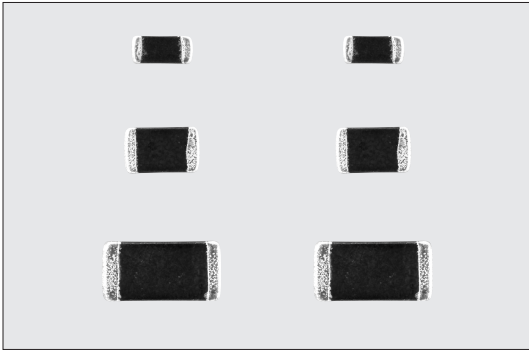
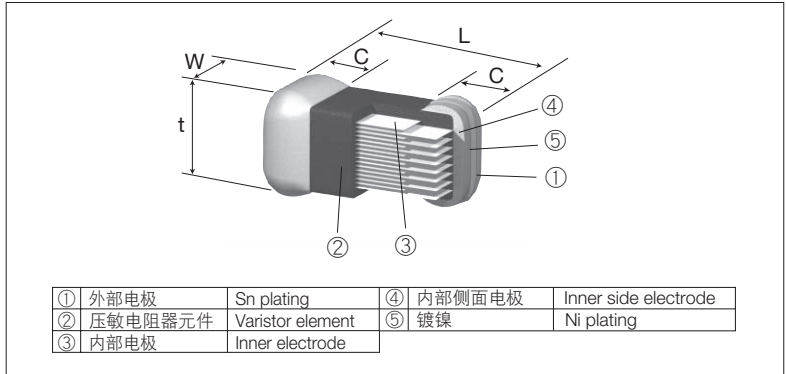


NV73DL 层叠型金属氧化物压敏电阻器 (车载用) Multilayer Type Metal Oxide Varistors (For Automotive)



外观颜色：黑色 Coating color：Black

■ 结构图 Construction



■ 特点 Features

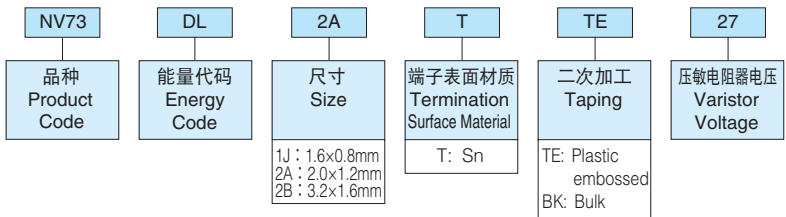
- 是表面封装型的小型金属氧化物压敏电阻器。
- 应答性优异，适用于ESD对策。AEC-Q200相关数据已取得。
- 由于是非线性，可以双向吸收噪声。
- 最大高电能型。
- 可以在高温（125℃）下使用。
- 漏电流小。
- 对温度循环好。
- 对应波峰焊和回流焊。
- 符合欧盟RoHS。电极、压敏电阻器元件、玻璃中所含铅玻璃，欧盟RoHS适用除外。
- SMD type metal oxide varistors.
- Ideal for the countermeasure against ESD. AEC-Q200 Qualified.
- Symmetrical non-linearity V-I characteristics absorb positive and negative surge.
- High maximum energy type.
- Operating temperatures up to 125℃.
- Low leakage current.
- High resistance to cyclic temperature stress.
- Suitable for both flow and reflow solderings.
- Products meet EU-RoHS requirements. EU-RoHS regulation is not intended for Pb-glass contained in electrode, varistor element and glass.

■ 外形尺寸 Dimensions

型号 Type (Inch Size Code)	尺寸 Dimensions (mm)				Weight (g) (1000pcs)
	L	W	t Max.	c	
NV73DL 1J (0603)	1.6±0.15	0.8±0.15	1.00	0.4±0.15	3~5
NV73DL 2A (0805)	2.0±0.25	1.25±0.2	1.30	0.5±0.25	7~12
NV73DL 2B (1206)	3.2±0.3	1.6±0.3	1.45	0.55±0.3	18~24

■ 品名构成 Type Designation

实例 Example



欲知关于此产品含有的环境负荷物质详情（除EU-RoHS以外），请与我们联系。编带细节请参考卷末附录C。

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.

