



Metal Oxide Varistors

CN2220S14BAUTOG

SMD Multilayer Varistor with AgPd Termination

B72540V1140S262

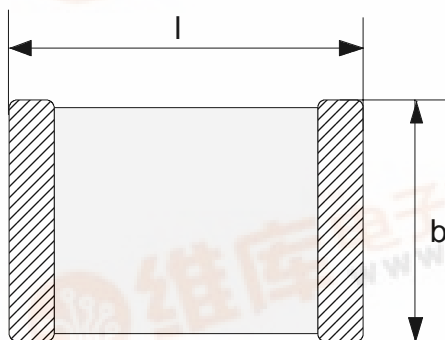
Data Sheet

Designation system:

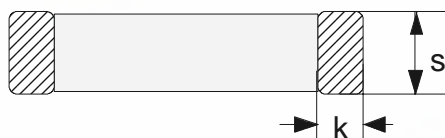
- CN = **C**hip **N**ot molded
 2220 = Dimensions of the device **22x20** (length x width in 1/100 inch)
 S...B = **S**pecial tolerance **B** of the varistor voltage
 14 = Max. RMS operating voltage
 AUTO = Suited for **AUTO**motive application
 G = Taped version, blister tape, 7" reel (1500 pcs/reel)

Part Dimensions:

(All dimensions in mm)



$$\begin{aligned}
 l &= 5,7 \pm 0,4 \\
 b &= 5,0 \pm 0,4 \\
 s &= 1,3 \text{ max.} \\
 k &= 0,25 - 1,0
 \end{aligned}$$





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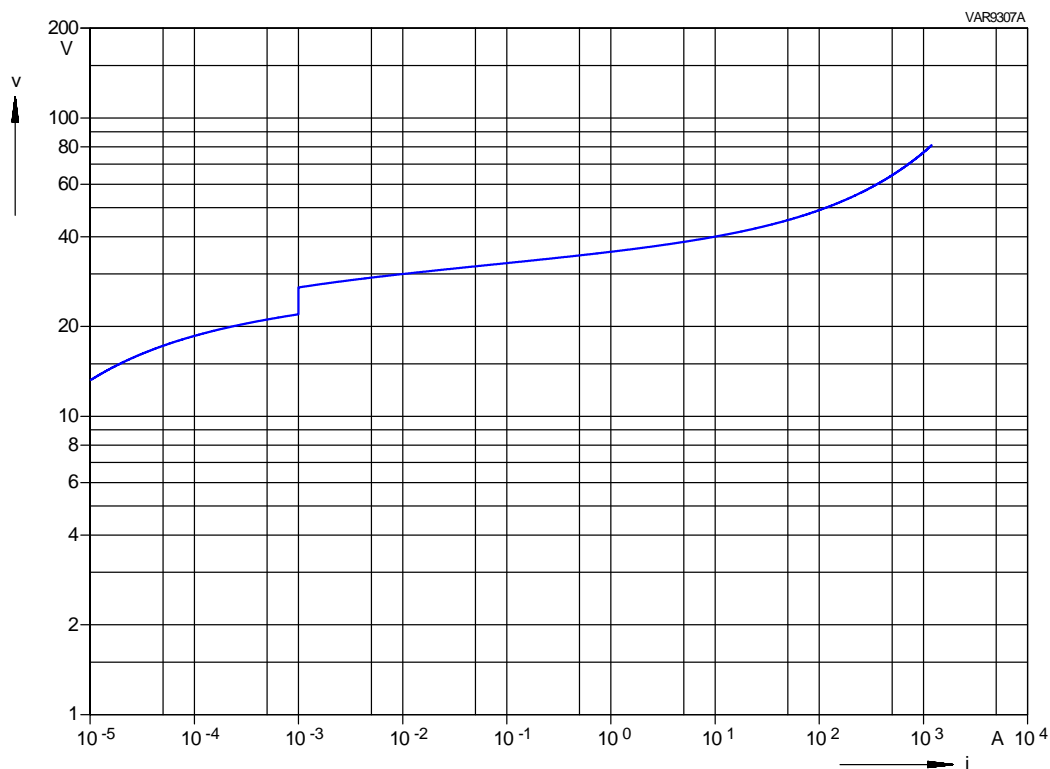
CN220S14BAUTOG

