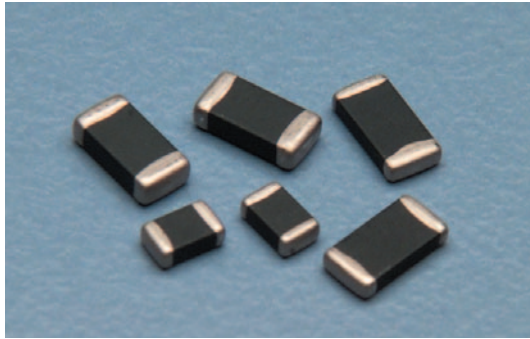




**THE DATASHEET OF  
NV73A2ATTE33**

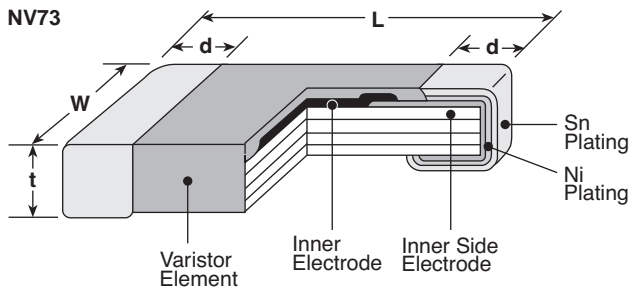




## features

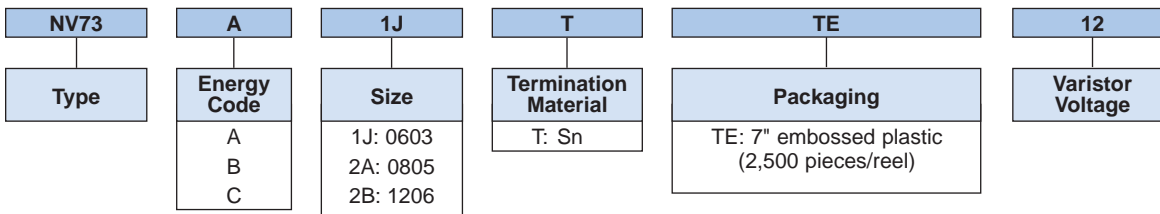
- Varistors own two-way symmetries and can absorb positive and negative surges
- Multilayer construction allows its small size to absorb a large surge
- Small space and high density mounting available due to the small package
- Suitable for both flow and reflow solderings
- Products with lead free termination meet EU RoHS requirements

## dimensions and construction



Type (Inch Size Code)	Dimensions inches (mm)			
	L	W	t	d
<b>1J (0603)</b>	.063±.006 (1.6±0.15)	.031±.006 (0.8±0.15)	.031±.006 (0.8±0.15)	.016 <sup>+0.006</sup> <sub>-.008</sub> (0.4 <sup>+0.15</sup> <sub>-0.2</sub> )
<b>2A (0805)</b>	.079±.008 (2.0±0.2)	.049±.008 (1.25±0.2)	.051 max. (1.3 max.)	.02±.010 (0.5±0.25)
<b>2B (1206)</b>	.126±.008 (3.2±0.2)	.063±.008 (1.6±0.2)	.065 max. (1.65 max.)	.02 <sup>+0.014</sup> <sub>-.010</sub> (0.5 <sup>+0.35</sup> <sub>-0.25</sub> )

## ordering information



The terminal surface material lead free is standard.  
 Contact us when you have control request for environmental hazardous material other than the substance specified by EU-RoHS.  
 For further information on packaging, please refer to Appendix A.