■ 用途 Applications

- 车载电子设备的过电压的保护。
- 从电动机、继电器等的感应载荷所发生的过电压的吸收。
- 从过电压保护半导体元件。
- Protection from surge to electronic device for automotive.
- Absorption of surge voltages occurred from inductive load of motors, relays, etc.
- Protection of semiconductor elements against over voltages.

■ 额定值 Ratings

工作温度范围 Operating Temperature Range: -40℃~+125℃ 保存温度范围 Storage Temperature Range: -40℃~+150℃
包装数量/卷 Q'ty/Reel : 2,500pcs

型号 Type	压敏电阻器电压 (允许范围) Varistor Voltage (Range)	最大允许回路电压 Maximum Allowable Voltage		限制电压 Clamping Voltage (V)		最大电能 Maximum Energy (J)	耐浪涌量 Maximum Peak Current 8/20 μs (A) 1time	短时间施加电压 Short-Time Applied Voltage (5min.) (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

本样本手册中记载的产品规格如有变更，恕不一一奉告。订购及使用之前，请仔细确认规格表的内容。
用于车载设备、医疗设备、航空设备以及其他涉及人身安全、或可能引起重大损失的设备上时，请务必事先与我司联系。这些产品在这类用途中出现故障或失灵可能导致人身事故或严重损坏。
Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.
Contact our sales representatives before you use our products for applications including automobiles, medical equipment and aerospace equipment.
Malfunction or failure of the products in such applications may cause loss of human life or serious damage.

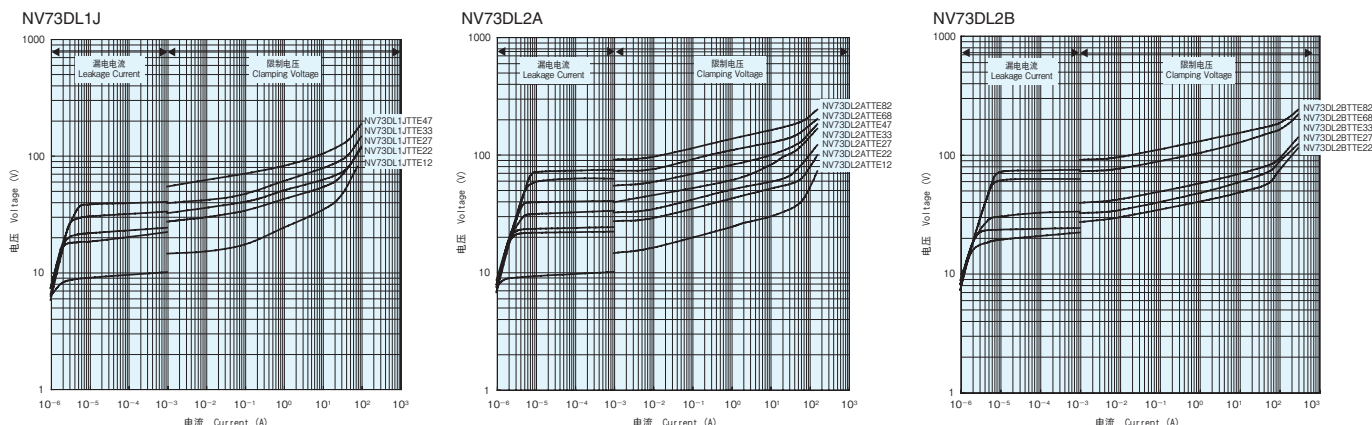
压敏电阻器 Varistors

■ 额定值 (继续) Ratings (Continued)

