±10	135	2.5	900
CU3225K50G2	82	±10	135	5.0	300
CU4032K50G2	82	±10	135	10.0	530
CU3225K60G2	100	±10	165	5.0	250
CU4032K60G2	100	±10	165	10.0	480
CU3225K75G2	120	±10	200	5.0	210
CU4032K75G2	120	±10	200	10.0	430
CU3225K95G2	150	±10	250	5.0	135
CU4032K95G2	150	±10	250	10.0	260
CU3225K115G2	180	±10	300	5.0	110
CU4032K115G2	180	±10	300	10.0	220
CU3225K130G2	205	±10	340	5.0	100
CU4032K130G2	205	±10	340	10.0	200
CU3225K140G2	220	±10	360	5.0	95
CU4032K140G2	220	±10	360	10.0	180
CU3225K150G2	240	±10	395	5.0	90
CU4032K150G2	240	±10	395	10.0	170
CU3225K175G2	270	±10	455	5.0	75
CU4032K175G2	270	±10	455	10.0	150



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#### Standard series



## Electrical specifications and ordering codes Maximum ratings ( $T_A$ = 85 $^{\circ}$ C)

Туре	Ordering code	$V_{RMS}$	$V_{DC}$	i <sub>max</sub>	I <sub>n</sub> 1)	$W_{max}$	$P_{\text{max}}$
• •				(8/20 µs)	(8/20 µs)	(2 ms)	
				1 time	15 times		
		V	V	Α	Α	mJ	mW
CU3225K230G2	B72650M0231K072	230	300	400	150	7200	100
CU4032K230G2	B72660M0231K072	230	300	1200	500	17000	250
CU3225K250G2	B72650M0251K072	250	320	400	150	8200	100
CU4032K250G2	B72660M0251K072	250	320	1200	500	19000	250
CU3225K275G2	B72650M0271K072	275	350	400	150	8600	100
CU4032K275G2	B72660M0271K072	275	350	1200	500	21000	250
CU3225K300G2	B72650M0301K072	300	385	400	150	9600	100
CU4032K300G2	B72660M0301K072	300	385	1200	500	23000	250

<sup>&</sup>lt;sup>1)</sup> **Note:** Nominal discharge current I<sub>n</sub> according to UL 1449, 4<sup>th</sup> edition.

#### Characteristics (T<sub>A</sub> = 25 °C)

Туре	V <sub>V</sub>	$\Delta V_V$	V <sub>c,max</sub>	Ic	$C_{typ}$
	(1 mA)			(8/20 µs)	(1 kHz, 1 V)
	V	%	V	Α	pF
CU3225K230G2	360	±10	595	5.0	60
CU4032K230G2	360	±10	595	10.0	115
CU3225K250G2	390	±10	650	5.0	55
CU4032K250G2	390	±10	650	10.0	105
CU3225K275G2	430	±10	710	5.0	50
CU4032K275G2	430	±10	710	10.0	95
CU3225K300G2	470	±10	775	5.0	45
CU4032K300G2	470	±10	775	10.0	90



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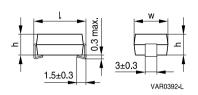


#### SMD varistors (CU types)

Standard series

#### SMD

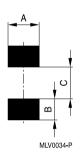
#### **Dimensional drawing**



#### Dimensions in mm

Chip size EIA in mm	$V_{RMS,max}$	1	w	h
3225	11 175	8.0 ±0.3	6.3 ±0.3	3.2 ±0.3
3225	230 300	8.0 ±0.3	6.3 ±0.3	4.5 ±0.3
4032	11 175	10.2 ±0.3	8.0 ±0.3	3.2 ±0.3
4032	230 300	10.2 ±0.3	8.0 ±0.3	4.5 ±0.3

