

**Metal Oxide Varistors****CN2220S14BAUTOG****SMD Multilayer Varistor with AgPd Termination****B72540V1140S262**

Data Sheet

**Designation system:**CN = Chip Not molded2220 = Dimensions of the device 22x20 (length x width in 1/100 inch)S...B = Special tolerance B of the varistor voltage

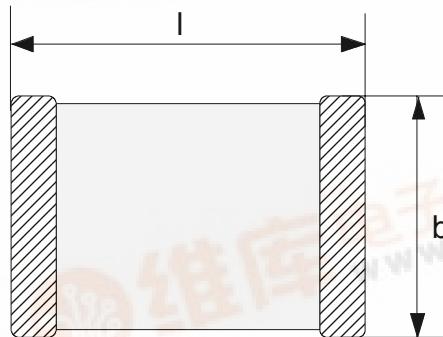
14 = Max. RMS operating voltage

AUTO = Suited for AUTOmotive application

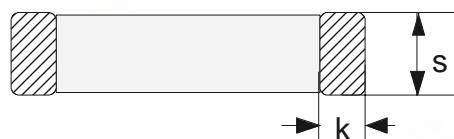
G = Taped version, blister tape, 7" reel (1500 pcs/reel)

Part Dimensions:

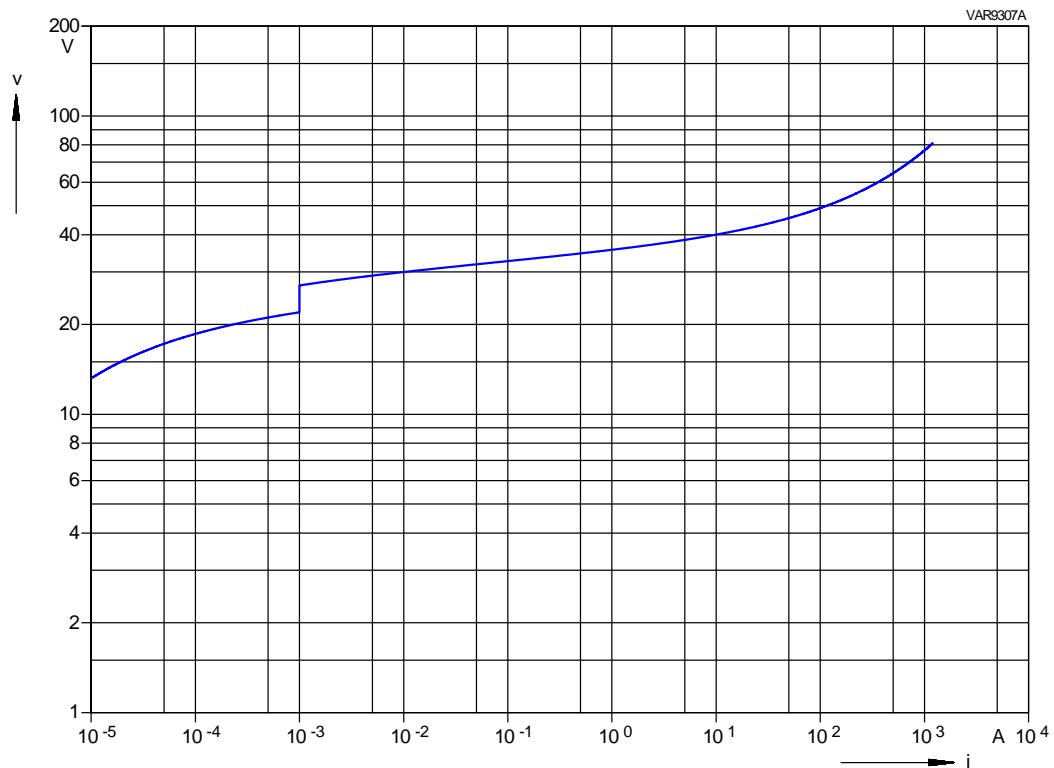
(All dimensions in mm)



