

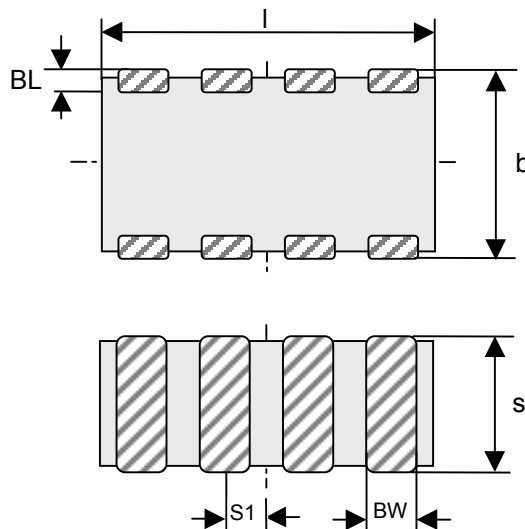
## Designation system

- CA = Chip array  
 05 = Dimensions of the device **05** x 08 (length x width in 1/100 inch)  
 P = Design (parallel internal structure)  
 4 = Number of elements  
 S = Special tolerance of the varistor voltage  
 14 = Maximum operating voltage  
 T = Three layer terminations  
 HS = Designed for protection of high speed datalines (low capacitance)  
 G = Taped version (cardboard tape, 7" reel, 4000 pieces/reel)

## Figure

- $l = 2.0 \pm 0.2$   
 $b = 1.25 \pm 0.2$   
 $s = 0.9 \text{ max.}$   
 $BW = 0.3 \pm 0.1$   
 $BL = 0.2 +0.2 / -0.1$   
 $S1 = 0.25 \pm 0.1$

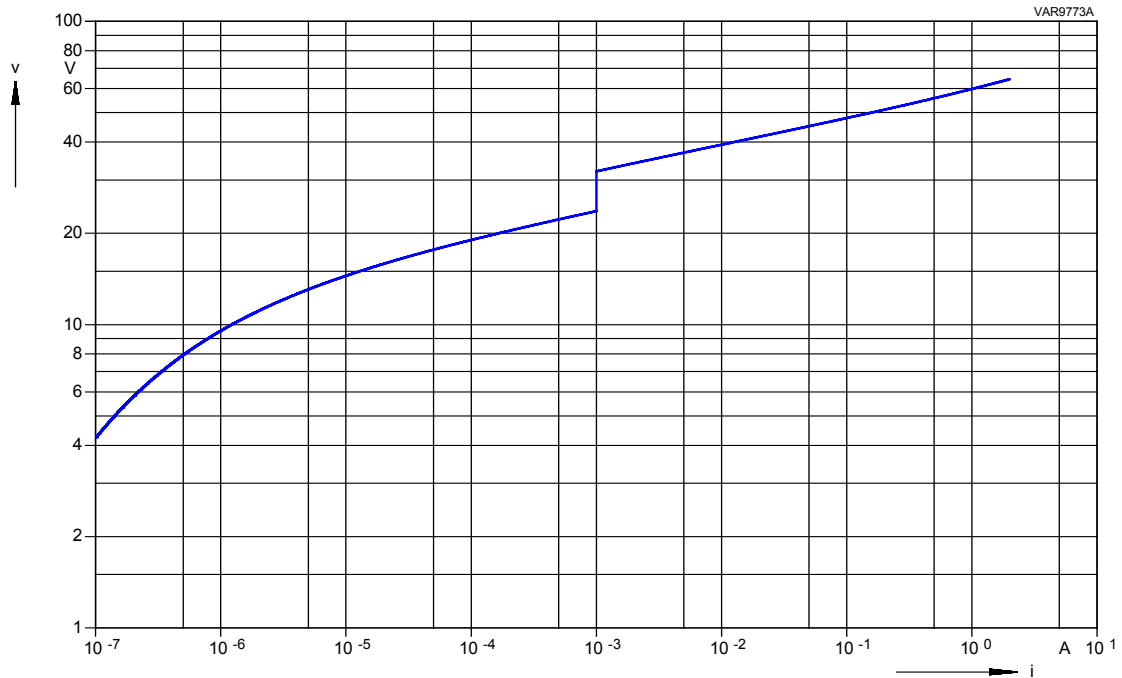
(all dimensions in mm)



