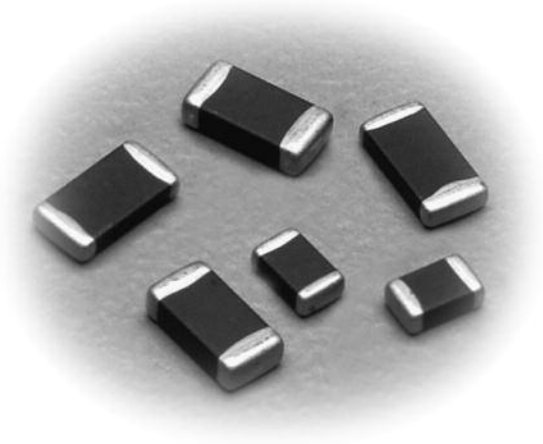
KOA SPEER ELECTRONICS, INC.

NV73DL

multilayer type metal oxide varistor (automotive)

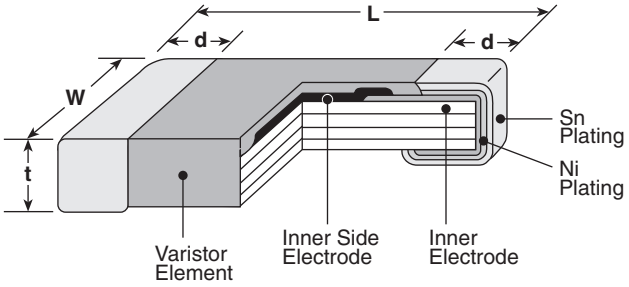
EU RoHS COMPLIANT



features

- SMD type metal oxide varistors
- Ideal for countermeasures against ESD (Conforming to IEC61000-4-2)
- High maximum energy type
- Low leakage current
- High resistance to cyclic temperature stress
- Marking: Black body color
- Suitable for both flow and reflow soldering
- Products with lead-free terminations meet EU RoHS requirements. Pb located in glass material, electrode and varistor element is exempt per Annex 1, exemption 5 of EU directive 2005/95/EC
- AEC-Q200 Qualified

dimensions and construction



Type (Inch Size Code)	Dimensions inches (mm) L	W	t	d
1J (0603)	.063±.006 (1.6±0.15)	.031±.006 (0.8±0.15)	.039 max. (1.0 max.)	.016±.006 (0.4±0.15)
2A (0805)	.079±.010 (2.0±0.25)	.049±.008 (1.25±0.2)	.051 max. (1.30 max.)	.020±.010 (0.5±0.25)
2B (1206)	.126±.012 (3.2±0.3)	.063±.012 (1.6±0.3)	.057 max. (1.45 max.)	.022±.012 (0.55±0.3)

ordering information

New Part #

NV73	DL	2A	T	TE	27
Type	Energy Code	Size	Termination Material	Packaging	Varistor Voltage
		1J: 1.6 x 0.15 2A: 2.0 x 1.2 2B: 3.2 x 1.6	T: Sn	TE: Embossed plastic	

applications and ratings

Part Designation	Varistor Voltage (V)	Maximum Allowable Voltage		Maximum Clamping Voltage (V)		Maximum Energy (J)	Maximum Peak Current 8/20μs (A) 1 time	Short-Time Applied Voltage (5 min) (V_{DC})
	V_{1mA}	A.C.($V_{r.m.s.}$)	D.C.(V)	V_{1A}	V_{2A}			
NV73DL1JTTE12	10~14.4	6.1	8.6	24	—	0.1	80	10
NV73DL1JTTE22	22~27	14	16	42	—	0.2	100	24.5
NV73DL1JTTE27	24~32	17	22	50	—	0.2	100	24.5
NV73DL1JTTE33	33~39	20	26	60	—	0.3	100	24.5
NV73DL1JTTE47	40~54	30	34	81	—	0.3	100	42
NV73DL2ATTE12	10~14.4	6.1	8.6	24	—	0.1	120	10
NV73DL2ATTE22	22~27	14	16	42	—	0.3	160	24.5
NV73DL2ATTE27	24~32	17	22	50	—	0.3	160	24.5
NV73DL2ATTE33	33~39	20	26	60	—	0.3	160	24.5
NV73DL2ATTE47	40~54	30	34	81	—	0.3	160	42
NV73DL2ATTE68	62~72	45	56	108	—	0.3	160	64
NV73DL2ATTE82	74~90	50	65	135	—	0.3	160	75