#### Recommended solder pad layout



#### Dimensions in mm

Chip size EIA in mm	Α	В	С
3225	3.50	2.80	4.50
4032	3.50	2.80	6.50



#### SMD varistors (CU types)

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#### **SMD**

#### **Delivery mode**

Mm	=14	· ·	<b>.</b>		-	<u> </u>
Bilister   330	EIA case size	Taping	Reel size	Packing unit	Туре	Ordering code
S225				•		
3225         Blister         330         1000         CU3225K140G2         B72650M0131K072           3225         Blister         330         1000         CU3225K140G2         B72650M0141K072           3225         Blister         330         1000         CU3225K140G2         B72650M0141K072           3225         Blister         330         1000         CU3225K150G2         B72650M0151K072           3225         Blister         330         1000         CU3225K20G2         B72650M0221K072           3225         Blister         330         1000         CU3225K20G2         B72650M0231K072           3225         Blister         330         1000         CU3225K25G2         B72650M0251K072           3225         Blister         330         1000         CU3225K275G2         B72650M0250K072           3225         Blister         330         1000         CU3225K33G2         B72650M0301K072						
3225         Blister         330         1000         CU3225K140G2         B72650M0141K072           3225         Blister         330         1000         CU3225K140G2         B72650M0141K072           3225         Blister         330         1000         CU3225K150G2         B72650M017K072           3225         Blister         330         1000         CU3225K20G2         B72650M020K072           3225         Blister         330         1000         CU3225K230G2         B72650M0220K072           3225         Blister         330         1000         CU3225K250G2         B72650M0221K072           3225         Blister         330         1000         CU3225K250G2         B72650M0220K072           3225         Blister         330         1000         CU3225K25G2         B72650M0250K072           3225         Blister         330         1000         CU3225K30G2         B72650M0350K072           3225         Blister         330         1000         CU3225K30G2         B72650M030N072           3225         Blister         330         1000         CU3225K30G2         B72650M0350K072           3225         Blister         330         1000         CU3225K30G2         B72650M0350K072						
3225         Blister         330         1000         CU3225K14G2         B72650M0140K072           3225         Blister         330         1000         CU3225K150G2         B72650M0151K072           3225         Blister         330         1000         CU3225K175G2         B72650M0171K072           3225         Blister         330         1000         CU3225K20G2         B72650M020K072           3225         Blister         330         1000         CU3225K25G2         B72650M0231K072           3225         Blister         330         1000         CU3225K25G2         B72650M0251K072           3225         Blister         330         1000         CU3225K25G2         B72650M025NK072           3225         Blister         330         1000         CU3225K25G2         B72650M025NK072           3225         Blister         330         1000         CU3225K30G2         B72650M030NK072           3225         Blister         330         1000         CU3225K30G2         B72650M030NK072           3225         Blister         330         1000         CU3225K30G2         B72650M030NK072           3225         Blister         330         1000         CU3225K30G2         B72650M040NK072						
3225         Blister         330         1000         CU3225K150G2         B72650M0151K072           3225         Blister         330         1000         CU3225K175G2         B72650M0171K072           3225         Blister         330         1000         CU3225K20G2         B72650M020K072           3225         Blister         330         1000         CU3225K250G2         B72650M0251K072           3225         Blister         330         1000         CU3225K25G2         B72650M0251K072           3225         Blister         330         1000         CU3225K25G2         B72650M025NK072           3225         Blister         330         1000         CU3225K25G2         B72650M025NK072           3225         Blister         330         1000         CU3225K30G2         B72650M0301K072           3225         Blister         330         1000         CU3225K35G2         B72650M0300K072           3225         Blister         330         1000         CU3225K3G2         B72650M0300K072           3225         Blister         330         1000         CU3225K3G2         B72650M0300K072           3225         Blister         330         1000         CU3225K3G2         B72650M0500K072						
3225         Blister         330         1000         CU3225K175G2         B72650M0171K072           3225         Blister         330         1000         CU3225K20G2         B72650M0231K072           3225         Blister         330         1000         CU3225K25G2         B72650M0251K072           3225         Blister         330         1000         CU3225K25G2         B72650M0251K072           3225         Blister         330         1000         CU3225K25G2         B72650M0250K072           3225         Blister         330         1000         CU3225K300G2         B72650M0250K072           3225         Blister         330         1000         CU3225K300G2         B72650M0301K072           3225         Blister         330         1000         CU3225K30G2         B72650M0300K072           3225         Blister         330         1000         CU3225K30G2         B72650M0300K072           3225         Blister         330         1000         CU3225K36G2         B72650M0300K072           3225         Blister         330         1000         CU3225K40G2         B72650M0500K072           3225         Blister         330         1000         CU3225K60G2         B72650M0750K072						
3225						
3225         Blister         330         1000         CU3225K230G2         B72650M0231K072           3225         Blister         330         1000         CU3225K250G2         B72650M0251K072           3225         Blister         330         1000         CU3225K25G2         B72650M0251K072           3225         Blister         330         1000         CU3225K275G2         B72650M0271K072           3225         Blister         330         1000         CU3225K30G2         B72650M0301K072           3225         Blister         330         1000         CU3225K30G2         B72650M0300K072           3225         Blister         330         1000         CU3225K40G2         B72650M0300K072           3225         Blister         330         1000         CU3225K40G2         B72650M0400K072           3225         Blister         330         1000         CU3225K60G2         B72650M0400K072           3225         Blister         330         1000         CU3225K75G2         B72650M0400K072           3225         Blister         330         1000         CU3225K75G2         B72650M0400K072           3225         Blister         330         1000         CU3225K75G2         B72650M0750K072						
Blister   330   1000   CU3225K250G2   B72650M0251K072						
3225         Blister         330         1000         CU3225K25G2         B72650M0250K072           3225         Blister         330         1000         CU3225K275G2         B72650M0271K072           3225         Blister         330         1000         CU3225K300G2         B72650M0300K072           3225         Blister         330         1000         CU3225K35G2         B72650M0350K072           3225         Blister         330         1000         CU3225K40G2         B72650M0350K072           3225         Blister         330         1000         CU3225K50G2         B72650M0400K072           3225         Blister         330         1000         CU3225K50G2         B72650M0500K072           3225         Blister         330         1000         CU3225K50G2         B72650M0500K072           3225         Blister         330         1000         CU3225K75G2         B72650M0500K072           3225         Blister         330         1000         CU3225K95G2         B72650M0500K072           3225         Blister         330         1000         CU4032K11G2         B72650M0710K072           3225         Blister         330         1000         CU4032K11G2         B72650M0110K072						
3225         Blister         330         1000         CU3225K275G2         B72650M0271K072           3225         Blister         330         1000         CU3225K300G2         B72650M0301K072           3225         Blister         330         1000         CU3225K30G2         B72650M0300K072           3225         Blister         330         1000         CU3225K40G2         B72650M0400K072           3225         Blister         330         1000         CU3225K40G2         B72650M0500K072           3225         Blister         330         1000         CU3225K50G2         B72650M0500K072           3225         Blister         330         1000         CU3225K60G2         B72650M0500K072           3225         Blister         330         1000         CU3225K75G2         B72650M0500K072           3225         Blister         330         1000         CU3225K75G2         B72650M0750K072           3225         Blister         330         1000         CU3225K95G2         B72650M0750K072           3225         Blister         330         1000         CU4032K11G2         B72650M0710K072           4032         Blister         330         1000         CU4032K11G2         B72660M0111K072						