circuit protection

## applications and ratings

Part Designation	Varistor Voltage Vc	Maximum Allowable Voltage		Clamping Voltage		Maximum Energy E (J)	Maximum Peak Current I <sub>P</sub> (A) (2 times)	Operating Temp. T <sub>opt</sub> (°C)	Storage Temp. T <sub>stg</sub> (°C)		
	I <sub>c</sub> = 1mA (V)	a.c rms (V)	d.c (V)	V <sub>1A</sub>	V <sub>2A</sub>						
NV73A1JTTE8.2	6.8 - 9.8	4.2	6.0	—	21	0.1	30	-40°C to +85°C	-40°C to +125°C		
NV73A1JTTE12	10 - 14.4	6.1	8.6	—	29						
NV73A1JTTE15	12.5 - 18	7.6	10.8	—	35						
NV73A1JTTE18	16 - 20	9.1	12.8	—	37						
NV73A1JTTE20	18 - 22	10.6	15.0	—	40						
NV73A1JTTE22	19 - 24	12.0	16.5	—	42						
NV73A1JTTE24	21.8 - 26.5	14.0	18.0	—	46						
NV73A1JTTE27	25 - 32	17.0	22.0	—	49						
NV73A2ATTE8.2	6.8 - 9.8	4.2	6.0	18	—	0.01	10			-40°C to +85°C	-40°C to +125°C
NV73A2ATTE12	10 - 14.4	6.1	8.6	24	—	0.03	20				
NV73A2ATTE15	12.5 - 18	7.6	10.8	29	—	0.04					
NV73A2ATTE18	16 - 20	9.1	12.8	29	—						
NV73A2ATTE20	18 - 22	10.6	15.0	33	—	0.05					
NV73A2ATTE22	19 - 24	12.0	16.5	39	—						
NV73A2ATTE24	21.8 - 26.5	14.0	18.0	42	—	0.06					
NV73A2ATTE27	25 - 32	17.0	22.0	50	—	0.07					
NV73A2ATTE33	30 - 39	20.0	26.0	60	—	0.12	25				
NV73A2ATTE39	37 - 47	25.0	31.0	72	—	0.14					
NV73A2ATTE47	45 - 54	30.0	38.0	86	—	0.16					
NV73B2ATTE8.2	6.8 - 9.8	4.2	6.0	—	18	0.03	20			-40°C to +85°C	-40°C to +125°C
NV73B2ATTE12	10 - 14.4	6.1	8.6	—	24	0.05	35				
NV73B2ATTE15	12.5 - 18	7.6	10.8	—	30	0.07					
NV73B2ATTE18	16 - 20	9.1	12.8	—	32	0.08					
NV73B2ATTE20	18 - 22	10.6	15.0	—	36	0.09					
NV73B2ATTE22	19 - 24	12.0	16.5	—	40	0.11					
NV73B2ATTE24	21.8 - 26.5	14.0	18.0	—	42	0.12					
NV73B2ATTE27	25 - 32	17.0	22.0	—	58	0.24					
NV73B2ATTE33	30 - 39	20.0	26.0	—	66	0.25	50			50	
NV73C2ATTE8.2	6.8 - 9.8	4.2	6.0	—	18	0.04	25				
NV73C2ATTE12	10 - 14.4	6.1	8.6	—	24	0.09	50				
NV73C2ATTE15	12.5 - 18	7.6	10.8	—	29	0.11					
NV73C2ATTE18	16 - 20	9.1	12.8	—	32	0.13					
NV73C2ATTE20	18 - 22	10.6	15.0	—	35	0.14					
NV73C2ATTE22	19 - 24	12.0	16.5	—	40	0.17					
NV73C2ATTE24	21.8 - 26.5	14.0	18.0	—	42	0.18					
NV73A2BTTE27	25 - 32	17.0	22.0	—	55	0.13		40			
NV73A2BTTE33	30 - 39	20.0	26.0	—	60	0.15					
NV73A2BTTE39	37 - 47	25.0	31.0	—	72	0.18					
NV73A2BTTE47	45 - 54	30.0	38.0	—	85	0.22					
NV73A2BTTE56	52 - 62	35.0	45.0	—	100	0.26					

circuit protection

**applications and ratings** (continued)

Part Designation	Varistor Voltage Vc	Maximum Allowable Voltage		Clamping Voltage		Maximum Energy E (J)	Maximum Peak Current I <sub>p</sub> (A) (2 times)	Operating Temp. T <sub>opt</sub> (°C)	Storage Temp. T <sub>stg</sub> (°C)
	I <sub>c</sub> = 1mA (V)	a.c rms (V)	d.c (V)	V <sub>1A</sub>	V <sub>2A</sub>				
NV73B2BTTE8.2	6.8 - 9.8	4.2	6.0	—	18	0.03	50	-40°C to +85°C	-40°C to +125°C
NV73B2BTTE12	10 - 14.4	6.1	8.6	—	24	0.07			
NV73B2BTTE15	12.5 - 18	7.6	10.8	—	29	0.09			
NV73B2BTTE18	16 - 20	9.1	12.8	—	32	0.1			
NV73B2BTTE20	18 - 22	10.6	15.0	—	35	0.11			
NV73B2BTTE22	19 - 24	12.0	16.5	—	40	0.12			
NV73B2BTTE24	21.8 - 26.5	14.0	18.0	—	42	0.14			
NV73B2BTTE27	25 - 32	17.0	22.0	—	52	0.16			
NV73C2BTTE8.2	6.8 - 9.8	4.2	6.0	—	18	0.06	40		
NV73C2BTTE12	10 - 14.4	6.1	8.6	—	24	0.1	70		
NV73C2BTTE15	12.5 - 18	7.6	10.8	—	29	0.13			
NV73C2BTTE18	16 - 20	9.1	12.8	—	29	0.15			
NV73C2BTTE20	18 - 22	10.6	15.0	—	31	0.17			
NV73C2BTTE22	19 - 24	12.0	16.5	—	35	0.19			
NV73C2BTTE24	21.8 - 26.5	14.0	18.0	—	38	0.2			
NV73C2BTTE27	25 - 32	17.0	22.0	—	48	0.24			

