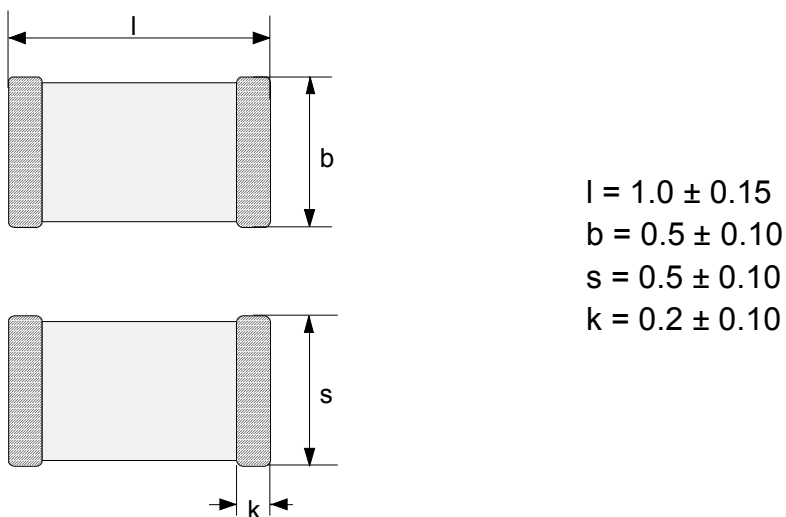


## Designation system

- CT = Chip with three-layer-termination (Ag/Ni/Sn)  
 0402 = Dimensions of the device **04 x 02** (length x width in 1/100 inch)  
 L = Tolerance of the varistor voltage ( $\pm 20\%$ )  
 4 = Maximum operating voltage (RMS voltage)  
 G = Taped version (cardboard tape, 7" reel, 10000 pieces/reel)

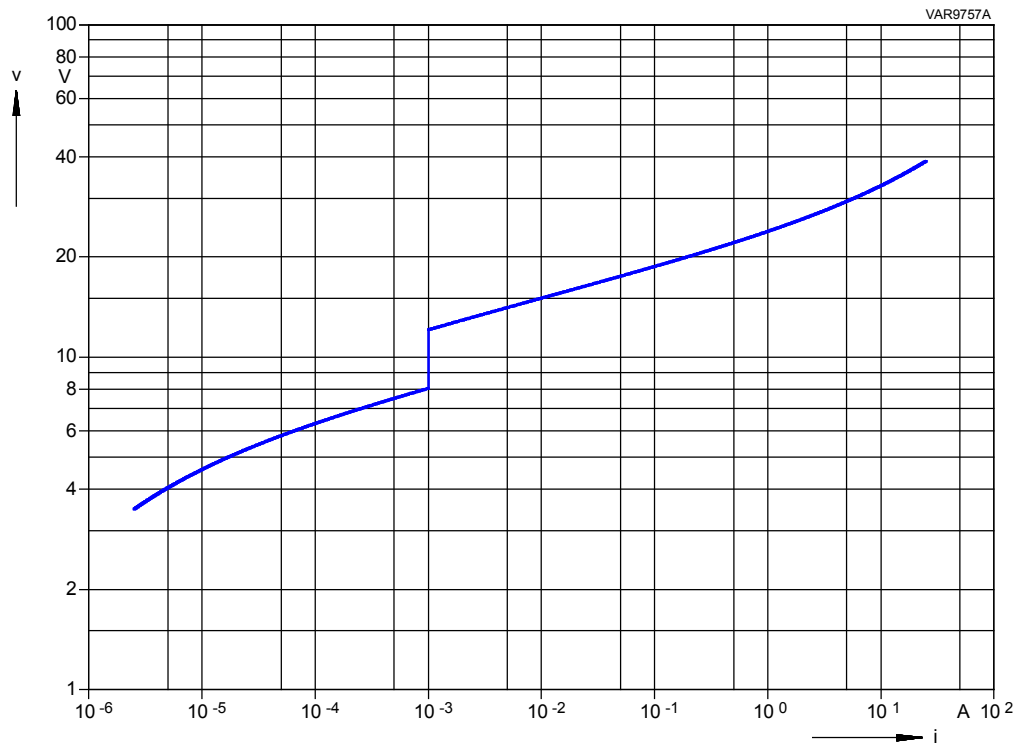
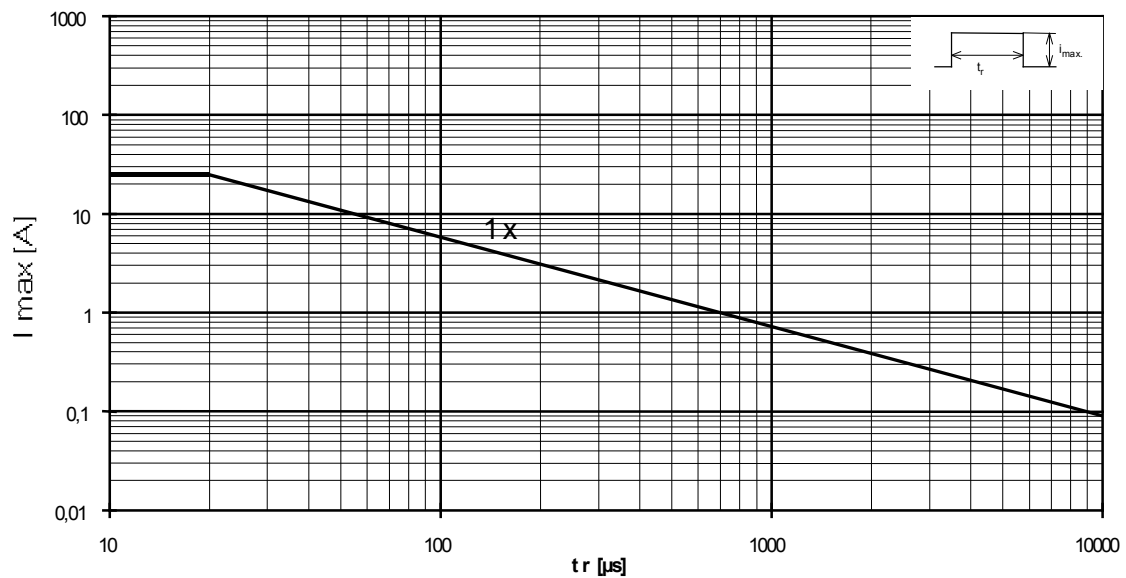
## Figure