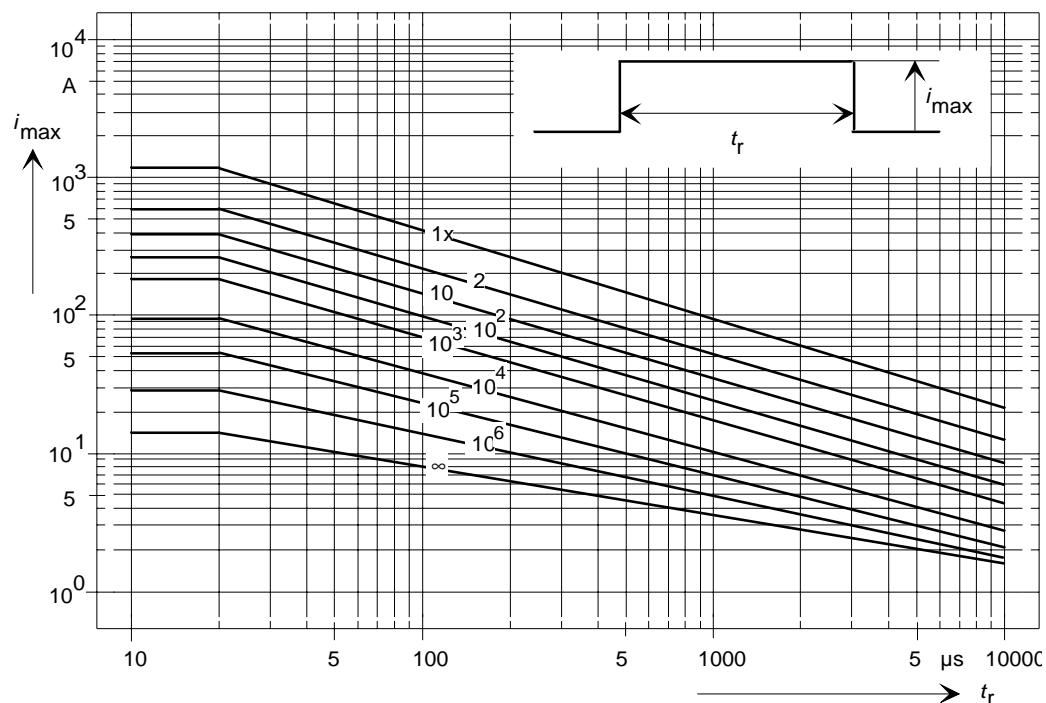
$l = 5,7 \pm 0,4$
 $b = 5,0 \pm 0,4$
 $s = 1,3$ max.
 $k = 0,25 - 1,0$



V-I-Characteristic



Derating Field



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Electrical Data

Max. operating voltage

RMS voltage

$V_{eff} = 14 \text{ V}$

DC voltage

$V_{DC} = 16 \text{ V}$

Varistor voltage (@ 1 mA)

$V_v = 22 - 27 \text{ V}$

Max. clamping voltage (@ 10 A)

$V_C = 40 \text{ V}$

Max. average power dissipation

$P_{max} = 30 \text{ mW}$

Max. surge current (8/20 μs)

$I_{max} = 1 \times 1200 \text{ A}$

Max. energy absorption (2 ms)

$E_{max} = 1 \times 5.8 \text{ J}$

Load Dump

$E_{max} = 10 \times 12 \text{ J}$

Jump Start

24.5 V, 5 min.

Capacitance (@ 1kHz, 1 V), typically

9.5 nF

Response time

< 0.5 ns

Operating temperature

-55 ... +125 °C

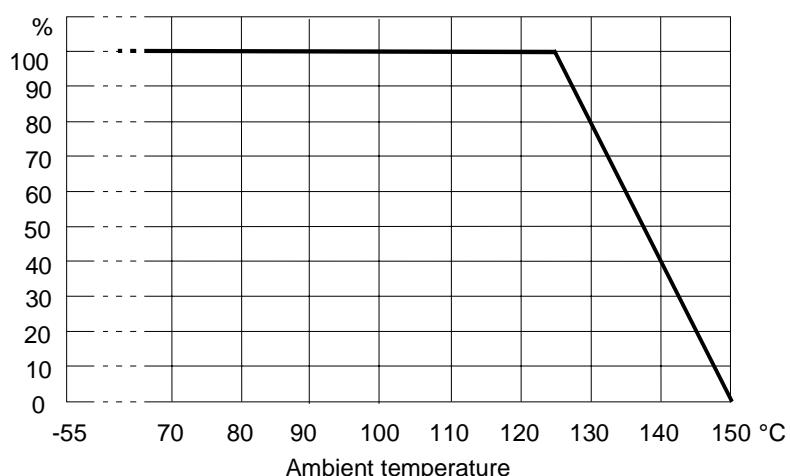
Storage temperature (mounted parts)