3225         Blister         330         1000         CU3225K300G2         B72650M0301K072           3225         Blister         330         1000         CU3225K30G2         B72650M0300K072           3225         Blister         330         1000         CU3225K35G2         B72650M0300K072           3225         Blister         330         1000         CU3225K40G2         B72650M0400K072           3225         Blister         330         1000         CU3225K50G2         B72650M0500K072           3225         Blister         330         1000         CU3225K75G2         B72650M0600K072           3225         Blister         330         1000         CU3225K75G2         B72650M0750K072           3225         Blister         330         1000         CU3225K95G2         B72650M0750K072           3225         Blister         330         1000         CU4032K11G2         B72660M0110K072           4032         Blister         330         1000         CU4032K115G2         B72660M0171K072           4032         Blister         330         1000         CU4032K115G2         B72660M0131K072           4032         Blister         330         1000         CU4032K14G2         B72660M0171K072		Blister				B72650M0250K072
3225         Blister         330         1000         CU3225K30G2         B72650M0300K072           3225         Blister         330         1000         CU3225K35G2         B72650M0350K072           3225         Blister         330         1000         CU3225K40G2         B72650M0400K072           3225         Blister         330         1000         CU3225K50G2         B72650M0600K072           3225         Blister         330         1000         CU3225K60G2         B72650M0600K072           3225         Blister         330         1000         CU3225K75G2         B72650M0600K072           3225         Blister         330         1000         CU3225K95G2         B72650M0750K072           3225         Blister         330         1000         CU4032K11G2         B72660M0110K072           4032         Blister         330         1000         CU4032K11G2         B72660M0110K072           4032         Blister         330         1000         CU4032K11G2         B72660M0131K072           4032         Blister         330         1000         CU4032K130G2         B72660M0131K072           4032         Blister         330         1000         CU4032K140G2         B72660M0140k072						
3225         Blister         330         1000         CU3225K35G2         B72650M0350K072           3225         Blister         330         1000         CU3225K40G2         B72650M0400K072           3225         Blister         330         1000         CU3225K50G2         B72650M0500K072           3225         Blister         330         1000         CU3225K75G2         B72650M0750K072           3225         Blister         330         1000         CU3225K95G2         B72650M0750K072           3225         Blister         330         1000         CU3225K95G2         B72650M0750K072           3225         Blister         330         1000         CU4032K11G2         B72660M0950K072           3225         Blister         330         1000         CU4032K11G2         B72660M0110K072           4032         Blister         330         1000         CU4032K11G2         B72660M0111K072           4032         Blister         330         1000         CU4032K11G2         B72660M0111K072           4032         Blister         330         1000         CU4032K140G2         B72660M0141K072           4032         Blister         330         1000         CU4032K14G2         B72660M0141K072						
3225         Blister         330         1000         CU3225K40G2         B72650M0400K072           3225         Blister         330         1000         CU3225K50G2         B72650M0500K072           3225         Blister         330         1000         CU3225K60G2         B72650M0600K072           3225         Blister         330         1000         CU3225K75G2         B72650M0750K072           3225         Blister         330         1000         CU3225K95G2         B72650M0750K072           3225         Blister         330         1000         CU4032K11G2         B72650M0110K072           4032         Blister         330         1000         CU4032EX11G2         B72650M0170K072           4032         Blister         330         1000         CU4032EX11G2         B72660M0110K072           4032         Blister         330         1000         CU4032EX13G2         B72660M0171K072           4032         Blister         330         1000         CU4032EX14G2         B72660M0141K072           4032         Blister         330         1000         CU4032EX14G2         B72660M0141K072           4032         Blister         330         1000         CU4032EX15G2         B72660M0171K072 </td <td>3225</td> <td>Blister</td> <td>330</td> <td>1000</td> <td>CU3225K30G2</td> <td>B72650M0300K072</td>	3225	Blister	330	1000	CU3225K30G2	B72650M0300K072
3225         Blister         330         1000         CU3225K50G2         B72650M0500K072           3225         Blister         330         1000         CU3225K60G2         B72650M0600K072           3225         Blister         330         1000         CU3225K75G2         B72650M0750K072           3225         Blister         330         1000         CU4032K11G2         B72650M0950K072           4032         Blister         330         1000         CU4032K11G2         B72650M0170K072           4032         Blister         330         1000         CU4032K11G2         B72660M0111K072           4032         Blister         330         1000         CU4032K115G2         B72660M0111K072           4032         Blister         330         1000         CU4032K140G2         B72660M0111K072           4032         Blister         330         1000         CU4032K140G2         B72660M0141K072           4032         Blister         330         1000         CU4032K150G2         B72660M0151K072           4032         Blister         330         1000         CU4032K17G2         B72660M0171K072           4032         Blister         330         1000         CU4032K20G2         B72660M020K072	3225	Blister		1000	CU3225K35G2	B72650M0350K072
3225         Blister         330         1000         CU3225K60G2         B72650M0600K072           3225         Blister         330         1000         CU3225K75G2         B72650M0750K072           3225         Blister         330         1000         CU3225K95G2         B72650M0950K072           3225         Blister         330         1000         CU4032K11G2         B72660M0110K072           4032         Blister         330         1000         CU4032K11G2         B72660M0111K072           4032         Blister         330         1000         CU4032K115G2         B72660M0111K072           4032         Blister         330         1000         CU4032K130G2         B72660M0131K072           4032         Blister         330         1000         CU4032K140G2         B72660M0141K072           4032         Blister         330         1000         CU4032K14G2         B72660M0141K072           4032         Blister         330         1000         CU4032K150G2         B72660M0151K072           4032         Blister         330         1000         CU4032K17G2         B72660M0171K072           4032         Blister         330         1000         CU4032K20G2         B72660M0231K072 <td>3225</td> <td>Blister</td> <td>330</td> <td>1000</td> <td>CU3225K40G2</td> <td>B72650M0400K072</td>	3225	Blister	330	1000	CU3225K40G2	B72650M0400K072
3225         Blister         330         1000         CU3225K75G2         B72650M0750K072           3225         Blister         330         1000         CU3225K95G2         B72650M0950K072           3225         Blister         330         1000         CU4032K11G2         B72660M0110K072           4032         Blister         330         1000         CU3225K17G2         B72650M0170K072           4032         Blister         330         1000         CU4032K115G2         B72660M0111K072           4032         Blister         330         1000         CU4032K130G2         B72660M0141K072           4032         Blister         330         1000         CU4032K140G2         B72660M0141K072           4032         Blister         330         1000         CU4032K14G2         B72660M0140K072           4032         Blister         330         1000         CU4032K150G2         B72660M0151K072           4032         Blister         330         1000         CU4032K17G2         B72660M0170K072           4032         Blister         330         1000         CU4032K17G2         B72660M0170K072           4032         Blister         330         1000         CU4032K20G2         B72660M020K072	3225	Blister	330	1000	CU3225K50G2	B72650M0500K072
3225         Blister         330         1000         CU3225K95G2         B72650M0950K072           3225         Blister         330         1000         CU4032K11G2         B72660M0110K072           4032         Blister         330         1000         CU3225K17G2         B72650M0170K072           4032         Blister         330         1000         CU4032K115G2         B72660M0111K072           4032         Blister         330         1000         CU4032K130G2         B72660M0131K072           4032         Blister         330         1000         CU4032K140G2         B72660M0141K072           4032         Blister         330         1000         CU4032K14G2         B72660M0141K072           4032         Blister         330         1000         CU4032K150G2         B72660M0151K072           4032         Blister         330         1000         CU4032K17G2         B72660M0171K072           4032         Blister         330         1000         CU4032K17G2         B72660M0171K072           4032         Blister         330         1000         CU4032K20G2         B72660M020K072           4032         Blister         330         1000         CU4032K20G2         B72660M0231K072	3225	Blister	330	1000	CU3225K60G2	B72650M0600K072