SMD Multilayer Varistor with AgPd Termination

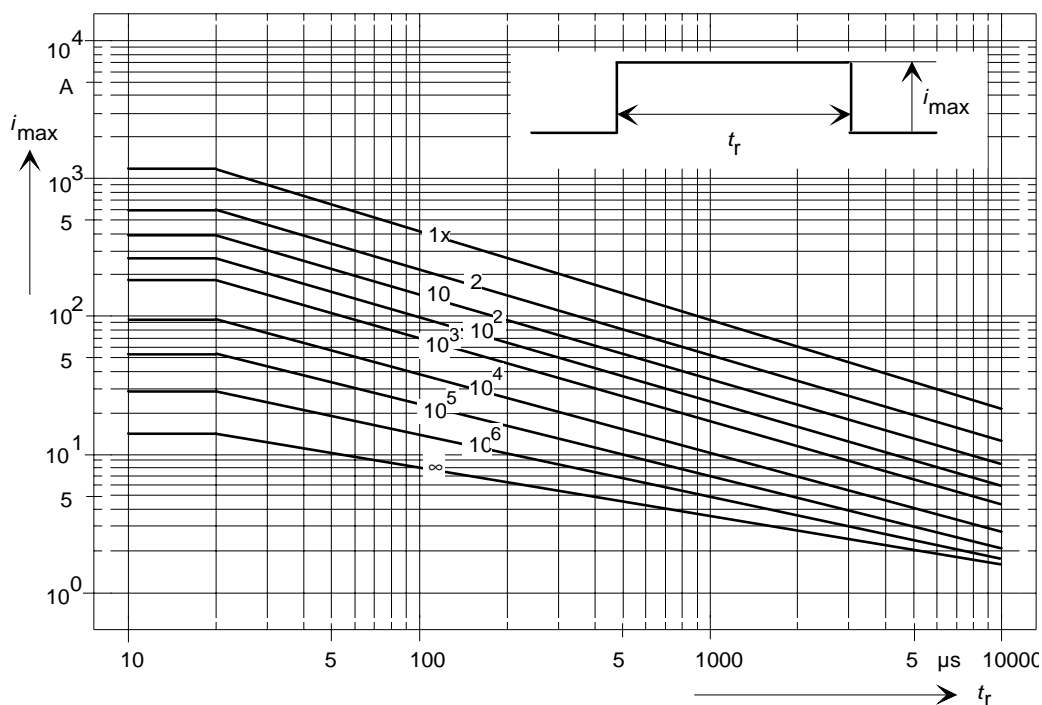
B72540V1140S262

Data Sheet

V-I-Characteristic



Derating Field



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

Max. operating voltage

RMS voltage

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

DC voltage

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

Varistor voltage (@ 1 mA)

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

Max. clamping voltage (@ 10 A)

 $V_C = 40 \text{ V}$

Max. average power dissipation

 $P_{\text{max}} = 30 \text{ mW}$ Max. surge current (8/20 μs) **$\hat{I}_{\text{max}} = 1 \times 1200 \text{ A}$**

Max. energy absorption (2 ms)

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

Load Dump

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

Jump Start

24.5 V, 5 min.

Capacitance (@ 1 kHz, 1 V), typically

9.5 nF

Response time

< 0.5 ns

Operating temperature

-55 ... +125 °C

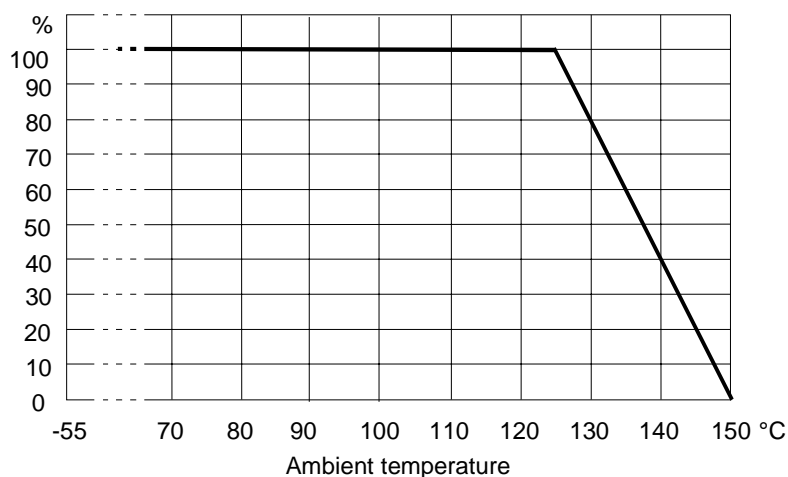
Storage temperature (mounted parts)