**environmental applications**

**Performance Characteristics**

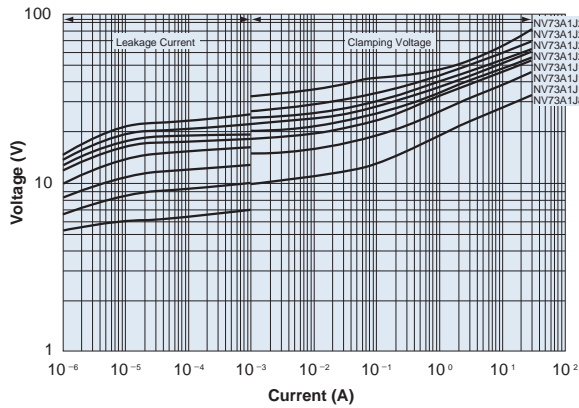
Parameter	Requirement Δ V±%	Test Method
Varistor Voltage	Within specified tolerance	Voltage between terminals when 1mA is flowed
Solderability	95% coverage minimum	230°C ± 5°C, 4 seconds ± 1 second
Resistance to Solder Heat	±10%	270°C ± 5°C, 3 seconds ± 0.5 second
Rapid Change of Temperature	±10%	-40°C (30 minutes), +125°C (30 minutes), 30 cycles
Maximum Peak Current	±10%	A single standard impulse of 8/20μ seconds, positive/negative applied once each
Maximum Energy	±10%	A single standard impulse of 2ms, once
High Temperature Life with d.c. Bias	±10%	85°C ± 5°C, 1000h, Load: Maximum allowable circuit voltage (d.c.)
High Temperature Life with a.c. Bias**	±10%	85°C ± 5°C, 1000h, Load: Maximum allowable circuit voltage (V <sub>a.c.r.m.s.</sub> )
High Temperature & High Humidity Life with d.c. Bias	±10%	40°C ± 5°C, 95% RH, 500h, Load: Maximum allowable voltage (d.c.)
High Temperature Storage Life	±10%	125°C ± 5°C, 1000h
Low Temperature Storage Life	±10%	-40°C ± 5°C, 1000h

For Voltage Current Curves Graphs see Environmental Applications. Additional environmental applications can also be found at [www.koaspeer.com](http://www.koaspeer.com)

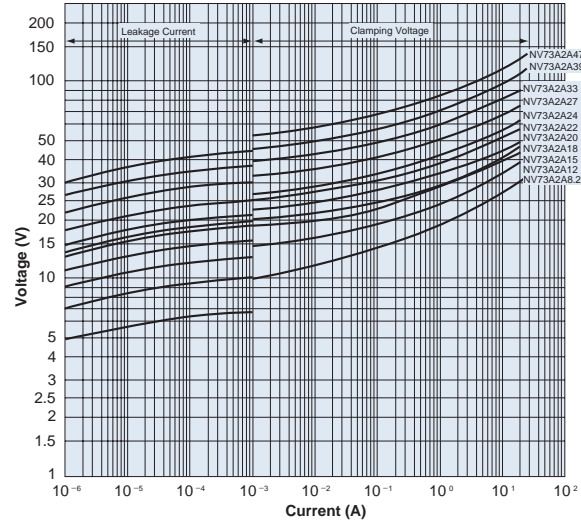
**environmental applications** (continued)