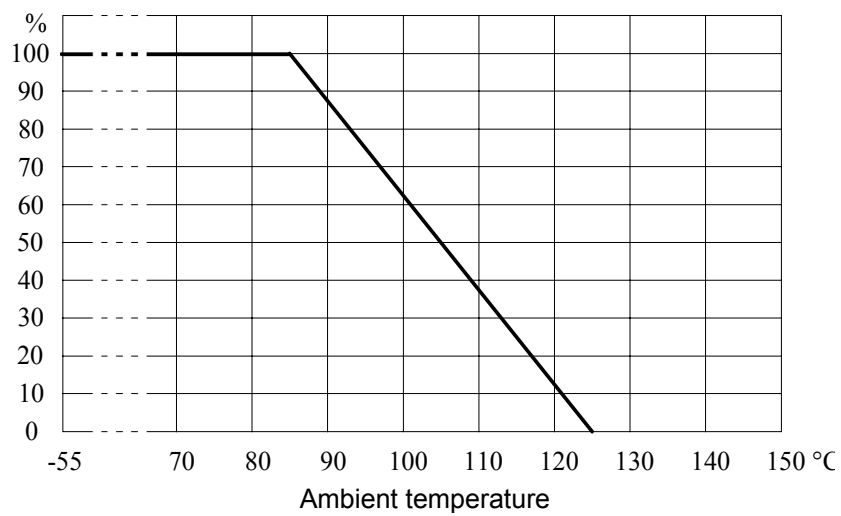
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### V-I-characteristic



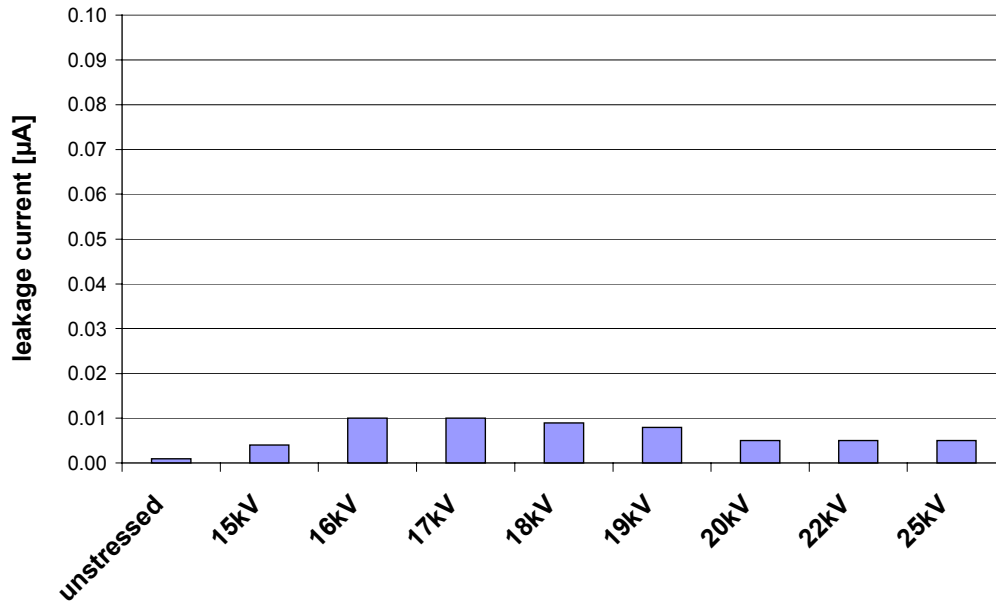
Max. current, energy and average power dissipation depending on ambient temperature