(all dimensions in mm)

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**Metal Oxide Varistors**
**CT0402M4G**
**SMD multilayer varistor with Ni-barrier termination**
**B72590T0040M060**
**V-I-characteristic**

**Derating field**




## Metal Oxide Varistors

CT0402M4G

SMD multilayer varistor with Ni-barrier termination

B72590T0040M060

## Electrical data

Maximum operating voltage

RMS voltage

 $V_{\text{RMS}} = 4 \text{ V}$ 

DC voltage

 $V_{\text{DC}} = 5.5 \text{ V}$ 

Varistor voltage (@ 1 mA)

 $V_V = 8 \text{ up to } 12 \text{ V}$ 

Clamping voltage (@ 1 A, typical)

 $V_C = 19 \text{ V}$ 

Maximum clamping voltage (@ 1 A)

 $V_C = 24 \text{ V}$ 

Maximum average power dissipation

 $P_{\text{max}} = 3 \text{ mW}$ Maximum surge current (8/20  $\mu\text{s}$ ) $I_{\text{max}} = 1 \times 25 \text{ A}$ 

Maximum energy absorption (2 ms)

 $E_{\text{max}} = 1 \times 17 \text{ mJ}$ 

Capacitance (@ 1 kHz, 1 V, 25 °C, typical)

 $C = 200 \text{ pF}$ 

Response time

 $< 0.5 \text{ ns}$ 

Operating temperature

 $-40 \dots +85 \text{ }^\circ\text{C}$ 

Storage temperature (mounted parts)

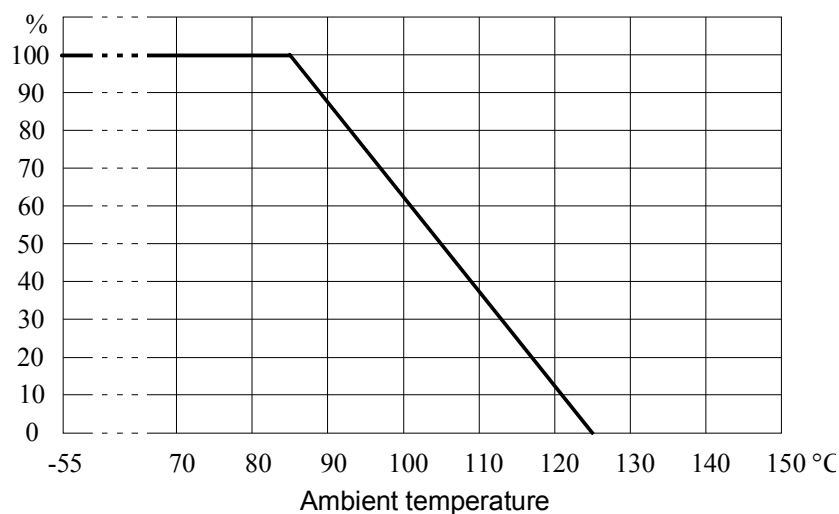
 $-40 \dots +125 \text{ }^\circ\text{C}$ 

Termination material

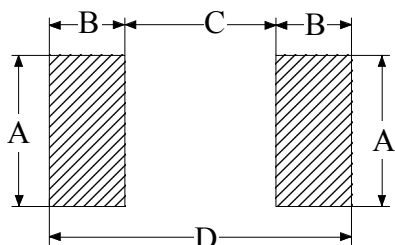
Ag/Ni/Sn

(thickness not specified, adjusted to fulfil wettability specification according to IEC 60068-2-58)

Max. current, energy and average power dissipation  
depending on ambient temperature



