Resin Dipped, Solid Tantalum Capacitors

NDTM Series

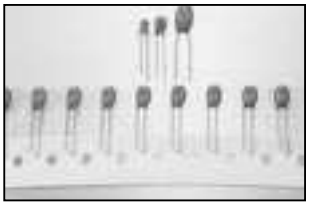
FEATURES

- FLUIDIZED BED PROCESS
- NEW REDUCED SIZES
- FLAME RETARDANT COATING
- LOW LEAKAGE CURRENT AND IMPEDANCE
- EXCEPTIONAL TEMPERATURE STABILITY

RoHS Compliant

includes all homogeneous materials

*See Part Number System for Details



SPECIFICATIONS

Capacitance Range:	0.1µF ~ 330µF						
Capacitance Tolerance:	± 20% (M), ± 10% (K)						
Rated Voltage (VDC):	6.3	10	16	20	25	35	50
Surge Voltage (VDC):	8	13	20	26	36	46	65
Temperature Range:	-55°C ~ +85°C (+125°C with Derating)						
Dissipation Factor: (120hz, +25°C) Tan δ	Capacitance Range	Tan δ					
	0.1 ~ 1.5µF	Less than 4%					
	2.2 ~ 6.8µF	Less than 6%					
	10 ~ 68µF	Less than 8%					
	100 ~ 330µF	Less than 10%					
Reliability:	1% per 1000 hrs. at 85°C with 0.1Ω/V series impedance, 60% confidence leve						

DERATED VOLTAGE AND SURGE VOLTAGE

Rated Voltage (VDC)	+85°C:	6.3	10	16	20	25	35	50
Derated Voltage (VDC)	+125°C:	4	6.3	10	13	16	23	33
Surge Voltage (VDC)	+85°C:	8	13	20	26	33	46	65
Derated Surge Voltage (VDC)	+125°C:	5	9	12	16	21	28	40

Maximum Leakage Current (µA) @ 25˚C After 3 minutes

Cap	Rated Voltage (VDC)						
(µF)	6.3V	10V	16V	20V	25V	35V	50V
0.1	-	-	-	-	-	0.5	0.5
0.15	-	-	-	-	-	0.5	0.5
0.22	-	-	-	-	-	0.5	0.5
0.33	-	-	-	-	-	0.5	0.5
0.47	-	-	-	-	-	0.5	0.5
0.68	-	-	-	-	-	0.5	0.5
1.0	-	-	-	0.5	0.5	0.5	0.5
1.5	-	-	0.5	0.5	0.5	0.5	0.6
2.2	-	0.5	0.5	0.5	0.5	0.6	0.8
3.3	0.5	0.5	0.5	0.5	0.6	0.9	1.3
4.7	0.5	0.5	0.6	0.7	0.9	1.3	1.8
6.8	0.5	0.5	0.8	1.0	1.3	1.9	2.7
10	0.5	0.8	1.2	1.6	2.0	2.8	4.0
15	0.8	1.2	1.9	2.4	3.0	4.2	6.0
22	1.1	1.7	2.8	3.5	4.4	6.1	8.8
33	1.7	2.6	4.2	5.2	6.6	9.2	-
47	2.4	3.7	6.0	7.5	9.4	10.0	-
68	3.4	5.4	8.7	10.8	13.6	-	-
100	5.0	8.0	12.8	16.0	-	-	-
150	7.6	12.0	19.2	-	-	-	-
220	11.0	17.6	20.0	-	-	-	-
330	16.6	20.0	-	-	-	-	-