3225         Blister         330         1000         CU4032K11G2         B72660M0110K072           4032         Blister         330         1000         CU3225K17G2         B72650M0170K072           4032         Blister         330         1000         CU4032K115G2         B72660M0111K072           4032         Blister         330         1000         CU4032K130G2         B72660M0131K072           4032         Blister         330         1000         CU4032K140G2         B72660M0141K072           4032         Blister         330         1000         CU4032K14G2         B72660M0140K072           4032         Blister         330         1000         CU4032K150G2         B72660M0151K072           4032         Blister         330         1000         CU4032K17G2         B72660M0171K072           4032         Blister         330         1000         CU4032K17G2         B72660M0170K072           4032         Blister         330         1000         CU4032K20G2         B72660M020K072           4032         Blister         330         1000         CU4032K20G2         B72660M0231K072           4032         Blister         330         1000         CU4032K25G2         B72660M0251K072	3225	Blister	330		CU3225K75G2	B72650M0750K072
4032         Blister         330         1000         CU3225K17G2         B72650M0170K072           4032         Blister         330         1000         CU4032K115G2         B72660M0111K072           4032         Blister         330         1000         CU4032K130G2         B72660M0131K072           4032         Blister         330         1000         CU4032K140G2         B72660M0141K072           4032         Blister         330         1000         CU4032K14G2         B72660M0140K072           4032         Blister         330         1000         CU4032K150G2         B72660M0151K072           4032         Blister         330         1000         CU4032K17G2         B72660M0171K072           4032         Blister         330         1000         CU4032K17G2         B72660M0170K072           4032         Blister         330         1000         CU4032K20G2         B72660M0200K072           4032         Blister         330         1000         CU4032K230G2         B72660M0231K072           4032         Blister         330         1000         CU4032K250G2         B72660M0251K072           4032         Blister         330         1000         CU4032K25G2         B72660M0250K072 </td <td>3225</td> <td>Blister</td> <td>330</td> <td>1000</td> <td>CU3225K95G2</td> <td>B72650M0950K072</td>	3225	Blister	330	1000	CU3225K95G2	B72650M0950K072
4032         Blister         330         1000         CU4032K115G2         B72660M0111K072           4032         Blister         330         1000         CU4032K130G2         B72660M0131K072           4032         Blister         330         1000         CU4032K140G2         B72660M0141K072           4032         Blister         330         1000         CU4032K14G2         B72660M0140K072           4032         Blister         330         1000         CU4032K150G2         B72660M0151K072           4032         Blister         330         1000         CU4032K17G2         B72660M0171K072           4032         Blister         330         1000         CU4032K17G2         B72660M0170K072           4032         Blister         330         1000         CU4032K20G2         B72660M0200K072           4032         Blister         330         1000         CU4032K230G2         B72660M0231K072           4032         Blister         330         1000         CU4032K250G2         B72660M0251K072           4032         Blister         330         1000         CU4032K25G2         B72660M0251K072           4032         Blister         330         1000         CU4032K25G2         B72660M0251K072 </td <td>3225</td> <td>Blister</td> <td>330</td> <td>1000</td> <td>CU4032K11G2</td> <td>B72660M0110K072</td>	3225	Blister	330	1000	CU4032K11G2	B72660M0110K072
4032         Blister         330         1000         CU4032K130G2         B72660M0131K072           4032         Blister         330         1000         CU4032K140G2         B72660M0141K072           4032         Blister         330         1000         CU4032K14G2         B72660M0140K072           4032         Blister         330         1000         CU4032K150G2         B72660M0151K072           4032         Blister         330         1000         CU4032K17G2         B72660M0171K072           4032         Blister         330         1000         CU4032K17G2         B72660M0170K072           4032         Blister         330         1000         CU4032K20G2         B72660M0200K072           4032         Blister         330         1000         CU4032K230G2         B72660M0201K072           4032         Blister         330         1000         CU4032K250G2         B72660M0251K072           4032         Blister         330         1000         CU4032K25G2         B72660M0251K072           4032         Blister         330         1000         CU4032K25G2         B72660M0271K072           4032         Blister         330         1000         CU4032K30G2         B72660M0301K072 <td>4032</td> <td>Blister</td> <td>330</td> <td>1000</td> <td>CU3225K17G2</td> <td>B72650M0170K072</td>	4032	Blister	330	1000	CU3225K17G2	B72650M0170K072
4032         Blister         330         1000         CU4032K140G2         B72660M0141K072           4032         Blister         330         1000         CU4032K14G2         B72660M0141K072           4032         Blister         330         1000         CU4032K150G2         B72660M0151K072           4032         Blister         330         1000         CU4032K175G2         B72660M0171K072           4032         Blister         330         1000         CU4032K17G2         B72660M0170K072           4032         Blister         330         1000         CU4032K20G2         B72660M0200K072           4032         Blister         330         1000         CU4032K230G2         B72660M0201K072           4032         Blister         330         1000         CU4032K250G2         B72660M0251K072           4032         Blister         330         1000         CU4032K25G2         B72660M0251K072           4032         Blister         330         1000         CU4032K25G2         B72660M0251K072           4032         Blister         330         1000         CU4032K25G2         B72660M0271K072           4032         Blister         330         1000         CU4032K30G2         B72660M0301K072 <td>4032</td> <td>Blister</td> <td>330</td> <td>1000</td> <td>CU4032K115G2</td> <td>B72660M0111K072</td>	4032	Blister	330	1000	CU4032K115G2	B72660M0111K072
4032         Blister         330         1000         CU4032K14G2         B72660M0140K072           4032         Blister         330         1000         CU4032K150G2         B72660M0151K072           4032         Blister         330         1000         CU4032K175G2         B72660M0171K072           4032         Blister         330         1000         CU4032K17G2         B72660M0170K072           4032         Blister         330         1000         CU4032K20G2         B72660M0200K072           4032         Blister         330         1000         CU4032K230G2         B72660M0231K072           4032         Blister         330         1000         CU4032K250G2         B72660M0251K072           4032         Blister         330         1000         CU4032K25G2         B72660M0251K072           4032         Blister         330         1000         CU4032K25G2         B72660M0251K072           4032         Blister         330         1000         CU4032K25G2         B72660M0251K072           4032         Blister         330         1000         CU4032K30G2         B72660M0301K072           4032         Blister         330         1000         CU4032K30G2         B72660M0350K072 <td>4032</td> <td>Blister</td> <td>330</td> <td>1000</td> <td>CU4032K130G2</td> <td>B72660M0131K072</td>	4032	Blister	330	1000	CU4032K130G2	B72660M0131K072
4032         Blister         330         1000         CU4032K150G2         B72660M0151K072           4032         Blister         330         1000         CU4032K175G2         B72660M0171K072           4032         Blister         330         1000         CU4032K17G2         B72660M0170K072           4032         Blister         330         1000         CU4032K20G2         B72660M0200K072           4032         Blister         330         1000         CU4032K230G2         B72660M0231K072           4032         Blister         330         1000         CU4032K250G2         B72660M0251K072           4032         Blister         330         1000         CU4032K25G2         B72660M0250K072           4032         Blister         330         1000         CU4032K25G2         B72660M0250K072           4032         Blister         330         1000         CU4032K30G2         B72660M0301K072           4032         Blister         330         1000         CU4032K30G2         B72660M0300K072           4032         Blister         330         1000         CU4032K35G2         B72660M0350K072           4032         Blister         330         1000         CU4032K50G2         B72660M0500K072 <td>4032</td> <td>Blister</td> <td>330</td> <td>1000</td> <td>CU4032K140G2</td> <td>B72660M0141K072</td>	4032	Blister	330	1000	CU4032K140G2	B72660M0141K072
4032         Blister         330         1000         CU4032K175G2         B72660M0171K072           4032         Blister         330         1000         CU4032K17G2         B72660M0170K072           4032         Blister         330         1000         CU4032K20G2         B72660M0200K072           4032         Blister         330         1000         CU4032K230G2         B72660M0231K072           4032         Blister         330         1000         CU4032K250G2         B72660M0251K072           4032         Blister         330         1000         CU4032K25G2         B72660M0250K072           4032         Blister         330         1000         CU4032K25G2         B72660M0250K072           4032         Blister         330         1000         CU4032K25G2         B72660M0271K072           4032         Blister         330         1000         CU4032K30G2         B72660M0301K072           4032         Blister         330         1000         CU4032K30G2         B72660M0350K072           4032         Blister         330         1000         CU4032K35G2         B72660M0400K072           4032         Blister         330         1000         CU4032K50G2         B72660M0500K072	4032	Blister	330	1000	CU4032K14G2	B72660M0140K072
