

NEL

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About **NEL**

Stumpp Schuele & Somappa Pvt. Ltd. (Electronics Division) – SSS-ED, a part of the USD 55 Million business, have been manufacturing capacitors for the last 40 years. We are the pioneers of capacitor manufacturing in India. Our client list includes among the forerunners in the Indian Automobile, Electrical and Electronics Industry. We take pride in being the single source supplier to some of our coveted customers. We have been a trusted partner to our customers and endeavor to retain this position by continually improving our engineering, quality and service standards.

Quality Assurance

Stumpp, Schuele & Somappa Private Limited endeavors to maintain high quality standards. Our quality standard for Capacitor Manufacturing holds the ISO 9001:2000 certification from KEMA.



We apply stringent specifications for our raw materials and each supply is checked. We ensure quality controls at all manufacturing stages and processes for immediate feedback. Finished products are further inspected prior to packing and shipment to our customers.

Technical Support

The engineers at Stumpp, Schuele & Somappa Private Limited spend considerable time in providing technical support to our customers. Our engineers' role consists of helping our customers choose the right product for their applications and continually work with the products and processes to improve quality and performance.

Technical Specifications for our standard product range is enclosed...



- AC Capacitors -
- DC Capacitors -
- Power Factor Correction Capacitors -
- Ignition Capacitors -
- Metallized Polypropylene -
- Tabular Axial Lead -

NEL's Product Range

SSS-ED has a wide product range to match our customers' requirements.

The products described in the catalogue enclosed represent the standard designs. Special designs can be developed based on customer's specific requirements.

Type - NMC (Motor - Run Condensers)

These capacitors are manufactured using Zinc Alloy Edge Metalised Polypropylene Film and housed in Polypropylene / Aluminium casing and sealed with high graded epoxy resin. These capacitors are of self - Healing type with very Low Dissipation Factor and longer life.

Specification :

Capacitance Range	2.0 Mfd to 50.0 Mfd (others on request)
Capacitance Tolerance	± 5%
Rated Voltage	440 VAC / 400 VAC / 250 VAC / 320 VAC
Test Voltage	
a) Between Terminals	1.5 x Rated Volatge (2 x Rated Voltage)
b) Between Body and Terminals	2000 VAC at 50 HZ foe / Minute minimax
Dissipation Factor (Tan delta)	0.35% at 50 HZ at 20°C
Temperature Range	- 40°C to + 85°C
Envionmental Category	40/85/21
Endurance Test	600 Hrs with 1.25 times rated volatge at 55° c
Self - Healing	In the event of over loads, the capacitors self - heals with out significant change in capacitance
Reference standard	IS : 2993 - 1978 IEC 252 (1993)



Type - NMC (Motor - Run Condensers)