Max. ESR (ohm) @ 100Khz and 25˚C

Cap	Rated Voltage (VDC)						
(µF)	6.3V	10V	16V	20V	25V	35V	50V
0.1	-	-	-	-	-	26.0	26.0
0.15	-	-	-	-	-	21.0	21.0
0.22	-	-	-	-	-	17.0	17.0
0.33	-	-	-	-	-	15.0	15.0
0.47	-	-	-	-	-	13.0	13.0
0.68	-	-	-	-	-	10.0	10.0
1.0	-	-	-	10.0	10.0	8.0	8.0
1.5	-	-	10.0	9.0	8.0	6.0	6.0
2.2	-	13.0	8.0	7.0	6.0	5.0	3.5
3.3	13.0	10.0	6.0	5.5	5.0	4.0	3.0
4.7	10.0	8.0	5.0	4.5	4.0	3.0	2.5
6.8	8.0	6.0	4.0	3.6	3.1	2.5	2.0
10	6.0	5.0	3.2	2.9	2.5	2.0	1.6
15	5.0	3.7	2.5	2.3	2.0	1.6	1.2
22	3.7	2.7	2.0	1.8	1.5	1.3	1.0
33	3.0	2.1	1.6	1.4	1.2	1.0	-
47	2.0	1.7	1.3	1.2	1.0	0.8	-
68	1.8	1.3	1.0	0.9	0.8	-	-
100	1.6	1.0	0.8	0.6	-	-	-
150	0.9	0.8	0.6	-	-	-	-
220	0.9	0.6	0.5	-	-	-	-
330	0.7	0.5	-	-	-	-	-

PRECAUTIONS

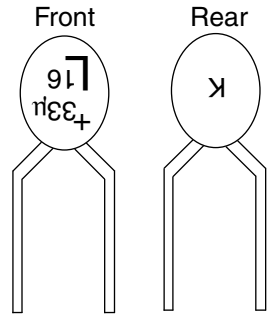
Please review the notes on correct use, safety and precautions found on **pages T10 & T11** of NIC's **Electrolytic Capacitor catalog**.
Also found at **www.niccomp.com/precautions**
If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: **tpmg@niccomp.com**

DIMENSIONS (mm)

Diameter	Figure And Part No.	Lead Spacings	Lead Length	Lead Diameter (d)
4.5 ~ 8.0	1 Standard	2.5±0.5	16±4	0.5±0.05
4.5 ~ 8.0	2 Optional (F2) Style	5.0±1.0	16±4	0.5±0.05
8.5 ~ 10.0	2 Standard	5.0±1.0	16±4	0.5±0.05

OUTLINE DRAWINGS AND DIMENSIONS

MARKING: (Note: μ represents decimal point for values below 1μF)



STANDARD PRODUCTS AND CASE SIZE TABLE Dϕ X H (mm)

Cap (μF)	Code	Rated Voltage (Vdc)						
		6.3	10	16	20	25	35	50
0.1	104	-	-	-	-	-	4.5x7.0	4.5x7.0
0.15	154	-	-	-	-	-	4.5x7.0	4.5x7.0
0.22	224	-	-	-	-	-	4.5x7.0	4.5x7.0
0.33	334	-	-	-	-	-	4.5x7.0	4.5x7.0
0.47	474	-	-	-	-	-	4.5x7.0	4.5x7.0
0.68	684	-	-	-	-	-	4.5x7.0	4.5x7.5
1.0	105	-	-	-	4.5x7.0	4.7x7.0	4.5x7.0	5.0x8.5
1.5	155	-	-	4.5x7.0	4.5x7.0	4.5x7.0	4.5x7.0	5.0x9.0
2.2	225	-	4.5x7.0	4.5x7.0	4.5x7.0	4.5x7.0	4.5x7.5	5.5x9.0
3.3	335	4.5x7.0	4.5x7.0	4.5x7.0	4.5x7.5	4.5x7.5	5.0x8.5	6.0x10.0
4.7	475	4.5x7.0	4.5x7.0	4.5x7.5	5.0x8.5	5.0x8.5	5.5x9.0	6.5x10.0
6.8	685	4.5x7.0	4.5x7.5	5.0x8.5	5.0x9.0	5.0x9.0	6.0x10.0	7.0x10.5
10	106	4.5x7.5	5.0x8.5	5.0x9.0	5.5x9.0	5.5x9.0	6.0x10.0	8.0x13.0
15	156	5.0x8.5	5.0x9.0	5.5x9.0	6.0x10.0	6.0x10.0	7.0x10.5	8.5x14.0
22	226	5.0x9.0	5.5x9.0	6.0x10.0	7.0x10.5	7.0x10.5	8.5x14.0	9.0x14.0
33	336	5.5x9.0	6.0x10.0	6.0x10.0	8.0x13.0	8.0x13.0	9.0x14.5	-
47	476	6.0x10.0	6.5x10.0	8.0x13.0	8.5x14.0	9.0x14.5	9.0x16.0	-
68	686	6.5x10.0	7.0x10.5	9.0x14.0	9.0x16.0	9.0x16.0	-	-
100	107	7.0x10.5	8.5x14.0	9.0x16.0	9.0x16.0	-	-	-
150	157	8.5x14.0	9.0x16.0	9.0x16.0	-	-	-	-
220	227	9.0x14.5	10.0x17.0	10.0x18.5	-	-	-	-
330	337	10.0x17.0	10.0x18.5	-	-	-	-	-