4032         Blister         330         1000         CU4032K17G2         B72660M0170K072           4032         Blister         330         1000         CU4032K20G2         B72660M0200K072           4032         Blister         330         1000         CU4032K230G2         B72660M0231K072           4032         Blister         330         1000         CU4032K250G2         B72660M0251K072           4032         Blister         330         1000         CU4032K25G2         B72660M0250K072           4032         Blister         330         1000         CU4032K275G2         B72660M0271K072           4032         Blister         330         1000         CU4032K30G2         B72660M0301K072           4032         Blister         330         1000         CU4032K30G2         B72660M0300K072           4032         Blister         330         1000         CU4032K35G2         B72660M0350K072           4032         Blister         330         1000         CU4032K40G2         B72660M0400K072           4032         Blister         330         1000         CU4032K50G2         B72660M0500K072           4032         Blister         330         1000         CU4032K50G2         B72660M0600K072	4032	Blister	330	1000	CU4032K150G2	B72660M0151K072
4032         Blister         330         1000         CU4032K20G2         B72660M0200K072           4032         Blister         330         1000         CU4032K230G2         B72660M0201K072           4032         Blister         330         1000         CU4032K250G2         B72660M0251K072           4032         Blister         330         1000         CU4032K25G2         B72660M0250K072           4032         Blister         330         1000         CU4032K275G2         B72660M0271K072           4032         Blister         330         1000         CU4032K30G2         B72660M0301K072           4032         Blister         330         1000         CU4032K30G2         B72660M0300K072           4032         Blister         330         1000         CU4032K35G2         B72660M0350K072           4032         Blister         330         1000         CU4032K40G2         B72660M0400K072           4032         Blister         330         1000         CU4032K50G2         B72660M0500K072           4032         Blister         330         1000         CU4032K50G2         B72660M0600K072           4032         Blister         330         1000         CU4032K50G2         B72660M0600K072	4032	Blister	330	1000	CU4032K175G2	B72660M0171K072
4032         Blister         330         1000         CU4032K230G2         B72660M0231K072           4032         Blister         330         1000         CU4032K250G2         B72660M0251K072           4032         Blister         330         1000         CU4032K25G2         B72660M0250K072           4032         Blister         330         1000         CU4032K275G2         B72660M0271K072           4032         Blister         330         1000         CU4032K30G2         B72660M0301K072           4032         Blister         330         1000         CU4032K30G2         B72660M0300K072           4032         Blister         330         1000         CU4032K35G2         B72660M0350K072           4032         Blister         330         1000         CU4032K40G2         B72660M0400K072           4032         Blister         330         1000         CU4032K50G2         B72660M0500K072           4032         Blister         330         1000         CU4032K50G2         B72660M0600K072           4032         Blister         330         1000         CU4032K50G2         B72660M0600K072           4032         Blister         330         1000         CU4032K50G2         B72660M0750K072	4032	Blister	330	1000	CU4032K17G2	B72660M0170K072
4032         Blister         330         1000         CU4032K250G2         B72660M0251K072           4032         Blister         330         1000         CU4032K25G2         B72660M0250K072           4032         Blister         330         1000         CU4032K275G2         B72660M0271K072           4032         Blister         330         1000         CU4032K30G2         B72660M0301K072           4032         Blister         330         1000         CU4032K30G2         B72660M0300K072           4032         Blister         330         1000         CU4032K35G2         B72660M0350K072           4032         Blister         330         1000         CU4032K40G2         B72660M0400K072           4032         Blister         330         1000         CU4032K50G2         B72660M0500K072           4032         Blister         330         1000         CU4032K50G2         B72660M0600K072           4032         Blister         330         1000         CU4032K50G2         B72660M0600K072           4032         Blister         330         1000         CU4032K50G2         B72660M0750K072	4032	Blister	330	1000	CU4032K20G2	B72660M0200K072
4032         Blister         330         1000         CU4032K25G2         B72660M0250K072           4032         Blister         330         1000         CU4032K275G2         B72660M0271K072           4032         Blister         330         1000         CU4032K300G2         B72660M0301K072           4032         Blister         330         1000         CU4032K30G2         B72660M0300K072           4032         Blister         330         1000         CU4032K35G2         B72660M0350K072           4032         Blister         330         1000         CU4032K40G2         B72660M0400K072           4032         Blister         330         1000         CU4032K50G2         B72660M0500K072           4032         Blister         330         1000         CU4032K60G2         B72660M0600K072           4032         Blister         330         1000         CU4032K75G2         B72660M0750K072	4032	Blister	330	1000	CU4032K230G2	B72660M0231K072
4032         Blister         330         1000         CU4032K275G2         B72660M0271K072           4032         Blister         330         1000         CU4032K300G2         B72660M0301K072           4032         Blister         330         1000         CU4032K30G2         B72660M0300K072           4032         Blister         330         1000         CU4032K35G2         B72660M0350K072           4032         Blister         330         1000         CU4032K40G2         B72660M0400K072           4032         Blister         330         1000         CU4032K50G2         B72660M0500K072           4032         Blister         330         1000         CU4032K60G2         B72660M0600K072           4032         Blister         330         1000         CU4032K75G2         B72660M0750K072	4032	Blister	330	1000	CU4032K250G2	B72660M0251K072
4032         Blister         330         1000         CU4032K300G2         B72660M0301K072           4032         Blister         330         1000         CU4032K30G2         B72660M0300K072           4032         Blister         330         1000         CU4032K35G2         B72660M0350K072           4032         Blister         330         1000         CU4032K40G2         B72660M0400K072           4032         Blister         330         1000         CU4032K50G2         B72660M0500K072           4032         Blister         330         1000         CU4032K60G2         B72660M0600K072           4032         Blister         330         1000         CU4032K75G2         B72660M0750K072	4032	Blister	330	1000	CU4032K25G2	B72660M0250K072
4032         Blister         330         1000         CU4032K30G2         B72660M0300K072           4032         Blister         330         1000         CU4032K35G2         B72660M0350K072           4032         Blister         330         1000         CU4032K40G2         B72660M0400K072           4032         Blister         330         1000         CU4032K50G2         B72660M0500K072           4032         Blister         330         1000         CU4032K60G2         B72660M0600K072           4032         Blister         330         1000         CU4032K75G2         B72660M0750K072	4032	Blister	330	1000	CU4032K275G2	B72660M0271K072
4032         Blister         330         1000         CU4032K35G2         B72660M0350K072           4032         Blister         330         1000         CU4032K40G2         B72660M0400K072           4032         Blister         330         1000         CU4032K50G2         B72660M0500K072           4032         Blister         330         1000         CU4032K60G2         B72660M0600K072           4032         Blister         330         1000         CU4032K75G2         B72660M0750K072	4032	Blister	330	1000	CU4032K300G2	B72660M0301K072
4032         Blister         330         1000         CU4032K40G2         B72660M0400K072           4032         Blister         330         1000         CU4032K50G2         B72660M0500K072           4032         Blister         330         1000         CU4032K60G2         B72660M0600K072           4032         Blister         330         1000         CU4032K75G2         B72660M0750K072	4032	Blister	330	1000	CU4032K30G2	B72660M0300K072
4032         Blister         330         1000         CU4032K50G2         B72660M0500K072           4032         Blister         330         1000         CU4032K60G2         B72660M0600K072           4032         Blister         330         1000         CU4032K75G2         B72660M0750K072	4032	Blister	330	1000	CU4032K35G2	B72660M0350K072
4032         Blister         330         1000         CU4032K60G2         B72660M0600K072           4032         Blister         330         1000         CU4032K75G2         B72660M0750K072	4032	Blister	330	1000	CU4032K40G2	B72660M0400K072
4032 Blister 330 1000 CU4032K75G2 B72660M0750K072	4032	Blister	330	1000	CU4032K50G2	B72660M0500K072
	4032	Blister	330	1000	CU4032K60G2	B72660M0600K072
	4032	Blister	330	1000	CU4032K75G2	B72660M0750K072
4032 Blister 330 1000 CU4032K95G2 B72660M0950K072	4032	Blister	330	1000	CU4032K95G2	B72660M0950K072