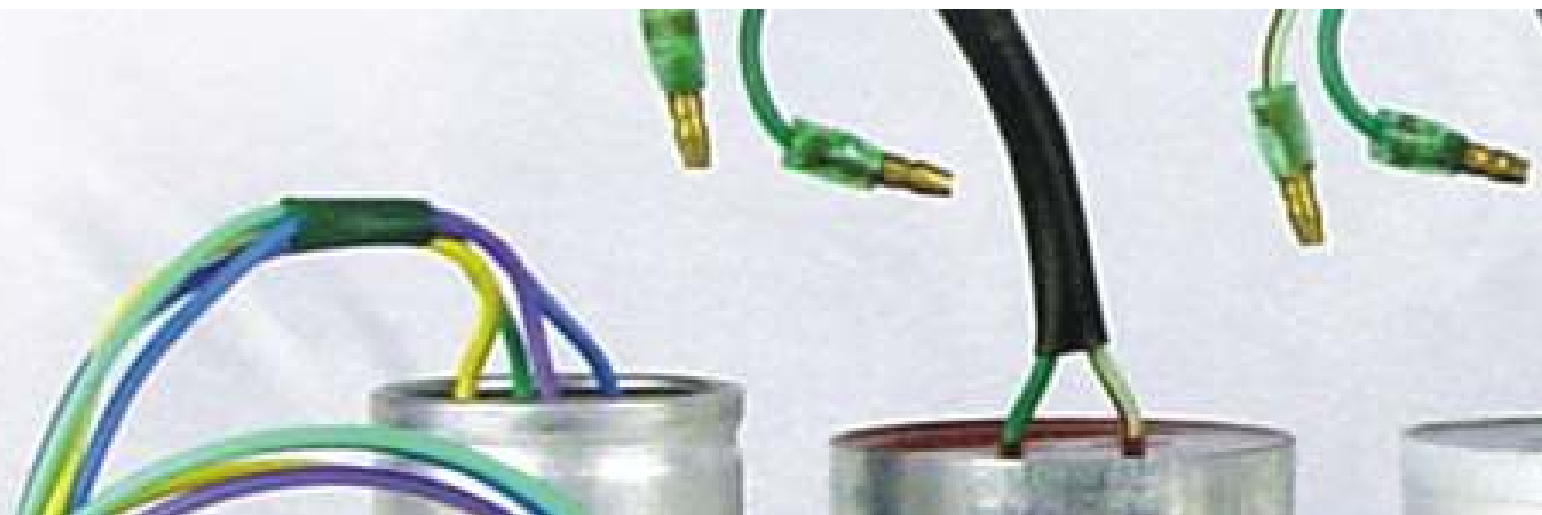
01. Motor - Run Capacitors : (NMC TYPE)

AS PER IS SPECIFICATION 2993 - 1978

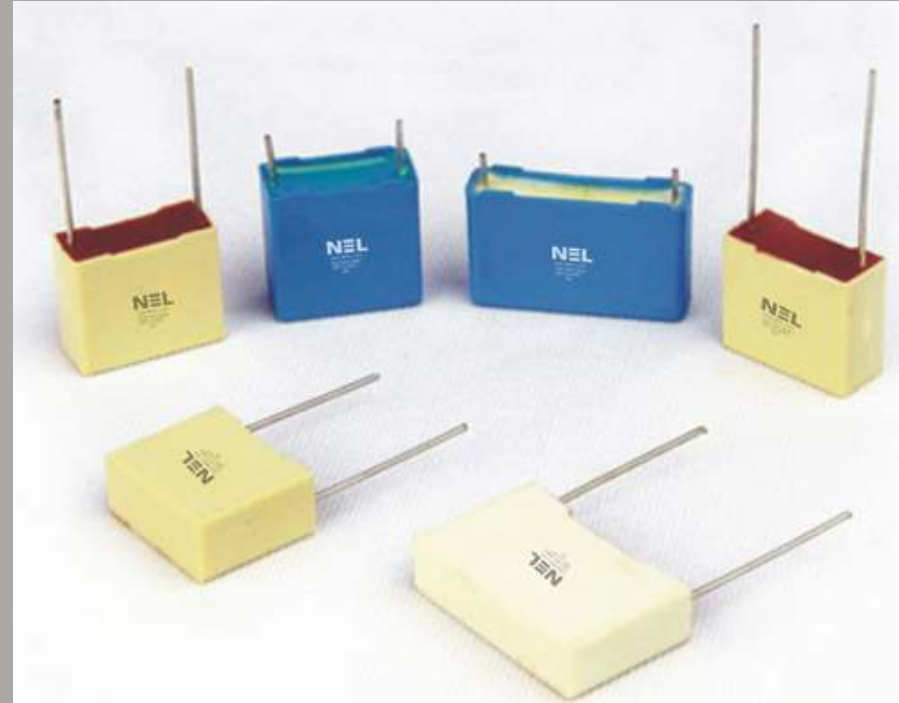
CAPACITANCE VALUE	TOLERANCE	VOLTAGE	P.P. CAN D X L (MAX) (in mm)	AI.CAN D X L (MAX) (in mm)
3.00 MFD	± 5%	400/440 VAC	30 X 52	30 X 54
4.00 MFD	± 5%	400/440 VAC	35 X 72	35 X 75
6.00 MFD	± 5%	400/440 VAC	35 X 72	35 X 75
8.0 MFD	± 5%	400/440 VAC	35 X 72	40 X 75
10.0 MFD	± 5%	400/440 VAC	35/40 X 72	40 X 75
15.0 MFD	± 5%	400/440 VAC	45 X 72/94	45 X 94
20.0 MFD	± 5%	400/440 VAC	40/45 X 94	45 X 94
25.0 MFD	± 5%	400/440 VAC	45 X 94	45 X 94
30.0 MFD	± 5%	400/440 VAC	45 X 128/120	45 X 128
36.0 MFD	± 5%	400/440 VAC	45/50 X 128/120	50 X 128
45.0 MFD	± 5%	400/440 VAC	50/54 X 128/120	50 X 128
50.0 MFD	± 5%	400/440 VAC	54 X 128/120	54 X 128

