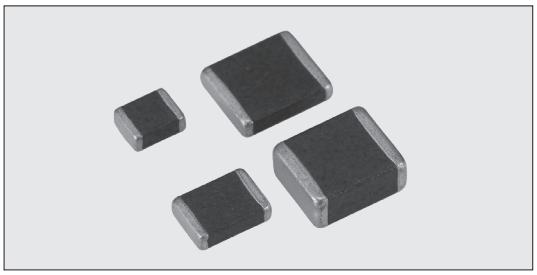
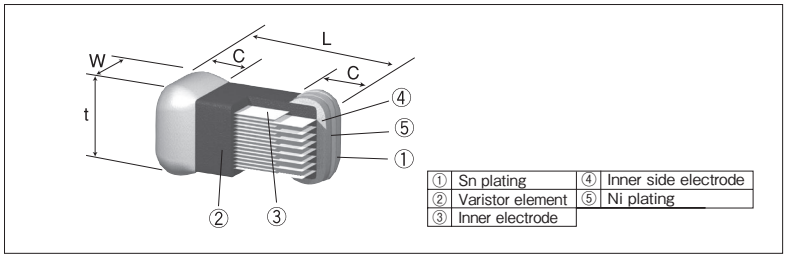
NEW EU RoHS

NV73S Multilayer Type Metal Oxide Varistors



Body color : Black

■Construction



①	Sn plating	④	Inner side electrode
②	Varistor element	⑤	Ni plating
③	Inner electrode		

Chip Varistors

■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 meet EU-RoHS requirements.

■Applications

- Protection of ESD from input and output terminals of mobile devices.
- Absorption of surge voltages occurred from inductive load of motors, relays, etc.
- Protection of semiconductor elements against over voltages.
- Absorption of surge voltages generated from piezoelectric elements.

■Dimensions

Type (Inch Size Code)	Dimensions (mm)				Weight (g) (1000pcs)
	L	W	t	c	
NV73S 2E (1210)	3.2±0.3	2.5±0.3	1.3±0.3	0.5±0.25	48～72
NV73S 2J (1812)	4.5±0.3	3.2±0.3	1.3±0.3	0.6±0.30	84～126
NV73S 2L (2220)	5.7±0.3	4.7±0.3	1.3±0.3	0.65±0.35	159～239
NV73S 2L H (2220)	5.7±0.3	4.7±0.3	2.5±0.3	0.75±0.35	272～408

■Type Designation

Example

NV73	S	2L	T	TE	82	H
Product Code	Energy Code	Size	Terminal Surface Material	Taping	Varistor Voltage	Identification Code (only 2L H)
		2E : 3.2×2.5mm 2J : 4.5×3.2mm 2L : 5.7×4.7mm	T : Sn	TE : Taping		

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 taping, please refer to APPENDIX C on the back pages.

■Performance

Test Items	Performance Requirements ΔV±%	Test Methods
Varistor Voltage	Within specified tolerance	Voltage between terminals when 1mA is flowed.
Clamping voltage	Individual Vp or less	Voltage between terminals when a single standard impulse current of 8/20μs is applied. 2E : 2.5A 2J : 5A 2L : 10A 2LH : 100A
Resistance to soldering heat	10	260℃±5℃ 10s±0.5s
Solderability	95% Coverage min.	230℃±5℃ 5s±0.5s
Rapid change of temperature	10 No mechanical damage (Cracks in solder fillets are not covered by warranty.)	-40℃ (30min) /+125℃ (30min) 1000cycles
Maximum peak current	10	A single standard impulse current of 8/20μs is applied.
Maximum energy	10	A single standard impulse of 2ms, once.
Electrostatic discharge	10	25kV (non contact)
Vibration resistance	No visible damage. No remarkable mechanical damage.	Vibration frequency : 10Hz～2000Hz Full amplitude : 1.5mm, 10Hz～2000Hz～10Hz 20min. XYZ direction 4hrs for each total 12hrs
High temperature life with d.c. bias	10	125℃±2℃, 1000h Applied voltage : Varistor voltage (V 1mA) ×0.85
High temperature & high humidity life with bias	10	85℃±2℃, 85%±3%RH, 1000h Applied voltage : Varistor voltage (V 1mA) ×0.85
Thermal shock	10 No mechanical damage (Cracks in solder fillets are not covered by warranty.)	-55℃ (15min.) /+125℃ (15min.) 300cycles
Shock	10 No mechanical damage	Half sine wave, Applied time : 1ms, Applied cycle : 500m/s², 5cycles
High temperature storage	10	+150℃±5℃ 1000h
Low temperature storage	10	-50℃±5℃ 1000h