**SMD** 

#### Reliability data

#### Note: For CU varistors mounted on PCB by reflow soldering.

Test	Test methods/conditions	Requirement
Varistor voltage	The voltage between two terminals with the specified measuring current applied is called $V_{\nu}$ (1 mA <sub>DC</sub> @ 0.2 2 s).	To meet the specified value
Clamping voltage	The maximum voltage between two terminals with the specified standard impulse current (8/20 µs) applied.	To meet the specified value
Endurance at upper category temperature	1000 h at UCT After having continuously applied the maximum allowable AC voltage at UCT $\pm 2$ °C for 1000 h, the specimen shall be stored at room temperature and normal humidity for 1 to 2 h. Thereafter, the change of $V_{\rm V}$ shall be measured.	IΔV/V (1 mA)I ≤10%
Surge current derating, 8/20 μs	10 surge currents (8/20 μs), unipolar, interval 30 s, amplitude corresponding to derating curve for 10 impulses at 20 μs	I∆V/V (1 mA)I ≤10% (measured in direction of surge current) No visible damage
Surge current derating, 2 ms	10 surge currents (2 ms), unipolar, interval 120 s, amplitude corresponding to derating curve for 10 impulses at 2 ms	I∆V/V (1 mA)I ≤10% (measured in direction of surge current) No visible damage





#### **SMD**

Test	Test methods/conditions	Requirement
Climatic sequence	The specimen shall be subjected to: a) dry heat at UCT, 16 h, IEC 60068-2-2, test Ba b) damp heat, 1st cycle: 55 °C, 93% r. H., 24 h, IEC 60068-2-30, test Db c) cold, LCT, 2 h, IEC 60068-2-1, test Aa d) damp heat, additional 5 cycles: 55 °C/25 °C, 93% r. H., 24 h/cycle, IEC 60068-2-30, test Db.	$I$ ΔV/V (1 mA) $I$ ≤10% $R_{ins}$ ≥100 M $Ω$
	Then the specimen shall be stored at room temperature and normal humidity for 1 to 2 h. Thereafter, the change of $V_V$ shall be measured. Thereafter, insulation resistance $R_{\text{ins}}$ shall be measured at $V=500$ $V$ .	
Rapid change of temperature	IEC 60068-2-14, test Na, LCT/UCT, dwell time 30 min, 5 cycles	l∆V/V (1 mA)l ≤5% No visible damage
Damp heat, steady state	IEC 60068-2-78, test Ca	ΔV/V (1 mA)  ≤10%
	The specimen shall be subjected to $40\pm2$ °C, 90 to 95% r. H. for 56 days without load / with 10% of the maximum continuous DC operating voltage V <sub>DC</sub> . Then stored at room temperature and normal humidity for 1 to 2 h. Thereafter, the change of V <sub>V</sub> shall be measured. Thereafter, insulation resistance R <sub>ins</sub> shall be measured at V = 500 V (insulated varistors only).	R <sub>ins</sub> ≥100 MΩ
Solderability	IEC 60068-2-58, test Td1, method 1 - solder bath, Sn96, 5Ag3Cu0.5 T = 245 ±3 °C t = 2 s	The terminations shall be uniformly tinned for soldering test.
Resistance to soldering heat	IEC 60068-2-58, test Td2, method 1 - solder bath, Sn96, 5Ag3Cu0.5 T = 260 ±5 °C d = 10 ±1 s	IΔV/V (1 mA)I ≤5% No visible damage