Application

These capacitors are used for a vareity of AC Application such as Motor Run, Phase corrections and as well in Inverters, Power Suppliers, Air Conditioners , Air Coolers and other appliances where medium duty motors are employed



Type - MD - 2 (Plastic Case Radial Lead)



Type - MD - 2 (Plastic Case Radial Lead)

Application

Used for coupling, decoupling & smoothening in industrial electronics and professional equipments

These Capacitors are manufactured with Aluminium Metalised Polyester Film as dielectric in Radial configuration. They are housed in plastic cases and sealed with epoxy resin. These capacitors are compact in size with self healing properties. Terminations of tinned types wire are brought out radially

Specification :

Capacitance Range	0.0068 MF to 10.0 MF
Capacitance Tolerance	± 5%, ± 10% and ±20%
Rated Voltage	100 VDC, 250 VDC, 400 VDC, 630 VDC and 1000 VDC
Test Voltage	1.5 x Rated Voltage
Dissipation Factor (Tan delta)	< 1% when measured at 1KHz at 20°C
Minimum Insulation Resistance at 500 VDC or at rated voltage whichever is lower	
A) for 100 VDC Capacitor	15,000 M for C ≤ 0.33 MF
Between Terminals	5,000 M MF for C > 0.33 MF
B) for 250 VDC, 400 VDC & 630 VDC Capacitor	30,000 M MF for C ≤ 0.33 MF
Between Terminals	10,000 M MF for C > 0.33 MF
Environmental Category	40/100/56
Temperature Range	- 40°C to + 85°C
Capacitance Stability	± 5%
Reference standard	JSS 50204 pattern CPM 08 / DIN 44112