**Voltage-Current Curves (Ta = 25°C)**

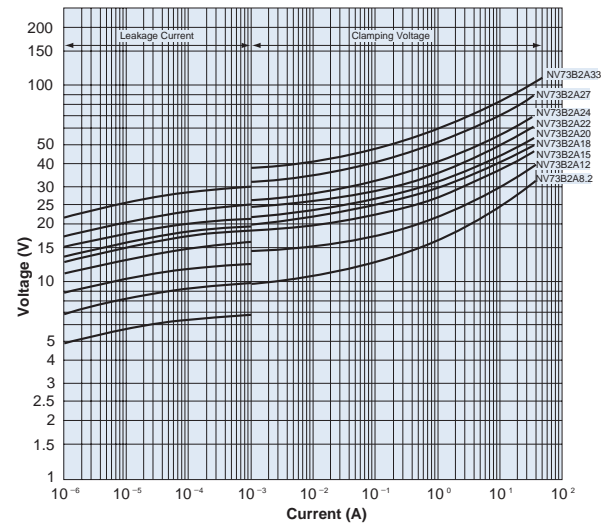
**NV73A 1J**



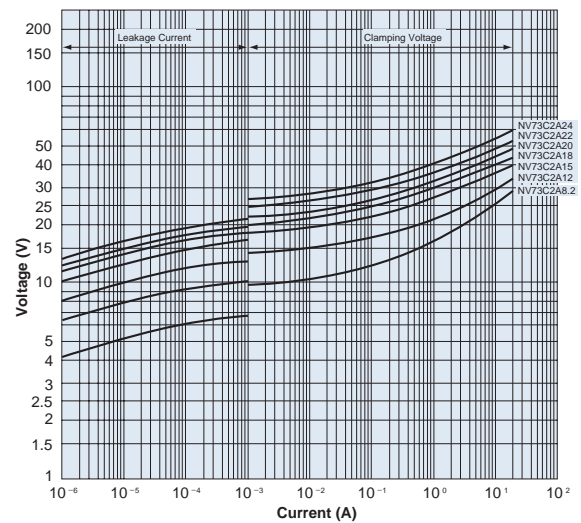
**NV73A 2A**



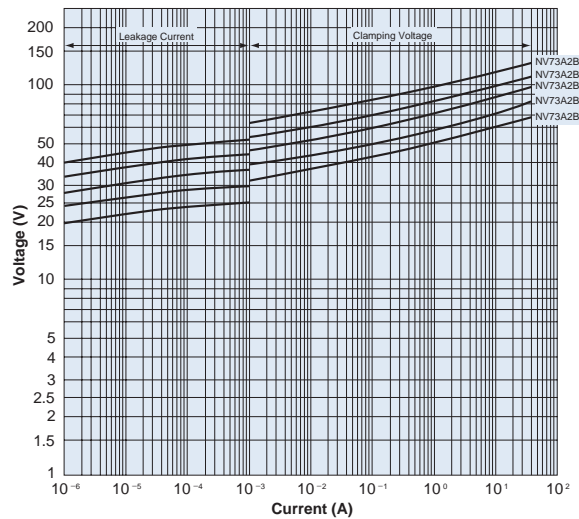
**NV73B 2A**



**NV73C 2A**



**NV73A 2B**



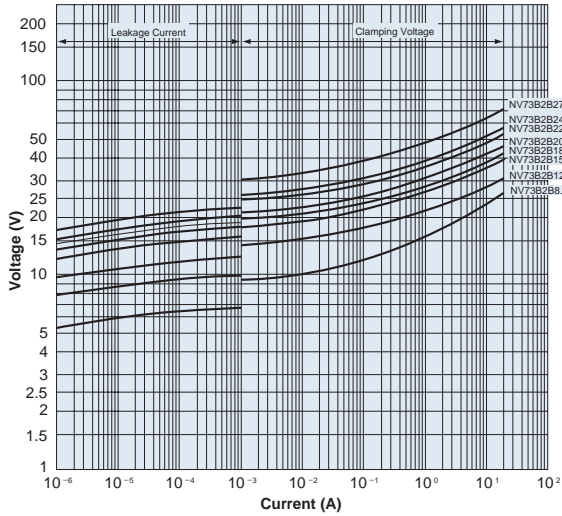
Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

3/28/25

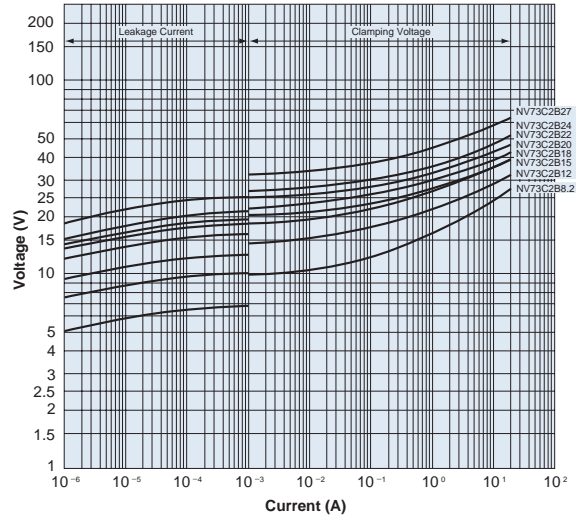
**environmental applications** (continued)

**Voltage-Current Curves (Ta = 25°C)**

**NV73B 2B**



**NV73C 2B**



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