SMD Varistors

Monolithic; Automotive Series

SMD

Construction

- Cylindrical varistor element, encapsulated
- Encapsulation: thermoplast, flame-retardant to UL 94 V-0
- Termination: tinned copper alloy

Features

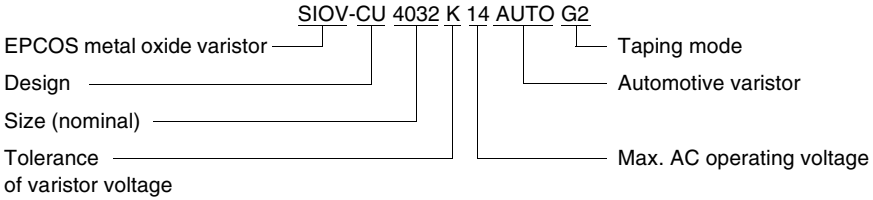
- High energy absorption, particularly in case of load dump
- Jump-start strength
- Stable protection level, minimum leakage current
- High resistance to cyclic temperature stress
- Good solderability
- Low inductance
- PSpice models

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 LCT UCT Damp heat, steady state (93 % r.h., 40 °C)	40/85/56 – 40 °C + 85 °C 56 days	in accordance with IEC 60068-1 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	≥ 2,5 kV_{RMS}	in accordance with CECC 42 000
Insulation resistance	≥ 1,0 GΩ	in accordance with CECC 42 000
Response time	< 10 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 60068-2-20

Note: Contact EPCOS for consultancy if solvents on water-base are used for cleaning.

Maximum ratings (T_A = 85 °C)

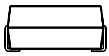
Type	Ordering code	V_{RMS}	V_{DC}	i_{max} 8/20 µs	W_{max} (2 ms)	P_{max}	W_{LD} (10x)
SIOV-		V	V	A	J	W	J
12-V supply systems							
CU3225K14AUTOG2	B72650M1140K072	14	16	100	0,4	0,01	6
CU4032K14AUTOG2	B72660M1140K072	14	16	250	0,9	0,02	12
CU3225K17AUTOG2	B72650M1170K072	17	20	100	0,5	0,01	6
CU4032K17AUTOG2	B72660M1170K072	17	20	250	1,1	0,02	12
24-V supply systems							
CU3225K30AUTOG2	B72650M1300K072	30	34	100	0,9	0,01	6
CU4032K30AUTOG2	B72660M1300K072	30	34	250	2,0	0,02	12

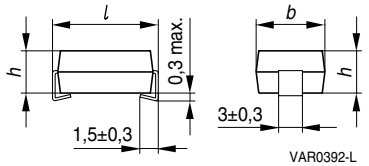
Characteristics (T_A = 25 °C)

Type	V_{Jump} (5 min)	V_v (1 mA)	ΔV_v (1 mA)	Max. clamping voltage		C_{typ} (1 kHz)	Derating curve	*V/I* characteristic
				v	*i*			
SIOV-	V	V	%	V	A	nF	Page	Page
12-V supply systems								
CU3225K14AUTOG2	25	22	± 10	43	1,0	1,4	246	274
CU4032K14AUTOG2	25	22	± 10	43	2,5	2,3	246	275
CU3225K17AUTOG2	30	27	± 10	53	1,0	1,2	246	274
CU4032K17AUTOG2	30	27	± 10	53	2,5	1,9	246	275
24-V supply systems								
CU3225K30AUTOG2	50	47	± 10	93	1,0	0,6	246	274
CU4032K30AUTOG2	50	47	± 10	93	2,5	1,1	246	275

Notes

- If the maximum loads specified for load dump and jump start are fully utilized, subsequent polarity reversal of the AUTO varistors is inadmissible.
- If the load remains under the maximum ratings, polarity reversal may be admissible. Contact EPCOS for consultancy on this kind of problem.
- Load dump or jump start can decrease the varistor voltage in load direction by max. 15 %.
- Load dump: min. time of energy input 40 ms, interval 60 s.



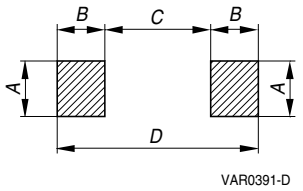


Weight:
CU3225: approx. 0,5 g
CU4032: approx. 0,8 g

Dimensions

Type	*l* mm	*b* mm	*h* mm
SIOV-CU3225K14…30	8,0 ± 0,3	6,3 ± 0,3	3,2 ± 0,3
SIOV-CU4032K14…30	10,2 ± 0,3	8,0 ± 0,3	3,2 ± 0,3

Termination: tinned copper alloy



Recommended solder pad layout

Type	*A* mm	*B* mm	*C* mm	*D* mm
SIOV-CU3225K14…30	3,5	2,8	4,5	10,1
SIOV-CU4032K14…30	3,5	2,8	6,5	12,1

Herausgegeben von EPCOS AG
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Published by EPCOS AG
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