CAPACITANCE VALUE IN F	100 VDC/63 VAC				250 VDC/160 VAC				400 VDC/200 VAC				630 VDC/220VAC			
	L	H	W	P	L	H	W	P	L	H	W	P	L	H	W	P
0.0047													13.0	10.5	6.0	10.0
0.0068													13.0	10.5	6.0	10.0
0.01					13.0	10.5	6.0	10.0	13.0	9.5	5.0	10.0	13.0	10.5	6.0	10.0
0.015					13.0	10.5	6.0	10.0	13.0	9.5	5.0	10.0	13.0	10.5	6.0	10.0
0.022					13.0	10.5	6.0	10.0	13.0	9.5	5.0	10.0	13.0	12.0	6.0	10.0
0.033					13.0	9.5	5.0	10.0	13.0	9.5	5.0	10.0	13.0	12.0	6.0	10.0
0.047					13.0	9.5	5.0	10.0	13.0	10.5	6.0	10.0	18.0	11.0	6.5	15.0
0.068					13.0	9.5	5.0	15.0	18.0	11.0	6.5	15.0	18.0	12.0	7.0	10.0
0.1					18.0	11.0	6.5	15.0	18.0	11.0	6.5	15.0	18.0	13.0	7.5	15.04
0.15	18	9.5	5.0	10.0	18.0	11.0	6.5	15.0	18.0	12.0	7.0	15.04	27.0	14.1	6.5	22.5
0.22	18	10.5	6.0	10.0	18.0	11.0	6.5	15.0	18.0	14.0	9.0	15.0	27.0	17.5	8.5	22.5
0.33	18	11.0	6.5	15.0	18.0	12.0	7.0	15.0	27.0	14.5	6.5	22.50	27.0	17.5	5.5	22.5
0.47	18	11.0	6.5	15.0	27.0	12.5	8.5	22.50	27.0	17.5	8.5	22.50	32.0	20.0	11.5	27.5
0.68	18	12.0	7.0	15.0	27.0	17.5	8.5	22.50	27.0	17.5	8.5	22.50	32.0	23.5	14.0	27.5
1.0	18	13.5	7.5	15.0	27.0	17.5	8.5	22.50	32.0	17.0	9.0	27.50				
1.5	27	17.5	8.5	22.5	32.0	18.0	11.5	27.50	32.0	20.0	11.5	27.50				
2.2	27	18.0	11.0	22.5	32.0	20.0	11.5	27.50								
3.3	27	18.0	11.0	22.5	32.0	23.5	14.0	27.50								
4.7	32	20.0	11.5	27.50												
6.8	32	23.5	14.0	27.50												
10.0	33	24.0	14.0	28.0												

Other Capacitance values available on request

Note : Termination wire diameters are 0.6/+0.06/-0.05/mm for case length less than or equal to 15 mm, 0.8/+0.08/-0.05/mm for case length equal to 19mm and 1.0/+0.1/-0.05/mm for case length equal to 34 mm

Type - NBC (Ballast Condensers)



These Capacitors are manufactured using Zinc - Alloy High Edge metalised Polypropylene film and housed in Plastic or Aluminum can and sealed with high grade epoxy resin. These capacitors are of self - healing type with very low dissipation factor, high insulation resistance and longer life. These capacitors are fully protected and has superior characteristics at wider operating range.

Specification :

Capacitance Range	3.15 MF to 43 F
Capacitance Tolerance	± 5%, ± 10%:
Rated Voltage	250 VAC, 400 VAC/440 VAC, 300 VAC, 370 VAC
Test Voltage	
a) Between Terminals	1.5 x Rated Voltage at 50 HZ
b) Between Body and Terminals	2000 VAC at 50 HZ for 1 Minute
Insulation Resistance at 500 VDC	
A) Between Terminals	> 10,000 M Micro Farad
B) Between Body and Terminals	10,000 M
Dissipation Factor (Tan delta)	0.35% Max at 50 HZ at 20°C
Temperature Range	- 40°C to + 85°C
Environmental Category	40/85/21
Endurance Test	500 Hrs at 1.25 rated voltage and Temp 75 c° (Class - C)
Self - Healing	In the event of over loads, the capacitors self - heals with out significant change in capacitance:
Reference standard	IS : 1569 - 1976CEE Spec.no - 12,1954

01.Lighting Capacitors : (NBC TYPE)

AS PER IS SPECIFICATION 1569 - 1976

CAPACITANCE VALUE	TOLERANCE	VOLTAGE	P.P. CAN D X L (MAX) (in mm)	Al.CAN D X L (MAX) (in mm)
3.15 MFD	± 5%	440 VAC	30 X 52	30 X 72
4.00 MFD	± 10%	250 VAC	28 X 52	-
8.00 MFD	± 10%	250 VAC	30 X 72	-
10.0 MFD	± 10%	250 VAC	35 X 72	-
12.0 MFD	± 10%	250 VAC	38 X 72	-
15.0 MFD	± 10%	250 VAC	40 X 72	-
20.0 MFD	± 10%	250 VAC	38 X 94	-
25.0 MFD	± 10%	250 VAC	40 X 94	-
33.0 MFD	± 10%	250 VAC	45 X 94	-
43.0 MFD	± 10%	250 VAC	45 X 94	-