工作温度范围 Operating Temperature Range: $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$ 保存温度范围 Storage Temperature Range: $-40^{\circ}\text{C} \sim +150^{\circ}\text{C}$
 包装数量/卷 Q'ty/Reel : 2,500pcs

型号 Type	压敏电阻器电压 (允许范围) Varistor Voltage (Range) (V)	最大允许回路电压 Maximum Allowable Voltage		限制电压 Clamping Voltage (V)		最大电能 Maximum Energy (J)	耐浪涌量 Maximum Peak Current	短时间施加电压 Short-Time Applied Voltage (5min.) (V _{Dc})
	V _{1mA}	A.C. (V _{r.m.s.})	D.C. (V)	V _{1A}	V _{2A}		8/20 μ s (A) 1time	
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

■ 电压-电流曲线 Voltage-Current Curves (Reference) (Ta=25°C)



■ 性能 Performance

试验项目 Test Items	标准值 Performance Requirements $\Delta V_{1mA} \pm \%$	试验方法 Test Methods
压敏电阻器电压 Varistor Voltage	在规定的允许偏差以内。 Within specified tolerance	把1mA、10mA流入时的端子间电压。 Voltage between terminals when 1mA and 10mA are flowed.
耐焊接热 Resistance to soldering heat	10	$260 \pm 5^{\circ}\text{C}$, 10s ± 0.5 s
焊接性 Solderability	端子电极95%以上被新的焊接覆盖。 95% coverage min.	$230 \pm 5^{\circ}\text{C}$, 5s ± 0.5 s
温度突变 Rapid change of temperature	10	-40°C (30min.) / $+125^{\circ}\text{C}$ (30min.) 1000cycles
短时间施加电压 Short-time applied voltage	在规定的允许偏差以内。 Within specified tolerance	短时间(5分钟内)能施加的直流电压的最大值(NV73D2A12: 1分钟内)。 Maximum value of D.C. voltage that can be applied for a short period of time. (5min.)
耐浪涌量 Maximum peak current	10	把额定的冲击波电流($T=8 \times 20 \mu\text{s}$), 施加一次。 A single standard impulse current of 8/20 μ s is applied.
最大电能 Maximum energy	10	把额定的能量($T=2\text{ms}$), 施加一次。 A single standard impulse of 2ms, once
耐静电量 Electrostatic discharge	10	25kV (大气放电) (NV73D2A 12: 15kV (大气放电)) 25kV (Non contact) (NV73D2A 12: 15kV (Non contact))
耐振性 Vibration resistance	外观应无显著异常。应无端子电极剥离和主体破损等异常。 No visible damage. No remarkable mechanical damage	振动频率数 Vibration frequency: 10Hz~2000Hz 振幅全振幅 Full amplitude: 1.5mm, 10Hz~2000Hz~10Hz 20min. XYZ方向各4小时, 共12小时 XYZ direction 4hrs for each total 12hrs
施加高温高湿电压 High temperature & high humidity life with d.c bias	10	$85^{\circ}\text{C} \pm 2^{\circ}\text{C}$, 85%RH, 1000h 连续施加压敏电阻器电压(V_{1mA}) $\times 0.85$ Applied voltage: Varistor voltage(V_{1mA}) $\times 0.85$
施加高温直流电压 High temperature life with d.c. bias	10	$125^{\circ}\text{C} \pm 2^{\circ}\text{C}$, 1000h 连续施加压敏电阻器电压(V_{1mA}) $\times 0.85$ Applied voltage: Varistor voltage (V_{1mA}) $\times 0.85$
热冲击试验 Thermal shock	10	-55°C (15min.) / $+125^{\circ}\text{C}$ (15min.) 300cycles
冲击试验 Shock	10	施加半正弦波, 1ms、500m/s ² 5次 Half sine wave, Applied time: 1ms, Applied cycle: 500m/s ² , 5cycles
高温保存 High temperature storage life	10	$+150^{\circ}\text{C}$, 1000h
低温保存 Low temperature storage life	10	-40°C , 1000h