FIG. 1

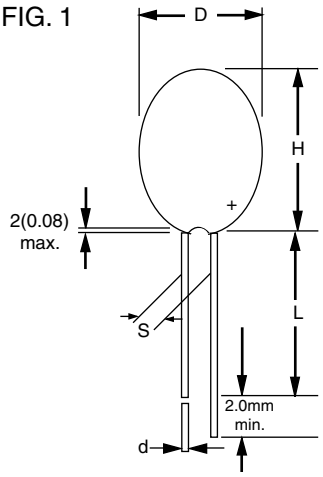
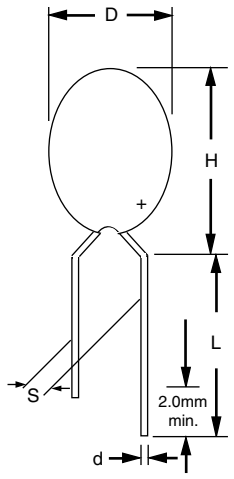


FIG. 2

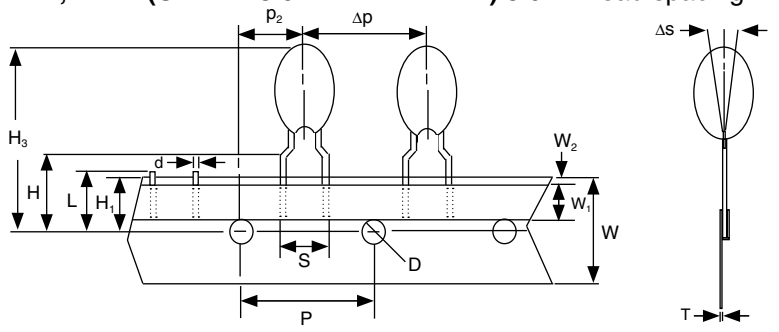


PART NUMBER SYSTEM

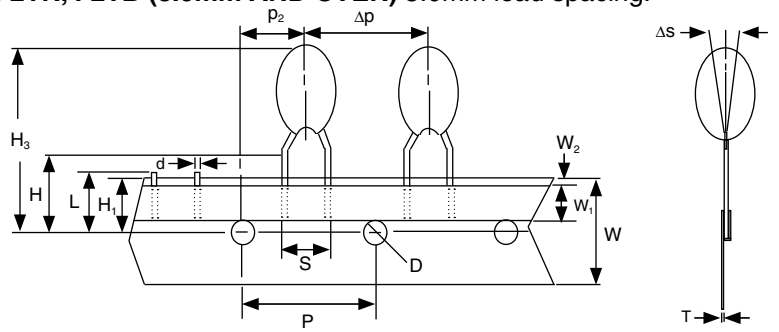
NDTM 106 K 16 F1 TR F

- F — RoHS compliant
- TR — Tape and Reel (optional)
- F1 — Special Lead Forming
- 16 — Working Voltage
- K — Tolerance Code M=20%, K=10%
- 106 — Capacitance Code in pF, first 2 digits are significant, third digit is no. of zeros
- NDTM — Series