Special types on request

Application

These capacitors are used in discharge lamp circuit such as flurosent, high pressure mercury and low pressure sodium vapour lamps



Type - NFC (Fan Condensers)

Ignition Condensers

These Capacitors are manufactured using Zinc Alloy High Edge Metallised Polypropylene Film and housed in Plastic or Aluminum can and sealed with high grade epoxy resin. These capacitors are of self - healing type with very low dissipation factor, high insulation resistance and longer life. These capacitors are fully protected and has superior characteristics at wider operating temperature range



These capacitors are manufactured using plain polyester film and Aluminium foil and housed in a plated MS can and sealed with terminations as per customer requirements



Specification :

Capacitance Tolerance	0.18 MF to 0.32 MF Power factor not to exceed 0.007 @ 1 KHz
Insulation Resistance	> 200 Meg Ohms (Measured on 500 V Megger)
Equivalent Series Resistance	Not to exceed 0.3
Temperature Range	- 55 °C to + 130 °C
Applications	Automobile
Dimension	As per customer drawing

Application

Mechanical Distributors, Alternators Suppressors in Automobile

Specification :

Capacitance Tolerance	± 5%, ± 10% and ± 20%:
Rated Voltage	440 VAC/ 400 VAC at 50 Hz
Test Voltage	1.5 x Rated Voltage
a) Between Terminals	2000 VAC for 1 Minute
b) Between Body and Terminals	2000 VAC for 1 Minute
Dissipation Factor (Tan delta)	0.35% at 50 HZ
Temperature Range	- 40 °C to + 85 °C
Environmental Category	40/80/21
Endurance Test	500 Hrs at 1.25 times rated voltage at 55 °C (Class - C)
Self - Healing	In the event of over loads, the capacitors self - heals with out significant change in capacitance:
Reference standard	IS : 1709 - 1984

ZMPPF -

Zinc Alloy Metalised Polypropylene High Edge Film

01.Fan Capacitors : (NfC TYPE)

AS PER IS SPECIFICATION 1709 - 1986

CAPACITANCE VALUE	TOLERANCE	VOLTAGE	P.P. CAN D X L (MAX) (in mm)	Al.CAN D X L (MAX) (in mm)
1.85 MFD	± 5%	440/400 VAC	27 X 52	28 X 54
2.00 MFD	± 5%	440/400 VAC	27 X 52	28 X 54
2.25 MFD	± 5%	440/400 VAC	30 X 52	30 X 54
2.50 MFD	± 5%	440/400 VAC	30 X 52	30 X 54

Standard Thickness, Width and Metal Free Margin

Thickness	Width	Margin
5 Mic 6 Mic 7 Mic 8 Mic 9 Mic 10 Mic	From 25 to 100mm	1.5 mm/2.5 mm

Tolerance of Slit Width and Free Margin

	Width	Tolerance
Slit Width	25 mm to 37.5 mm 50 mm to 100 mm	± 0.3 mm ± 0.4 mm
Free Margin	20 mm 2.5 mm	± 0.3 mm ± 0.4 mm

Roll - Inner & Outer Diameter

I.D. : 75 mm (core)	Tolerance : +2 mm, - 0 mm
O.D. : 175 mm (core)	Tolerance : +5 mm, - 2,0 or -2 mm
240 mm (core)	Tolerance : +5 mm, - 2,0 or -2 mm

ZMPPF Heavy Edge (Reinforced) Type

Type	Standard Resistance (/ □)	
	Active Area	Heavy Edge
ZMPPF	+ 4.0 8.0 - 3.0	+ 3.5 3.0 - 1.0



- Higher Transmission of electricity than Zn metalised film. ■
- High Self Healing property by thin metal coating on the film. ■
- Long, easy storage caused by the formation of Oxydised AL on the film ■

