KOA SPEER ELECTRONICS, INC.

NV73S

multilayer type metal oxide varistors

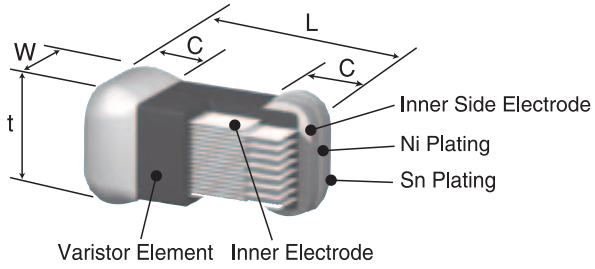
EU RoHS COMPLIANT

NEW

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

dimensions and construction



Type (Inch Size Code)	Dimensions inches (mm) L	W	t	c
2E (1210)	.126±.012 (3.2±0.3)	.098±.012 (2.5±0.3)	.051±.012 (1.3±0.3)	.02±.010 (0.5±0.25)
2J (1812)	.177±.012 (4.5±0.3)	.126±.012 (3.2±0.3)	.051±.012 (1.3±0.3)	.024±.012 (0.6±0.3)
2L (2220)	.224±.012 (5.7±0.3)	.185±.012 (4.7±0.3)	.051±.012 (1.3±0.3)	.026±.014 (0.65±0.35)
2L H (2220)	.224±.012 (5.7±0.3)	.185±.012 (4.7±0.3)	.098±.012 (2.5±0.3)	.030±.014 (0.75±0.35)

ordering information

NV73	S	2L	T	TE	82	H
Type	Energy Code	Size	Termination Surface Material	Packaging	Varistor Voltage	Identification Code (only 2L H)
		2E: 1210 2J: 1812 2L: 2220	T: Sn	TE: Taping		

circuit protection

For further information on packaging, please refer to Appendix A.

3/29/24

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applications and ratings

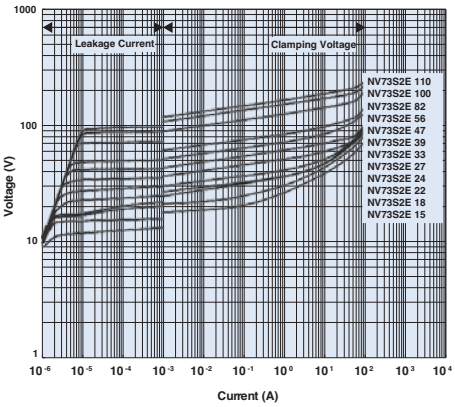
Part Designation	Varistor Voltage Vc	Maximum Allowable Voltage		Clamping Voltage (V)				Maximum Energy E (J) (1 time)	Maximum Peak Current Ip (A) (1 time)	Operating Temp.	Storage Temp. Range
	Ic = 1mA (V)	a.c rms (V)	d.c (V)	$V_{2.5A}$	V_{5A}	V_{10A}	V_{100A}				
NV73S2ETTE15	12.8 - 17.3	8	11	30	—	—	—	1.1	800	-50°C to +125°C	-50°C to +150°C
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	—	—	—	2.0			
NV73S2ETTE33	29.7 - 36.3	20	26	54	—	—	—	2.3			
NV73S2ETTE39	35.1 - 42.9	25	30	65	—	—	—	2.0			
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 - 90.2	50	65	—	—	—	135	14	4,500		
NV73S2LTTE100H	90.0 - 110.0	65	85	—	—	—	165				

For further information on packaging, please refer to Appendix A.

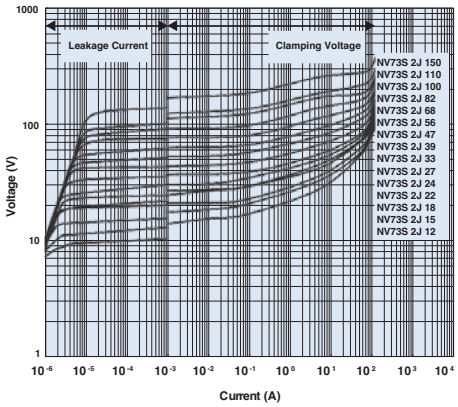
environmental applications

Voltage Current Curves (Reference) (Ta = +25°C)

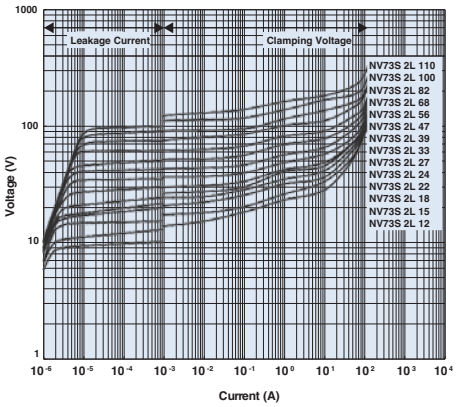
NV73S 2E



NV73S 2J



NV73S 2L



Performance Characteristics

Parameter	Requirement0 Δ V±%	Test Method
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 Solder Heat	±10%	260°C ± 5°C, 10 seconds ± 0.5 second
Solderability	95% coverage minimum	230°C ± 5°C, 5 seconds ± 0.5 second
Rapid Change of Temperature	±10% No mechanical damage (Cracks in solder fillets are not covered by warranty.)	-40°C (30 minutes)/ +125°C (30 minutes), 1000 cycles
Maximum Peak Current	±10%	A single standard impulse current of 8/20μ seconds is applied
Maximum Energy	±10%	A single standard impulse of 2m second, 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 20 min. XYZ direction 4 hrs for each total 12 hrs
High Temperature Life with d.c. Bias	±10%	125°C ± 2°C, 1000h, Applied voltage: Varistor voltage ($V1_{ma}$) x 0.85
High Temperature & High Humidity Life with Bias	±10%	85°C ± 2°C, 85% ±3%RH, 1000h, Applied voltage: Varistor voltage ($V1_{ma}$) x 0.85
Thermal Shock	±10% No mechanical damage (Cracks in solder fillets are not covered by warranty.)	-55°C (15 min.)/ +125°C (15 min.) 300 cycles
Shock	±10% No mechanical damage	Half sine wave, Applied time: 1m second, Applied cycle: 500m/s^2, 5 cycles
High Temperature Storage Life	±10%	150°C ± 5°C, 1000h
Low Temperature Storage Life	±10%	-50°C ± 5°C, 1000h