-55 ... +150 °C

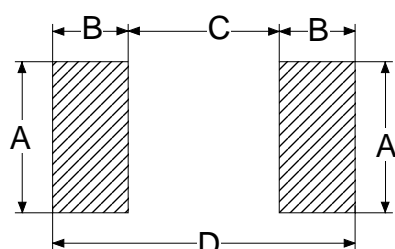
Termination material

Ag/Pd

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



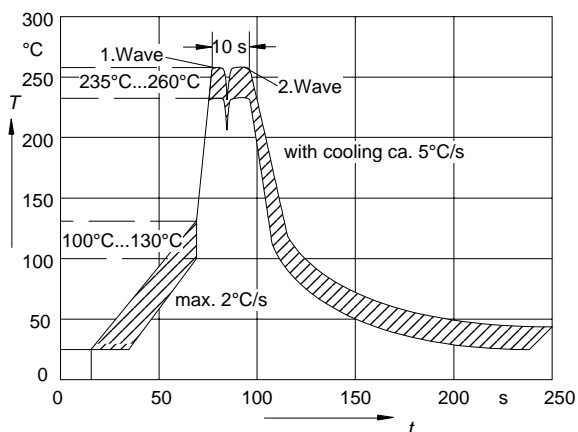
Recommended solder pad layout



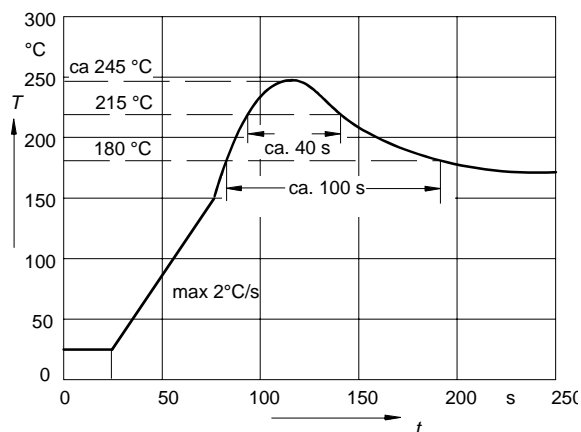
$A = 5,5 \text{ mm}$
 $B = 1,5 \text{ mm}$
 $C = 4,2 \text{ mm}$
 $D = 7,2 \text{ mm}$

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

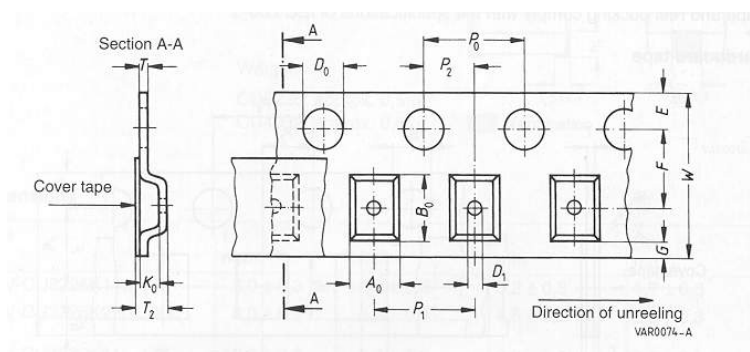
Relative humidity: <75% annual average, <95% on max. 30 days in a year.

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

Taping and Packaging:

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

Tape material: Blister

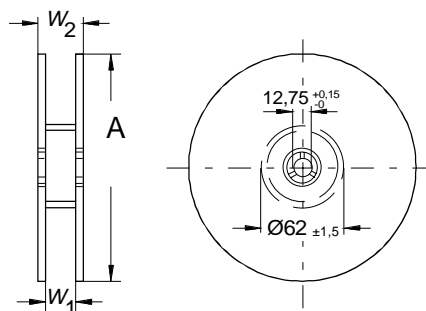


Dimensions and tolerances:

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:

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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