Application

These capacitors are used for a variety of AC applications with motors such as in fans, circulators, Air Coolers etc

Type - MD (Tabular Axial Lead)

These capacitors are manufactured with aluminum metalised polyester film as dielectric in tubular configuration. They are wrapped with polyester adhesive tape and end sealed with epoxy resin. These capacitors are compact in size with self healing properties. Termination of tinned copper wire is brought out axially

Specification :

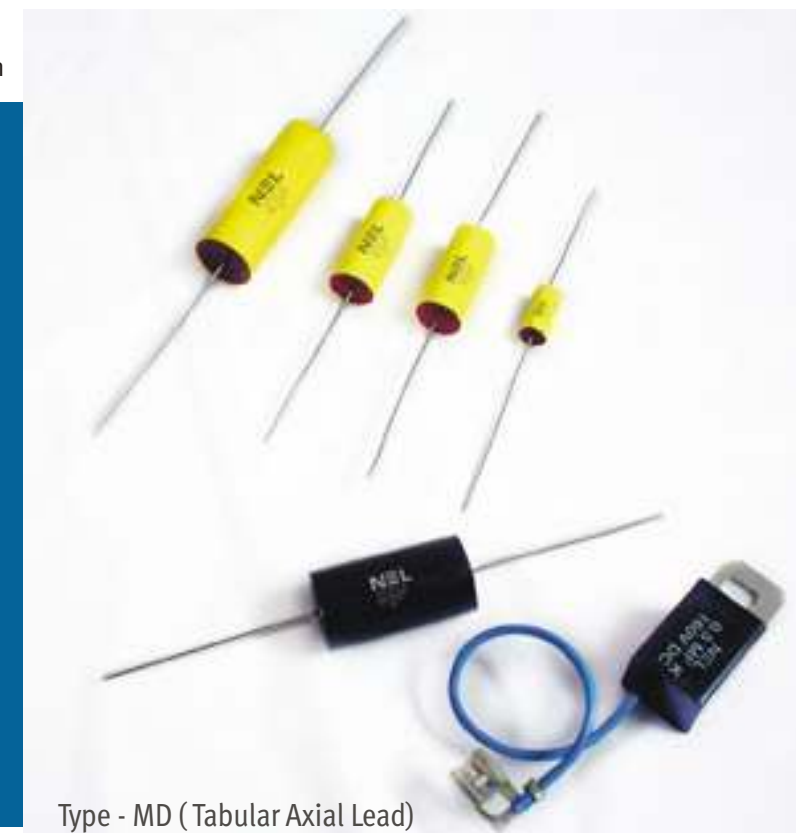
Capacitance Range	0.0047 MF to 10.0 MF
Capacitance Tolerance	± 5% 10% and ±20%
Rated Voltage	63 VDC, 100 VDC, 250 VDC, 400 VDC
Test Voltage	1.5 x Rated Voltage
Dissipation Factor (Tan delta)	< 1% when measured at 1KHz at 20 °C
Minimum Insulation Resistance at 100 VDC	< 1% when measured at 1KHz at 20 °C
A) for 100 VDC Capacitor Between Terminals	15,000 M to C ≤ 0.33 MF 5,000 M MF for C > 0.33 MF
B) for 250 VDC, 400 VDC & 630 VDC Between Terminals	30,000 M to C ≤ 0.33 MF 10,000 M MF for C > 0.33 MF
C) Between body and Terminals	50,000 M
Environmental Category	40/100/56 as per IEC
Temperature Range	- 40°C to + 85°C
Capacitance Stability	+ 5%
Reference standard	JSS 50204 pattern CPM 07

