

SMD Varistors

Monolithic; Automotive Series



Construction

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

Features

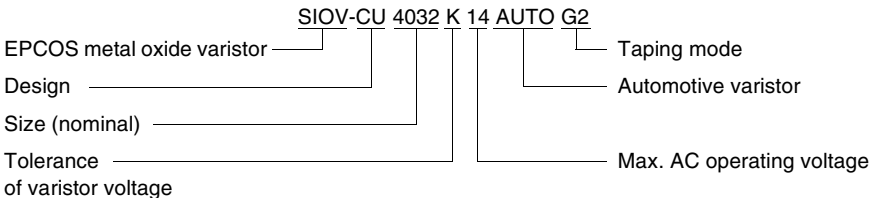
- High energy absorption, particularly in case of load dump
- Jump-start strength
- Stable protection level, minimum leakage current
- High resistance to cyclic temperature stress
- Good solderability
- Low inductance
- PSpice models

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

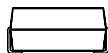
Detailed description of coding system on page 39, chapter "General Technical Information"



General technical data

Climatic category	40/85/56	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	- 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.



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

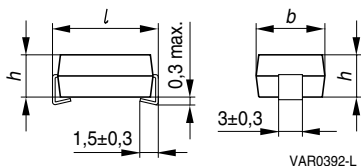
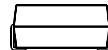
Type	Ordering code	V_{RMS}	V_{DC}	i_{max} 8/20 μ s	W_{max} (2 ms)	P_{max}	W_{LD} (10x)
		V	V	A	J	W	J
12-V supply systems							
CU3225K14AUTOG2	B72650M1140K072	14	16	100	0,4	0,01	6
CU4032K14AUTOG2	B72660M1140K072	14	16	250	0,9	0,02	12
CU3225K17AUTOG2	B72650M1170K072	17	20	100	0,5	0,01	6
CU4032K17AUTOG2	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 ($T_A = 25\text{ °C}$)

Type	V_{Jump} (5 min)	V_V (1 mA)	ΔV_V (1 mA)	Max. clamping voltage		C_{typ} (1 kHz)	Derating curve	V/I char- acteristic
				v	i			
	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:

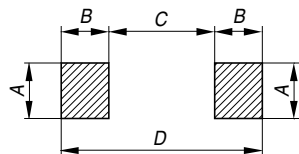
CU3225: approx. 0,5 g

CU4032: approx. 0,8 g

Dimensions

Type	<i>l</i> mm	<i>b</i> mm	<i>h</i> mm
SIOV-CU3225K14...30	$8,0 \pm 0,3$	$6,3 \pm 0,3$	$3,2 \pm 0,3$
SIOV-CU4032K14...30	$10,2 \pm 0,3$	$8,0 \pm 0,3$	$3,2 \pm 0,3$

Termination: tinned copper alloy



VAR0391-D

Recommended solder pad layout

Type	<i>A</i> mm	<i>B</i> mm	<i>C</i> mm	<i>D</i> mm
SIOV-CU3225K14...30	3,5	2,8	4,5	10,1
SIOV-CU4032K14...30	3,5	2,8	6,5	12,1

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