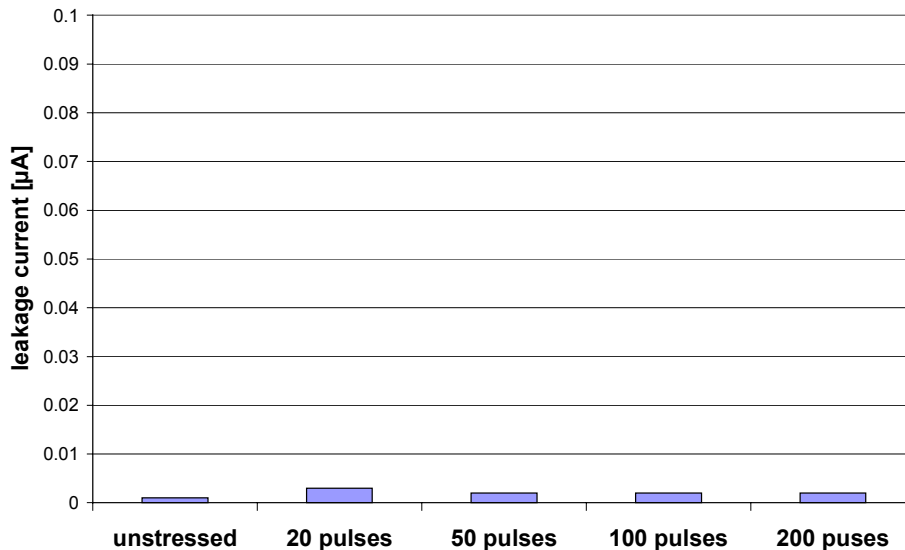
## Electrical data

Maximum operating voltage	
RMS voltage	<b><math>V_{RMS} = 14 \text{ V}</math></b>
DC voltage	<b><math>V_{DC} = 16 \text{ V}</math></b>
Varistor voltage (@ 1 mA)	<b><math>V_V = 24 \text{ up to } 32 \text{ V}</math></b>
Maximum clamping voltage (@ 1 A)	<b><math>V_C = 59 \text{ V}</math></b>
DC leakage current (@ 4.2 V, 25 °C)	<b><math>I_S &lt; 0.01 \mu\text{A (typ.)}</math></b>
DC leakage current (@ 4.2 V, 85 °C)	<b><math>I_S &lt; 0.05 \mu\text{A (typ.)}</math></b>
Surface leakage current (@ 18 V, 25 °C)	<b><math>I_{SL} &lt; 0.1 \mu\text{A}</math></b>
Insulation resistance after reflow soldering (@ 4.2 V, 25 °C)	<b><math>R_{IS} &gt; 10 \text{ M}\Omega</math></b>
Maximum capacitance (@ 1 MHz, 1 V, 25 °C)	<b><math>C_{max} = 15 \text{ pF}</math></b>
Typical capacitance (@ 1 MHz, 1 V, 25 °C)	<b><math>C_{typ} = 10 \text{ pF}</math></b>
Maximum energy absorption (ESD)	<b><math>W_{max} = 30 \text{ mJ}</math></b>
(@ ESD according to IEC 61000-4-2, 15 kV air discharge)	
Response time	<b><math>&lt; 0.5 \text{ ns}</math></b>
Operating temperature	<b><math>-40 \dots +85 \text{ }^\circ\text{C}</math></b>
Storage temperature (mounted parts)	<b><math>-40 \dots +125 \text{ }^\circ\text{C}</math></b>
Termination material	<b>Ag/Ni/Sn</b>

### Stability to multiple ESD discharges



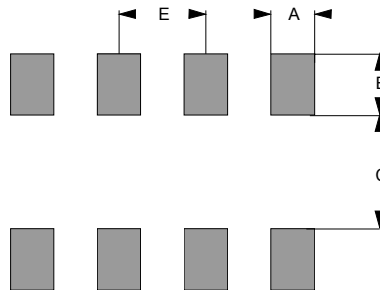
Typical leakage current @ 4.2 V, 25 °C @ multiple ESD discharges (10 pulses of each polarity, contact discharge according to IEC 61000-4-2, voltage up to 25 kV, application on same parts).