CAPACITANCE VALUE IN F	63V		100V		250V		400V		630V	
	L	D	L	D	L	D	L	D	L	D
0.0047	16.5	6.0	16.5	6.0	16.5	6.0	16.5	6.0	16.5	6.0
0.0068	16.5	6.0	16.5	6.0	16.5	6.0	16.5	6.0	16.5	6.0
0.01	16.5	6.0	16.5	6.0	16.5	6.0	16.5	6.0	16.5	6.0
0.015	16.5	6.0	16.5	6.0	16.5	6.0	16.5	6.0	16.5	6.0
0.022	16.5	6.0	16.5	6.0	16.5	6.0	16.5	6.0	16.5	6.0
0.033	16.5	6.0	16.5	6.0	16.5	6.0	16.5	6.0	20.5	7.5
0.047	16.5	6.0	16.5	6.0	16.5	6.0	20.0	7.0	20.5	8.0
0.068	16.5	6.0	16.5	6.0	16.5	6.0	20.5	7.0	20.5	9.0
0.1	16.5	6.0	16.5	6.0	16.5	6.0	20.5	10.0	30.0	9.0
0.15	16.5	6.0	16.5	6.0	16.5	7.5	20.5	9.0	29.0	10.0
0.22	16.5	6.0	16.5	7.0	16.5	9.0	30.0	8.5	29.0	11.5
0.33	16.5	6.5	16.5	7.5	20.5	9.5	29.0	10.0	35.0	13.0
0.47	16.5	7.5	20.5	7.5	20.5	10.5	29.0	11.5	35.0	15.0
0.68	20.5	7.0	20.5	8.5	29.0	9.0	34.0	12.5	35.0	17.5
1.0	20.5	8.0	25.5	10.0	29.0	13.0	33.0	16.0	35.0	20.5
1.5	20.5	9.5	29.5	10.0	33.0	15.0	34.0	17.5		
2.2	30.0	9.5	29	11.5	33.0	16.0	44.0	16.0		
3.3	29.0	11.0	29.0	16.0	33.0	20.0				
4.7	29.0	12.5	34.0	15.0	44.0	18.5				
6.8	34.0	14.0	34.0	17.5	44.0	21.5				
10.0	34.0	16.5	34.0	20.5	44.0	27.0				

NOTE : (1) Termination diameters are 0.6 / + 0.06 / - 0.05 / mm for case diameter of 8 mm and 0.8 / + 0.08 / - 0.05 / mm for case diameter greater than 8 mm

Application

Used for coupling, decoupling & smoothing in industrial electronics and professional equipments



Type - MD (Tabular Axial Lead)

Type - MD - 1 (Flat Oval Axial Lead)

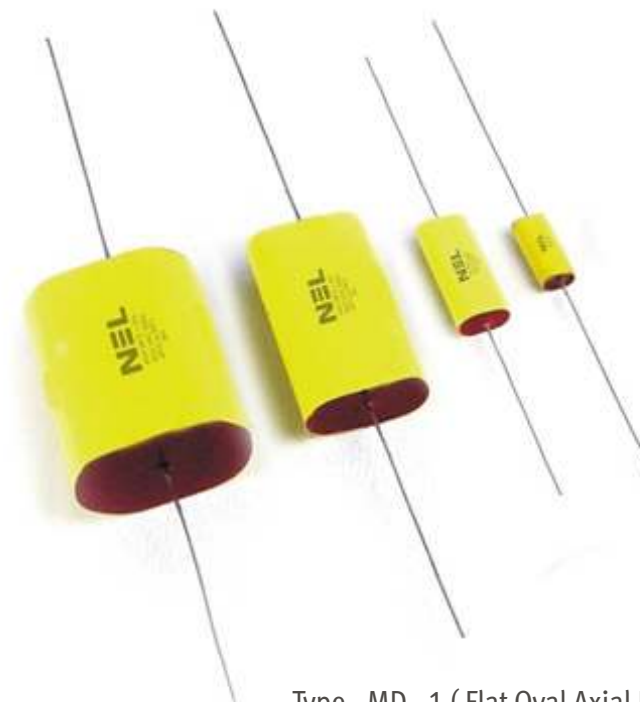
These Capacitors are manufactured with Aluminium Metalised Polyester Film as dielectric in flat configuration. They are wrapped with polyester adhesive tape and end sealed with epoxy resin. These capacitors are compact in size with self healing properties. Terminations of tinned copper wire is brought out axially on either side