#### **SMD**

Test	Test methods/conditions	Requirement
Robustness of termination	Substrate bending test IEC 60068-2-21, test Ue1 Deflection = 2 mm t = 60 s Shear test	IΔV/V (1 mA)I ≤10% No visible damage IΔV/V (1 mA)I ≤10%
	IEC 60068-2-21, test Ue3 Force = 5 N t = 10 ±1 s	No visible damage
Vibration	IEC 60068-2-6, test Fc, method B4 Frequency range: 10 55 Hz Amplitude: 0.75 mm or 98 m/s² Duration: 6 h (3 · 2 h) Pulse: sine wave	I∆V/V (1 mA)I ≤5% No visible damage
	After repeatedly applying a single harmonic vibration according to the table above. The change of $V_{\rm V}$ shall be measured and the specimen shall be visually examined.	
Bump	IEC 60068-2-27, test Ea Pulse duration: 6 ms Max. acceleration: 400 m/s² Number: 6 x 5000 shocks Pulse shape: half sine	I∆V/V (1 mA)I ≤5% No visible damage
Fire hazard	IEC 60695-11-5 (needle flame test) Severity: vertical 10 s	5 s max.

#### Note:

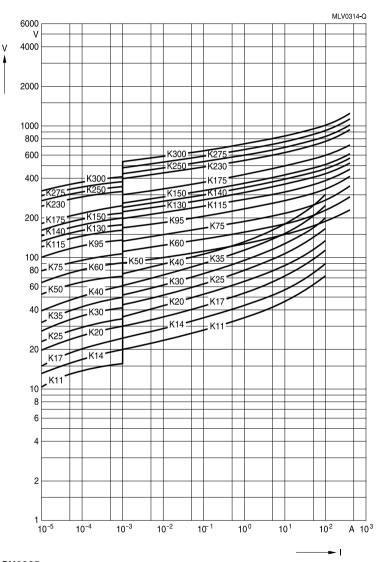
UCT = Upper category temperature LCT = Lower category temperature

 $R_{ins}$  = Insulation resistance





### V/I characteristics

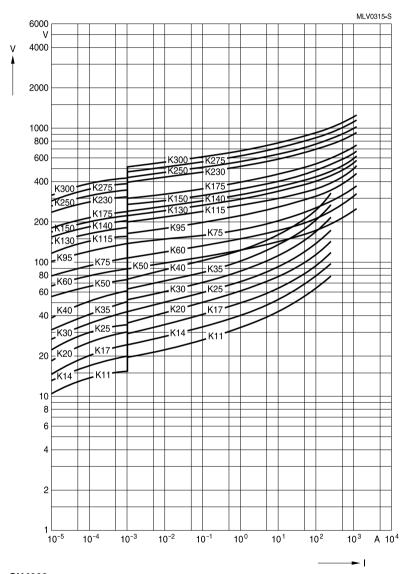


CU3225 ...



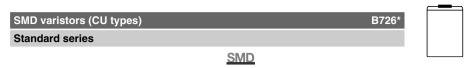


#### V/I characteristics



CU4032 ...

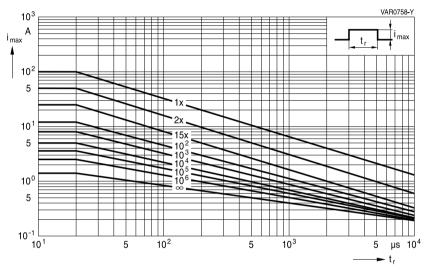




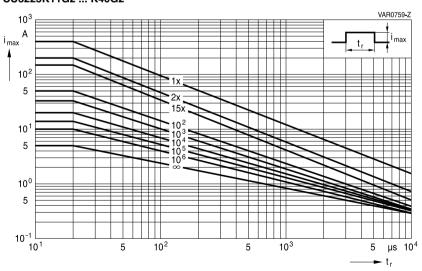
#### Derating curves for CU3225...

Maximum surge current  $I_{surge,max} = f(t_r, pulse train)$ 

For explanation of the derating curves refer to "General technical information", chapter 2.7.2



#### CU3225K11G2 ... K40G2



#### CU3225K50G2 ... K300G2

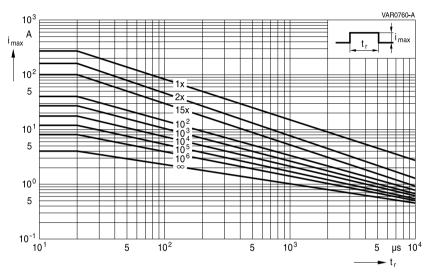




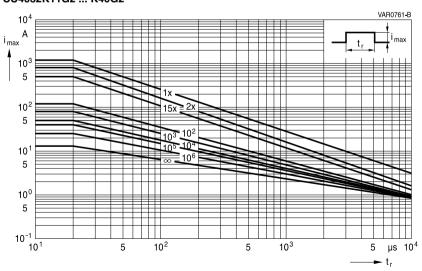
## Derating curves for CU4032...

Maximum surge current I<sub>surge,max</sub> = f (t<sub>r</sub>, pulse train)

For explanation of the derating curves refer to "General technical information", chapter 2.7.2



#### CU4032K11G2 ... K40G2



#### CU4032K50G2 ... K300G2



#### SMD varistors (CU types)

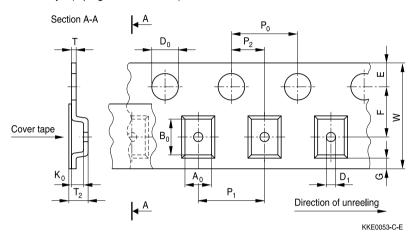
#### Standard series

## B726\*



### Taping and packing for CU varistors

Blister tape (taping to IEC 60286-3)



**SMD** 

#### Dimensions in mm

	Symbol	Case size		Tolerance
		3225	4032	
Compartment width	$A_0$	7.0	8.6	±0.20
Compartment length	$B_0$	8.70	10.6	±0.20
Thickness cover tape	$K_0$	5.00	)	max.
Overall thickness	$T_2$	5.50	)	max.
Thickness tape	Т	0.30	)	max.
Sprocket hole diameter	D <sub>0</sub>	1.50		+0.10/-0
Sprocket hole diameter	$D_1$	1.50		min.
Sprocket hole pitch	P <sub>0</sub>	4.00	)	±0.10 <sup>1)</sup>
Distance center hole to center compartment	$P_2$	2.00	)	±0.05
Pitch of the component compartments	$P_1$	12.00		±0.10
Tape width	W	16.0	)	±0.30
Distance edge to center of hole	E	1.75	i	±0.10
Distnace center hole to center compartment	F	7.50		±0.05
Distance compartment to edge	G	0.75	;	min.

