

NL series

- Endurance with ripple current: 12,000 hours at 85°C
- Applications: Professional power supplies, Solar and wind generator and frequency converters
- Detail specification: IEC 60384-4
- RoHS Compliant



SPECIFICATIONS

Items	Characteristics
Category Temperature Range	-25~+85°C(350~450 V _{dc})
Surge Voltage	1.10* V _R
Rated Capacitance Range	1500~15000µF
Rated Voltage Range	350~450 V _{dc}
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)
Leakage Current	I=0.02CV [µA] or 5mA, whichever is smaller. Where, I: Max.leakage current (µA), C : Rated capacitance (µF), V : Rated voltage (V) (at 20°C after 5 minutes)
Dissipation Factor (tanδ)	0.20 (at 20°C, 120Hz)
Low Temperature Characteristics	Capacitance Change C(-25°C)/C(+20°C)≥0.7 (at 120Hz)
Insulation Resistance	When measured between the terminals shorted each other and the mounting clamp on the insulating sleeve covering the case by using an insulation resistance meter of 500V _{dc} , the insulation resistance shall not be less than 100MΩ.
Insulation Withstanding Voltage	When a voltage of 2,000Vac is applied for 1 minute between the terminals shorted each other and the mounting clamp on the insulating sleeve covering the case, there shall not be electrical damage.
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after DC voltage plus the rated ripple current is applied for 12,000 hours at 85°C.
	Capacitance Change ≤±20% of the initial value
	D.F. (tanδ) ≤200% of the initial specified value
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 85°C without voltage applied.
	Capacitance Change ≤±20% of the initial value
	D.F. (tanδ) ≤150% of the initial specified value
	Leakage current ≤The initial specified value

DIMENSIONS(Screw-Mount)[mm]

Sleeve (Pb-free PVC:Black)

∅35 to ∅51.6:G=7
∅64.3 to ∅91:G=6.5

● Mounting Clamp Type:I

∅D	A	B	W	F
35	58.0	44.0	48.0	12.7
51.6	80.0	62.0	68.0	22.2
64.3	93.0	82.0	81.0	28.5
77	106.0	94.0	93.5	31.7

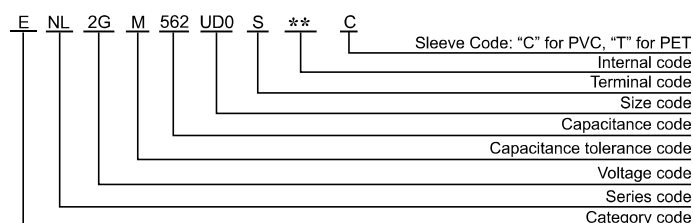
● Mounting Clamp Type:Y

∅D	E	K	J	F
51.6	32.5	35.8	14.0	22.2
64.3	38.4	42.5	14.0	28.5
77	44.5	47.5	14.0	31.7
91	50.8	54.7	14.0	31.7

<Screw specifications>
Plus hexagon-headed screw:
M5x0.8x10 or M6x1.0x12
Maximum screw tightening torque:3.23Nm

* The screw and the mounting clamp are separately supplied and not attached to the product.

PART NUMBERING SYSTEM



RATED RIPPLE CURRENT MULTIPLIERS

- Frequency Coefficient

Frequency(Hz)	50	120	300	1k	3k
Coefficient	0.8	1.0	1.1	1.3	1.4

The endurance of capacitors is shortened with internal heating produced by ripple current at the rate of halving the lifetime with every 5 or 10°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

Screw-mount Terminal Type

NL series

■ STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Case size ΦD×L(mm)	tanδ	ESR typ. 120Hz 20°C mΩ	ESR max. 120Hz 20°C mΩ	Rated ripple current (Arms/85°C, 120Hz)	Part Number
350(2V)	1500	51.6×80	0.20	57	98	6.0	ENL2VM152S80*00C
	2200	51.6×105	0.20	45	78	7.8	ENL2VM222SA5*00C
	3300	64.3×115	0.20	36	53	10.5	ENL2VM332TB5*00C
	3900	64.3×130	0.20	32	47	12.6	ENL2VM392TD0*00C
	4700	76.9×105	0.20	30	43	14.0	ENL2VM472UA5*00C
	5600	76.9×115	0.20	27	37	15.5	ENL2VM562UB5*00C
	6800	76.9×130	0.20	23	34	18.1	ENL2VM682UD0*00C
	8200	76.9×155	0.20	20	28	21.5	ENL2VM822UF5*00C
	10000	91.0×157	0.20	16	24	24.6	ENL2VM103VF7*00C
	12000	91.0×196	0.20	14	22	29.0	ENL2VM123VJ6*00C
15000	91.0×220	0.20	11	18	34.1	ENL2VM153VM0*00C	
400(2G)	1500	51.6×80	0.20	58	89	6.1	ENL2GM152S80*00C
	2200	51.6×115	0.20	56	81	8.2	ENL2GM222SB5*00C
	3300	64.3×130	0.20	37	55	11.6	ENL2GM332TD0*00C
	3900	64.3×155	0.20	29	49	15.5	ENL2GM392TF5*00C
	4700	76.9×115	0.20	26	43	19.4	ENL2GM472UB5*00C
	5600	76.9×130	0.20	25	40	21.3	ENL2GM562UD0*00C
	6800	76.9×155	0.20	20	34	23.4	ENL2GM682UF5*00C
	8200	91.0×157	0.20	19	29	24.2	ENL2GM822VF7*00C
	10000	91.0×168	0.20	13	23	30.3	ENL2GM103VG8*00C
	12000	91.0×196	0.20	11	19	35.5	ENL2GM123VJ6*00C
450(2W)	1500	51.6×115	0.20	56	97	7.1	ENL2WM152SB5*00C
	2200	64.3×115	0.20	43	65	10.5	ENL2WM222TB5*00C
	3300	64.3×143	0.20	33	49	14.8	ENL2WM332TE3*00C
	3900	64.3×155	0.20	29	41	16.5	ENL2WM392TF5*00C
	4700	76.9×143	0.20	22	39	19.8	ENL2WM472UE3*00C
	5600	76.9×168	0.20	20	35	21.9	ENL2WM562UG8*00C
	6800	76.9×196	0.20	18	30	26.4	ENL2WM682UJ6*00C
	8200	91.0×168	0.20	16	24	29.6	ENL2WM822VG8*00C
	10000	91.0×196	0.20	15	21	31.8	ENL2WM103VJ6*00C

Note: "*" may be "A" or "B" or "S" or "T".
 A: Ring clip mounting standard design
 B: Threaded stud standard design
 S: Ring clip mounting special design
 T: Threaded stud special design