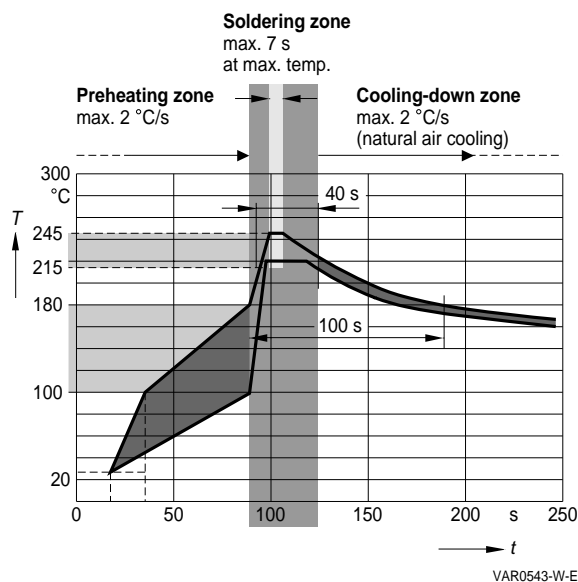
Typical leakage current @ 4.2 V, 25 °C @ multiple ESD discharges (polarity +, 15 kV contact discharge according to IEC 61000-4-2).

### Recommended geometry of solder pads

- A = 0.35 mm
- B = 0.9 mm
- C = 0.4 mm
- E = 0.5 mm



### Recommended soldering temperature profile



This component is suited for reflow soldering. Maximum reflow cycles: 3 x

As far as possible, the components shall be employed within 12 months. 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.

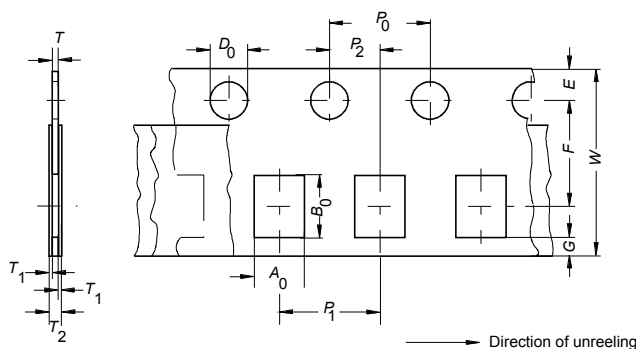
The usage of mild non-activated fluxes for soldering is recommended, as well as proper cleaning of the PCB.

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	$A_0$	1.6	$\pm 0.2$
Compartment length	$B_0$	2.4	$\pm 0.2$
Sprocket hole diameter	$D_0$	1.5	$+0.1/-0$
Sprocket hole pitch	$P_0$	4.0	$\pm 0.1$ <sup>1)</sup>
Distance center hole to center compartment	$P_2$	2.0	$\pm 0.05$
Pitch of the component compartments	$P_1$	4.0	$\pm 0.1$
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	$T_2$	1.12	max.
Thickness tape	$T$	0.95	$\pm 0.05$

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

Package: 8 mm tape:

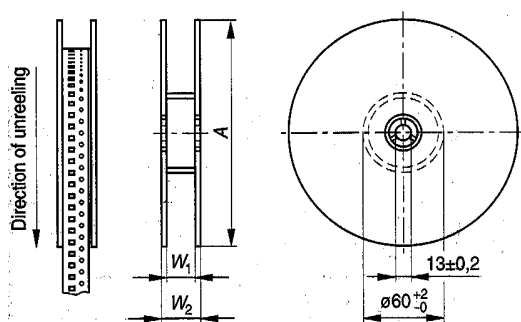
## Packing

Each reel in airtight plastic bag with desiccant bag.

**Reel material:** plastic

**Packing unit:** 4000 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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