<sup>1) ≤0.2</sup> mm over 10 sprocket holes





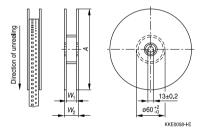
#### **SMD**

#### Additional taping information

Reel material	Polystyrol (PS)
Tape material	Polystyrol (PS) or Polycarbonat (PC), PVC or PET
Tape break force	min. 10 N
Top cover tape strength	min. 10 N
Tape peel angle	Angle between top cover tape and the direction of feed during peel off: 165° to 180°
Cavity play	Each part rests in the cavity so that the angle between the part and cavity center line is no more than 20°

#### Reel packing

#### Packing material: Plastic

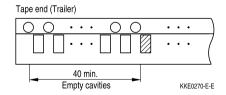


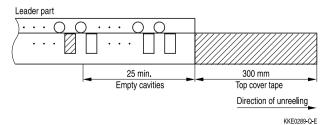
#### Dimensions in mm

		Dimension	Tolerance
Reel diameter	Α	330	+0/-2.0
Reel width (inside)	$W_1$	16.4	+1.5/-0
Reel width (outside)	$W_2$	22.4	max.

#### Packing unit: 1000 pcs./ reel

#### Leader, trailer







# SMD varistors (CU types) Standard series SMD

#### Cautions and warnings

#### General

- EPCOS metal oxide varistors are designed for specific applications and should not be used for purposes not identified in our specifications, application notes and data books unless otherwise agreed with EPCOS during the design-in-phase.
- Ensure suitability of SIOVs through reliability testing during the design-in phase. SIOVs should be evaluated taking into consideration worst-case conditions.
- 3. For applications of SIOVs in line-to-ground circuits based on various international and local standards there are restrictions existing or additional safety measures required.

#### Storage

- 1. Store SIOVs only in original packaging. Do not open the package prior to processing.
- 2. Recommended storage conditions in original packaging:

Storage temperature: -25 °C ... +45 °C,

Relative humidity: <75% annual average,

<95% on maximum 30 days a year.

Dew precipitation: is to be avoided.

- 3. Avoid contamination of an SIOV's during storage, handling and processing.
- Avoid storage of SIOVs in harmful environments that can affect the function during long-term operation (examples given under operation precautions).
- The SIOV type series should be soldered after shipment from EPCOS within the time specified:

SIOV-S, -Q, -LS, -B, -SNF 24 months ETFV/ T series. -CU 12 months.

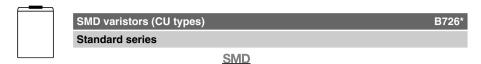
#### Handling

- 1. SIOVs must not be dropped.
- 2. Components must not be touched with bare hands. Gloves are recommended.
- Avoid contamination of the surface of SIOV electrodes during handling, be careful of the sharp edge of SIOV electrodes.

#### Soldering (where applicable)

- 1. Use rosin-type flux or non-activated flux.
- Insufficient preheating may cause ceramic cracks.
- 3. Rapid cooling by dipping in solvent is not recommended.
- 4. Complete removal of flux is recommended.
- 5. Temperatures of all preheat stages and the solder bath must be strictly controlled especially for T series (T14 and T20).





#### Mounting

- 1. Potting, sealing or adhesive compounds can produce chemical reactions in the SIOV ceramic that will degrade the component's electrical characteristics.
- 2. Overloading SIOVs may result in ruptured packages and expulsion of hot materials. For this reason SIOVs should be physically shielded from adjacent components.

#### Operation

- 1. Use SIOVs only within the specified temperature operating range.
- 2. Use SIOVs only within the specified voltage and current ranges.
- Environmental conditions must not harm SIOVs. Use SIOVs only in normal atmospheric conditions. Avoid use in deoxidizing gases (chlorine gas, hydrogen sulfide gas, ammonia gas, sulfuric acid gas etc), corrosive agents, humid or salty conditions. Contact with any liquids and solvents should be prevented.

#### Display of ordering codes for EPCOS products

The ordering code for one and the same EPCOS product can be represented differently in data sheets, data books, other publications, on the EPCOS website, or in order-related documents such as shipping notes, order confirmations and product labels. The varying representations of the ordering codes are due to different processes employed and do not affect the specifications of the respective products. Detailed information can be found on the Internet under www.epcos.com/orderingcodes





#### SMD

#### Symbols and terms

Symbol	Term
С	Capacitance
$C_{typ}$	Typical capacitance
i	Current
i <sub>c</sub>	Current at which V <sub>c, max</sub> is measured
I <sub>leak</sub>	Leakage current
i <sub>max</sub>	Maximum surge current (also termed peak current)
I <sub>max</sub>	Maximum discharge current
In	Nominal discharge current to UL 1449
LCT	Lower category temperature
$L_{typ}$	Typical inductance
$P_{max}$	Maximum average power dissipation
R <sub>ins</sub>	Insulation resistance
$R_{min}$	Minimum resistance
$T_A$	Ambient temperature
t <sub>r</sub>	Duration of equivalent rectangular wave
UCT	Upper category temperature
V	Voltage
$V_{clamp}$	Clamping voltage
V <sub>c, max</sub>	Maximum clamping voltage at specified current i <sub>c</sub>
$V_{DC}$	DC operating voltage
$V_{\text{jump}}$	Maximum jump start voltage
$V_{max}$	Maximum voltage
$V_{op}$	Operating voltage
$V_{RMS}$	AC operating voltage, root-mean-square value
$V_{RMS,\;op,\;max}$	Root-mean-square value of max. DC operating voltage incl. ripple current
$V_{\text{surge}}$	Super imposed surge voltage
$V_{v}$	Varistor voltage
$\Delta V_{V}$	Tolerance of varistor voltage
$W_{LD}$	Maximum load dump
$W_{max}$	Maximum energy absorption
<i>e</i>	Lead spacing

All dimensions are given in mm.

The commas used in numerical values denote decimal points.



#### Important notes

The following applies to all products named in this publication:

- 1. Some parts of this publication contain statements about the suitability of our products for certain areas of application. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application. As a rule we are either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether a product with the properties described in the product specification is suitable for use in a particular customer application.
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