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

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

1/05/11

applications and ratings (continued)

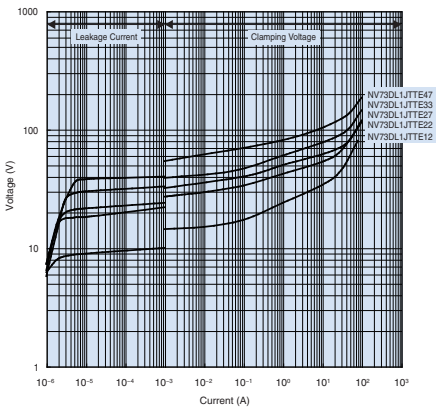
Part Designation	Varistor Voltage (V)	Maximum Allowable Voltage		Maximum Clamping Voltage (V)		Maximum Energy (J)	Maximum Peak Current 8/20μs (A) 1 time	Short-Time Applied Voltage (5 min) (V_{DC})
	V_{1mA}	A.C.($V_{r.m.s.}$)	D.C.(V)	V_{1A}	V_{2A}			
NV73DL2BTTE22	22~27	14	16	—	42	1	300	24.5
NV73DL2BTTE27	24~32	17	22	—	50	1	300	24.5
NV73DL2BTTE33	33~39	20	26	—	60	1	300	24.5
NV73DL2BTTE68	62~72	45	56	—	108	1.5	300	64
NV73DL2BTTE82	74~90	50	65	—	135	1.5	300	75

Operating temperature range: -40°C to +125°C
Storage temperature range: -40°C to +150°C

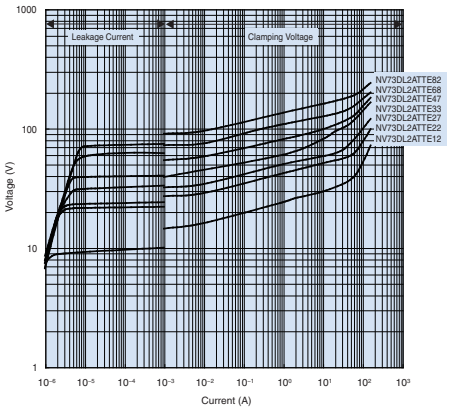
environmental applications

Voltage Current Curves (Ta = +25°C)

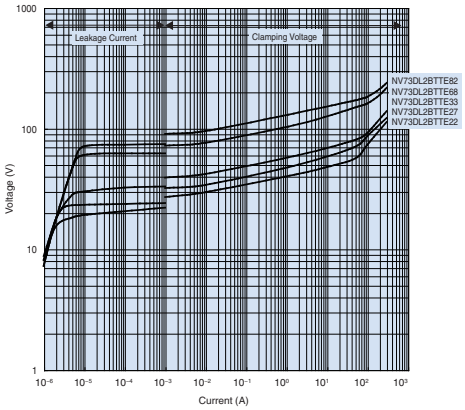
NV73DL1J



NV73DL2A



NV73DL2B



Performance Characteristics

Parameter	Requirement Δ V1mA±%	Test Method
Varistor Voltage	Within specified tolerance	Voltage between terminals when 1mA and 10mA are flowed
Solderability	95% coverage minimum (Ag-Pd: 75% coverage min.)	230°C ± 5°C, 5 seconds ± 0.5 second
Resistance to Solder Heat	±10%	260°C ± 5°C, 10 seconds ± 0.5 second
Rapid Change of Temperature	±10%	-40°C (30 minutes)/ +125°C (30 minutes), 1000 cycles
Short-Time Applied Voltage	±10%	Maximum value of D.C. voltage that can be applied for a short period of time (5 min.) (NV73D2A 12: 1 min.)
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) (NV73DL1J12, NV73DL2A12: 15kV (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% RH, 1000h, Applied voltage: Varistor voltage ($V1_{ma}$) x 0.85
Thermal Shock	±10%	-55°C (15 min.)/ +125°C (15 min.) 300 cycles
Shock	±10%	Half sine wave, Applied time: 1m second, Applied cycle: 500m/s², 5 cycles
High Temperature Storage	±10%	150°C, 1000h
Low Temperature Storage	±10%	-40°C, 1000h

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