■Ratings

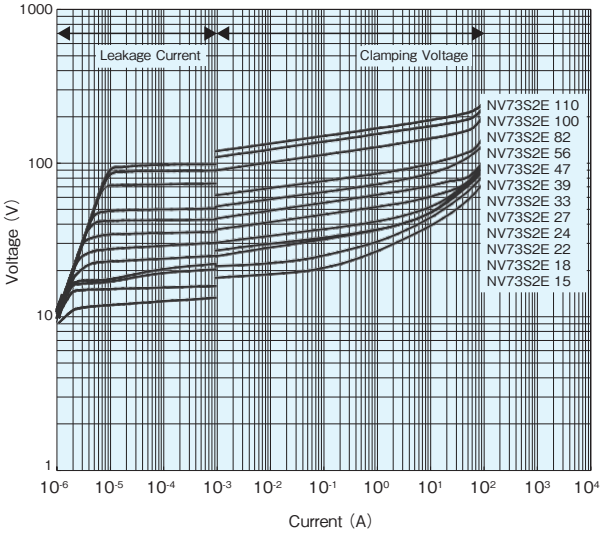
Operating Temp. Range：−50℃～+125℃　Storage Temp. Range：−50℃～+150℃　Q' ty/Reel 2E：TE (2,000pcs)、2J・2L：TE (1,000pcs)