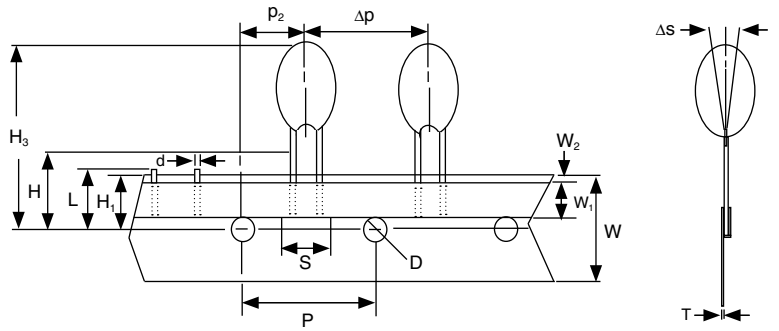
F2TR, F2TB (UNDER 8.0mm DIAMETER) 5.0mm lead spacing.



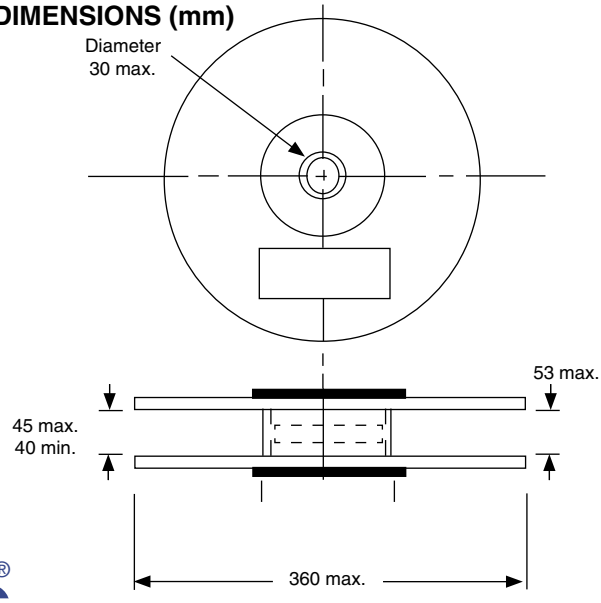
F2TR, F2TB (8.0mm AND OVER) 5.0mm lead spacing.



F1TR, F1TB 2.5mm lead spacing.



REEL DIMENSIONS (mm)



TAPING DIMENSIONS (mm)

Code	Dimensions
P	12.7±0.3
P1	5.50±1.0
P2	6.35±0.4
▫P	±1.0
d	0.5±0.05
S	F2TR,F2TB=5.0 F1TR,F1TB=2.5
Δh	±2.0
D	4.0±0.2
W	± 1.0 18 - 0.5
W1	6.0 min.
W2	1.0 max.
H	16±0.5 19±1.0
H1	9.0±0.5
H2	18.0
H3	32.25
L	11.0 max.
T	0.7±0.2

Parts with diameters up to 9.0mm are available packaged on tape. Larger diameter parts are bulk only.

PACKAGING QUANTITIES

Case Size	Reel	Ammo
4.5x7.0	1000-1500	3000
4.5x7.5	1000-1250	3000
5.0x8.5	1000-1250	3000
5.0x9.0	1000-1250	3000
5.5x9.0	1000	2500
6.0x10.0	1000	2500
6.5x10.0	750	2500
7.0x10.5	750	2000
8.0x13.0	750	----------
8.5x14.0	500	----------
9.0x14.0	500	----------
9.0x14.5	500	----------