-55 ... +150 °C

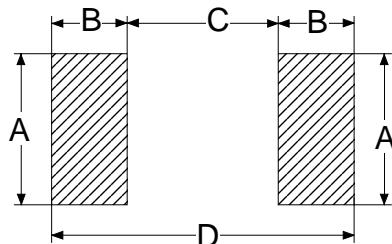
Termination material

Ag/Pd

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



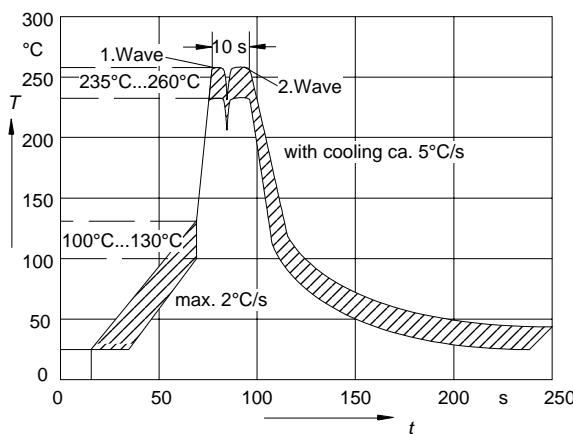
Recommended solder pad layout



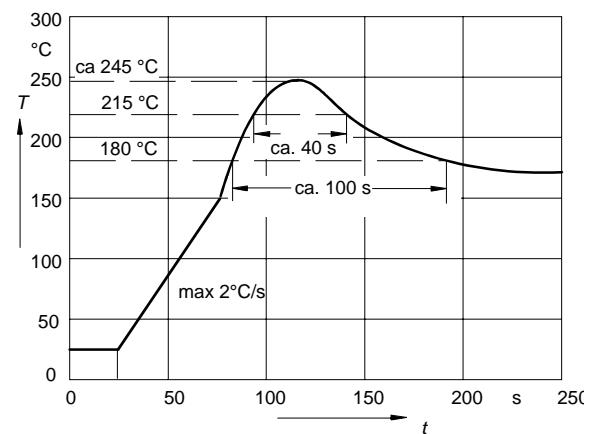
A = 5,5 mm
 B = 1,5 mm
 C = 4,2 mm
 D = 7,2 mm

Recommended soldering temperature profiles

Wave soldering



IR reflow soldering



The components should be soldered within 6 months after delivery from EPCOS. The parts are to be left in the original packing in order to avoid any soldering problems caused by oxidized terminals.

Storage temperature: -25 to 45°C

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

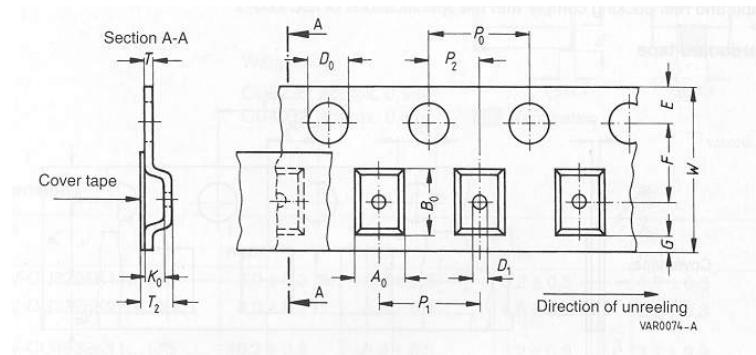
The usage of mild, non activated fluxes for soldering is recommended, as well as a proper cleaning of the PCB.

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Taping and Packaging:

Taping: Tape and reel packing according to IEC 60286-3

Tape material: Blister



Dimensions and tolerances:

Definition	Symbol	Dimension [mm]	Tolerance [mm]
Compartment width	A ₀	5.1	± 0.2
Compartment length	B ₀	6.0	± 0.2
Compartment height	K ₀	1.3	max.
Sprocket hole diameter	D ₀	1.5	+0.1 /-0
Compartment hole diameter	D ₁	1.5	min.
Sprocket hole pitch	P ₀	4.0	± 0.1 ¹⁾
Distance center hole to center compartment	P ₂	2.0	± 0.05
Pitch of the component compartments	P ₁	8.0	± 0.1
Tape width	W	12.0	± 0.3
Distance edge to center of hole	E	1.75	± 0.1
Distance center hole to center compartment	F	5.5	± 0.05
Distance compartment to edge	G	0.75	min.
Overall thickness	T ₂	2.5	max.
Thickness tape	T	0.3	max.

¹⁾ $\leq \pm 0.2$ mm over any 10 pitches

Package: 12 mm tape:

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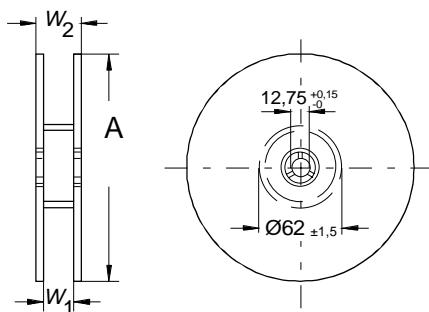
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Packing:

Packing material: Plastic



Reel Dimensions:

Definition	Symbol	Dimension [mm]	Tolerance [mm]
Reel diameter	A	180	-2
Reel width (inside)	W ₁	12.4	+1.5 /-0
Reel width (outside)	W ₂	18.4	max.

Packing unit: 1500 pcs / reel

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