Specification :

Capacitance Range	0.0068 MF to 10.0 MF
Capacitance Tolerance	± 5%, ± 10% and ±20%
Rated Voltage	100 VDC, 250 VDC, 400 VDC, 630 VDC and 1000 VDC
Test Voltage	1.5 x Rated Voltage
Dissipation Factor (Tan delta)	< 1% when measured at 1KHz at 20°C ±5°C
Minimum Insulation Resistance at 100 VDC	
A) for 100 VDC Capacitor	> 15,000 M for C ≤ 0.33 MF
Between Terminals	5,000 M MF for C > 0.33 MF
B) for 250 VDC, 400 VDC & 630 VDC	30,000 M MF for C ≤ 0.33 MF
Between Terminals	10,000 M MF for C ≤ 0.33 MF
Environmental Category	40/100/56
Temperature Range	- 40°C to + 100°C
Capacitance Stability	± 5%
Reference standard	JSS 50204 pattern CPM 05

CAPACITANCE VALUE IN F	100 VDC			250 VDC			400 VDC			100 VDC		
	L	H	T	L	H	T	L	H	T	L	H	T
0.001												
0.0047												
0.0068										14.5	7.0	4.5
0.01							14.5	6.5	4.0	14.5	7.0	4.5
0.015				14.5	6.5	4.0	14.5	7.0	4.0	20.0	8.0	4.5
0.022	14.5	6.5	4.0	14.5	7.5	4.5	20.0	8.5	5.0			
0.033	14.5	6.0	3.5	14.5	7.5	4.5	20.0	8.0	4.5	20.0	9.5	6.0
0.047	14.5	6.5	3.5	14.5	8.0	5.0	20.0	9.0	5.0	20.0	10.5	6.5
0.068	14.5	7.0	4.0	20.0	8.0	4.5	20.0	9.5	6.0	20.0	13.5	6.5
0.1	14.5	7.5	4.5	20.0	8.0	5.5	20.0	10.0	7.0	20.0	15.0	8.5
0.15	20.0	8.5	4.5	20.0	9.5	6.5	20.0	13.5	8.0	33.0	13.0	7.0
0.22	20.0	8.5	5.0	20.0	10.5	7.5	20.0	15.0	8.5	33.0	14.5	8.5
0.33	20.0	9.0	6.0	20.0	14.0	7.5	33.0	13.5	7.5	33.0	15.0	10.5
0.47	20.0	10.0	7.0	20.0	15.5	9.0	33.0	14.5	8.5	33.0	20.5	11.0
0.68	20.0	11.5	8.5	33.0	13.5	7.5	33.0	15.5	9.0	33.0	23.5	14.0
1.0	20.0	13.5	10.5	33.0	15.0	9.0	33.0	20.5	11.0	33.0	26.5	17.0
1.5	33.0	11.0	8.0	33.0	16.0	11.5	33.0	24.0	14.5			
2.2	33.0	13.0	10.0	33.0	21.0	11.5	33.0	27.5	18.0			
3.3	33.0	14.5	11.5	33.0	24.5	15.0						
4.7	33.0	18.5	14.0	33.0	27.5	18.0						
6.8	33.0	21.0	16.5									
10.0	33.0	27.5	18.0									

NOTE : (1) Termination diameters are 0.6 / + 0.06 / - 0.05 / mm for case diameter of 14.5 mm or less , 0.8 / + 0.08 / - 0.05 / mm for case length of 20 mm and 1.0 (+0.1/0.05) mm for case length of 33mm



Type - MD - 1 (Flat Oval Axial Lead)

Application

Used for coupling, decoupling & smoothening in industrial electronics and professional equipments