## Recommended geometry of solder pad



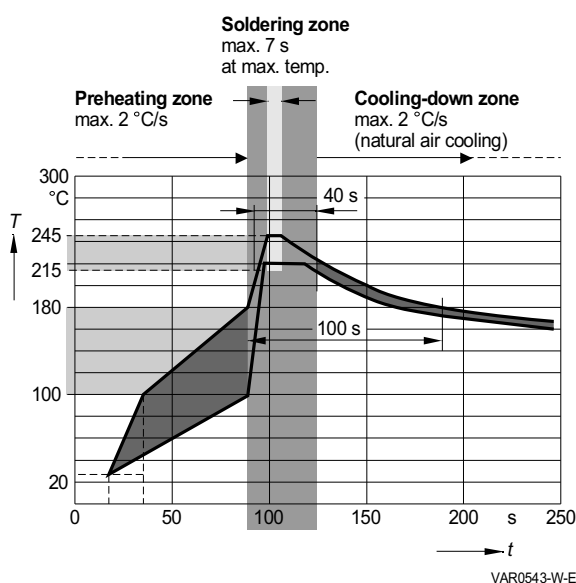
A = 0.6 mm

B = 0.6 mm

C = 0.5 mm

E = 1.7 mm

## Recommended soldering temperature profile



This component should be soldered within 12 months after delivery from EPCOS. They should be left in their original packings to avoid soldering problems due to oxidized terminals.

Storage temperature: -25 to 45 °C

Relative humidity: < 75% annual average, < 95% on maximum 30 days in a year.

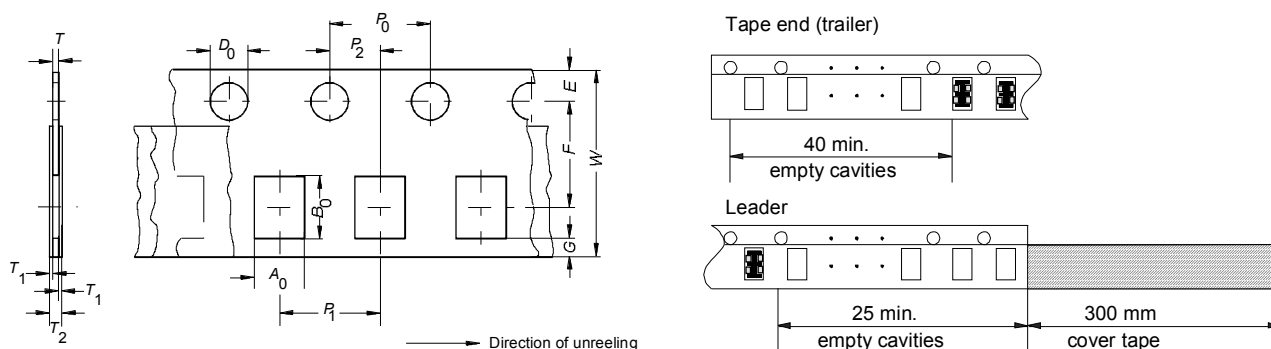
The usage of mild non-activated fluxes for soldering is recommended, as well as proper cleaning of the PCB.

The components are suited for Pb-free soldering.

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## Taping according to IEC 60286-3

**Tape material:** cardboard



### Dimensions and tolerances:

Definition	Symbol	Dimension [mm]	Tolerance [mm]
Compartment width	$A_0$	0.6	$\pm 0.2$
Compartment length	$B_0$	1.15	$\pm 0.2$
Sprocket hole diameter	$D_0$	1.5	$+0.1/-0$
Sprocket hole pitch	$P_0$	4.0	$\pm 0.1^1$
Distance center hole to center compartment	$P_2$	2.0	$\pm 0.05$
Pitch of the component compartments	$P_1$	2.0	$\pm 0.1$
Tape width	$W$	8.0	$\pm 0.3$
Distance edge to center of hole	$E$	1.75	$\pm 0.1$
Distance center hole to center compartment	$F$	3.5	$\pm 0.05$
Distance compartment to edge	$G$	0.75	min.
Overall thickness	$T_2$	0.6	max.
Thickness of cardboard tape	$T$	0.3	max.

<sup>1)</sup>  $\leq \pm 0.2$  mm over any 10 pitches

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## Metal Oxide Varistors

CT0402M4G

## SMD multilayer varistor with Ni-barrier termination

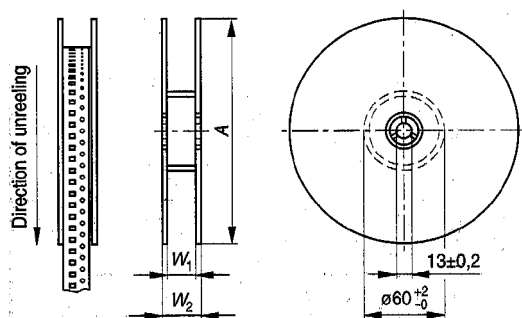
B72590T0040M060

## Packing

Reel material: plastic

Packing unit: 10000 pcs./reel

## Reel dimensions:



Definition	Symbol	Dimension [mm]	Tolerance [mm]
Reel diameter	A	180	+0/ -3
Reel width (inside)	$W_1$	8.4	+1.5/ -0
Reel width (outside)	$W_2$	14.4	max.

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