

SMD Varistors

MLV; Arrays

SMD

Construction

- Multilayer technology
- Multiple elements in one component
- Termination: silver platinum
- No plastic or epoxy encapsulation assures better than UL 94 V-0 flammability rating

Features

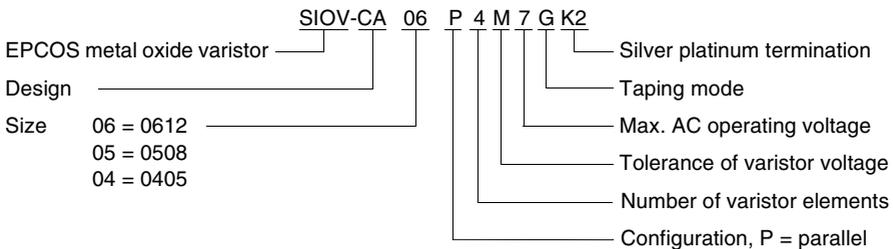
- Sizes 0612, 0508, 0405
- Surge currents up to 30 A
- Operating temperature up to 85 °C
- Good solderability for reflow process
- Suitable for ESD protection
- Bidirectional clamping

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

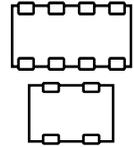
Detailed description of coding system on page 39, chapter "General Technical Information"



General technical data

| | | |
|---|-------------------|-----------------------------------|
| Climatic category | 30/85/56 | in accordance with IEC 60068-1 |
| LCT | - 30 °C | |
| UCT | + 85 °C | |
| Damp heat, steady state (93 % r.h., 40 °C) | 56 days | in accordance with IEC 60068-2-3 |
| Operating temperature | - 30 ... + 85 °C | in accordance with CECC 42 000 |
| Storage temperature ¹⁾ | - 40 ... + 125 °C | |
| Response time | < 0,5 ns | |
| Solderability | 235 °C, 2 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

Arrays – Silver Platinum Termination ($T_A = 85\text{ °C}$)

Maximum ratings

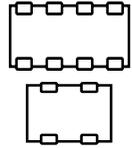
| Type | Ordering code | V_{RMS} V | V_{DC} V | i_{max} 8/20 μ s A | W_{max} (2 ms) J | P_{max} W |
|-----------------------------|-----------------|----------------|---------------|--------------------------------|--------------------------|----------------|
| SIOV- | | | | | | |
| CA06P4M7GK2 | B72728A0070M062 | 7 | 8,5 | 30 | 0,075 | 0,003 |
| CA06P4S17ALCGK2 | B72728A2170S162 | 17 | 22 | 30 | 0,075 | 0,003 |
| CA05P4S17ALCGK2 | B72718A2170S162 | 17 | 22 | 10 | 0,01 | 0,003 |
| CA04P2S17TLCG ²⁾ | B72766A2170S160 | 17 | 22 | 10 | 0,01 | 0,003 |

Characteristics

| Type | V_V (1 mA) V | ΔV_V (1 mA) % | Max. clamping voltage | | C_{typ} (1 kHz) pF | L_{typ} nH | Derating curve Page | V/I char- acteristic Page |
|-----------------------------|----------------------|-----------------------------|-----------------------|----------|----------------------------|-----------------|---------------------------|---------------------------------|
| | | | v V | i A | | | | |
| CA06P4M7GK2 | 12,5 | ± 20 | 30 | 1,0 | 200 | 1,0 | 238 | 265 |
| CA06P4S17ALCGK2 | 32,5 | ± 23 | 50 | 1,0 | < 75 ¹⁾ | 1,0 | 238 | 265 |
| CA05P4S17ALCGK2 | 32,5 | ± 23 | 50 | 1,0 | < 75 ¹⁾ | 1,0 | 237 | 265 |
| CA04P2S17TLCG ²⁾ | 32,5 | ± 23 | 50 | 1,0 | < 75 ¹⁾ | 1,0 | 237 | 265 |

1) C_{typ} (1 MHz)

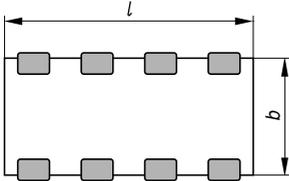
2) Nickel barrier termination



SMD Varistors

MLV Arrays CA06P4 and CA05P4

Dimensions

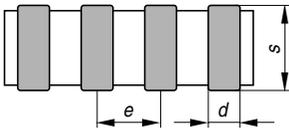


CA06P4

$l = 3,2 \pm 0,2$
 $b = 1,6 \pm 0,15$
 $s = 0,9 \text{ max.}$
 $d = 0,4 \pm 0,15$
 $e = 0,8 \pm 0,15$
 Coplanarity < 0,1

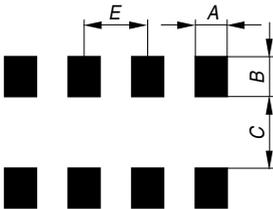
CA05P4

$l = 2,0 \pm 0,2$
 $b = 1,25 \pm 0,15$
 $s = 0,9 \text{ max.}$
 $d = 0,3 \pm 0,10$
 $e = 0,5 \pm 0,10$
 Coplanarity < 0,1



VAR0399-P

Recommended solder pad layout



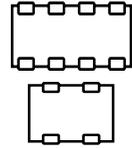
CA06P4

$A = 0,5 \text{ mm}$
 $B = 0,7 \text{ mm}$
 $C = 1,2 \text{ mm}$
 $E = 0,76 \text{ mm}$

CA05P4

$A = 0,35 \text{ mm}$
 $B = 0,9 \text{ mm}$
 $C = 0,4 \text{ mm}$
 $E = 0,5 \text{ mm}$

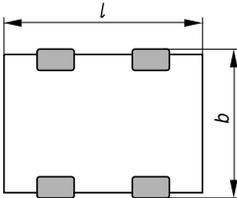
VAR0407-U



SMD Varistors

MLV Array CA04P2

Dimensions



CA04P2

$$l = 1,37 \pm 0,15$$

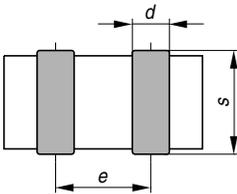
$$b = 1,0 \pm 0,15$$

$$s = 0,7 \text{ max.}$$

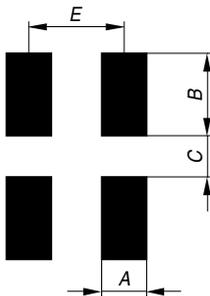
$$d = 0,36 \pm 0,1$$

$$e_{\text{Ref}} = 0,64$$

Coplanarity < 0,1



Recommended solder pad layout



CA04P2

$$A = 0,4 \text{ mm}$$

$$B = 0,55 \text{ mm}$$

$$C = 0,28 \text{ mm}$$

$$D = 0,64 \text{ mm}$$

VAR0514-J

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