Type	Varistor Vol. Vc Ic=1mA (V)	Max. Allowable Vol.		Clamping Vol. (V)				Max. Energy E (J) (1 times)	Max. Peak Current Ip (A) (1 times)
		a.c.$_{r.m.s.}$ (V)	d.c. (V)	$V_{2.5A}$	V_{5A}	V_{10A}	V_{100A}		
NV73S2ETTE15	12.8～17.3	8	11	30	–	–	–	1.1	800
NV73S2ETTE18	15.3～20.7	11	14	34	–	–	–	1.3	
NV73S2ETTE22	19.8～24.2	12	16.5	39	–	–	–	1.5	
NV73S2ETTE24	21.6～26.4	14	18	39	–	–	–	1.7	
NV73S2ETTE27	24.3～29.7	17	22	44	–	–	–	1.9	
NV73S2ETTE33	29.7～36.3	20	26	54	–	–	–	2.0	
NV73S2ETTE39	35.1～42.9	25	30	65	–	–	–	2.3	
NV73S2ETTE47	42.3～51.7	30	38	77	–	–	–	2.4	
NV73S2ETTE56	50.4～61.6	35	45	90	–	–	–		
NV73S2ETTE82	73.8～90.2	50	65	135	–	–	–		600
NV73S2ETTE100	90.0～110.0	60	85	165	–	–	–	1.4	400
NV73S2ETTE110	99.0～121.0	70	90	180	–	–	–	1.7	
NV73S2JTTE12	10.2～13.8	6	9	–	27	–	–	1.0	1,200
NV73S2JTTE15	12.8～17.3	8	11	–	32	–	–	2.0	
NV73S2JTTE18	15.3～20.7	11	14	–	35	–	–	2.1	
NV73S2JTTE22	19.8～24.2	12	16.5	–	41	–	–	2.8	
NV73S2JTTE24	21.6～26.4	14	18	–	44	–	–	2.8	
NV73S2JTTE27	24.3～29.7	17	22	–	49	–	–	3.2	
NV73S2JTTE33	29.7～36.3	20	26	–	54	–	–	3.6	
NV73S2JTTE39	35.1～42.9	25	30	–	65	–	–	4.4	
NV73S2JTTE47	42.3～51.7	30	38	–	77	–	–	5.0	
NV73S2JTTE56	50.4～61.6	35	45	–	90	–	–		
NV73S2JTTE68	61.2～74.8	40	56	–	110	–	–	5.8	
NV73S2JTTE82	73.8～90.2	50	65	–	135	–	–	5.4	800
NV73S2JTTE100	90.0～110.0	60	85	–	165	–	–	7.0	
NV73S2JTTE110	99.0～121.0	70	90	–	180	–	–		
NV73S2JTTE150	135.0～165.0	95	127	–	248	–	–	6.4	500
NV73S2LTTE12	10.2～13.8	6	9	–	–	28	–	2.1	2,500
NV73S2LTTE15	12.8～17.3	8	11	–	–	33	–	4.6	
NV73S2LTTE18	16.2～19.8	11	14	–	–	36	–	5.9	
NV73S2LTTE22	19.8～24.2	12	16.5	–	–	41	–	7.0	
NV73S2LTTE24	21.6～26.4	14	18	–	–	45	–		
NV73S2LTTE27	24.3～29.7	17	22	–	–	48	–	8.6	
NV73S2LTTE33	29.7～36.3	20	26	–	–	57	–	9.4	
NV73S2LTTE39	35.1～42.9	25	30	–	–	65	–	11.5	
NV73S2LTTE47	42.3～51.7	30	38	–	–	77	–	14.4	
NV73S2LTTE56	50.4～61.6	35	45	–	–	90	–	9.2	
NV73S2LTTE68	61.2～74.8	40	56	–	–	110	–	10.6	
NV73S2LTTE82	73.8 ～90.2	50	65	–	–	135	–	6.7	1,500
NV73S2LTTE100	90.0～110.0	60	85	–	–	165	–	8.2	
NV73S2LTTE110	99.0～121.0	70	90	–	–	180	–		
NV73S2LTTE47H	42.3～51.7	30	38	–	–	–	77	15	6,000
NV73S2LTTE82H	73.8～82.0	50	65	–	–	–	127	14	4,500
NV73S2LTTE100H	90.0～110.0	65	85	–	–	–	165		

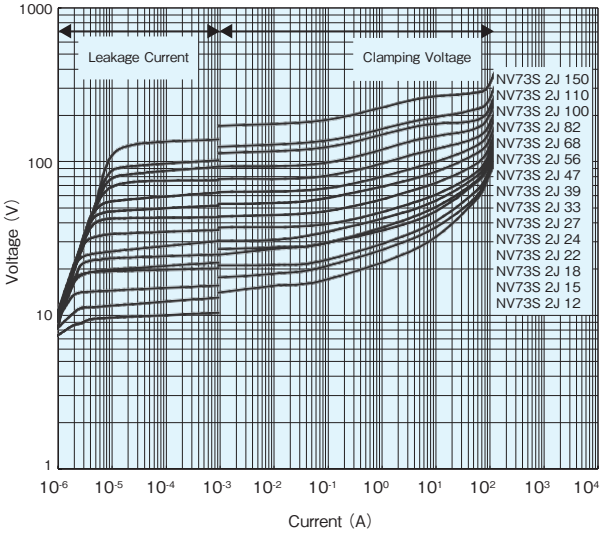
NV73S Multilayer Type Metal Oxide Varistors

■Voltage-Current Curves (Reference) (Ta=25℃)

NV73S 2E



NV73S 2J



NV73S 2L