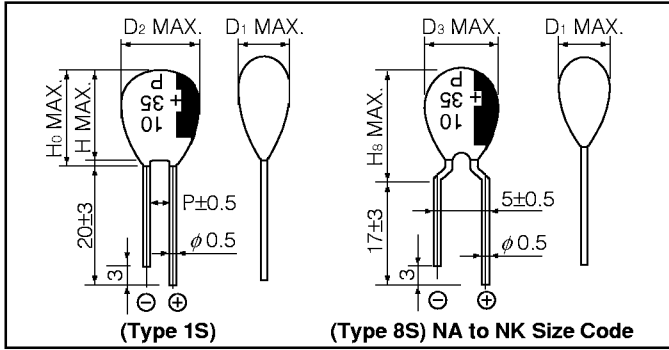


DN Series Tantalum Chip Capacitors

DIMENSIONS [mm]



Size Code	D ₁	D ₂	H	H ₀	D ₃ *	H _s	P
NA	3.0	3.6	5.4	6.2	4.4	8.9	2.5
NB	3.0	3.6	5.7	6.5	4.4	9.2	"
NC	3.2	3.6	5.9	6.7	4.4	9.4	"
ND	3.4	3.8	6.5	7.3	4.4	10.0	"
NE	3.7	4.0	7.0	7.8	4.4	10.5	"
NF	4.2	4.5	7.4	8.2	4.5	10.9	"
NG	4.4	4.7	7.9	8.7	4.7	11.4	"
NH	4.9	5.2	8.4	9.2	5.2	11.9	"
NJ	5.2	5.4	9.4	10.2	5.4	12.9	"
NK	7.0	7.0	11.0	11.8	7.0	14.5	"
NL	8.5	8.5	12.5	14.5	-	-	5.0
NM	9.0	9.0	13.5	15.5	-	-	"
NN	10.0	10.0	15.5	17.5	-	-	"
NO	10.0	10.0	16.5	18.5	-	-	"
NP	10.0	10.0	17.0	19.0	-	-	"

DC rated voltage μF	4	6.3	10	16	20	25	35	50
0.1							NA	NA
0.15							NA	NB
0.22							NA	NB
0.33							NB	NC
0.47							NB	NC
0.68							NB	NE
1						NB	NC	NF
1.5					NB	NC	ND	NG
2.2				NB	NC	ND	NE	NH
3.3			NB	NC	ND	NE	NF	NJ
4.7		NB	NC	ND	NE	NF	NG	NK
6.8	NB	NC	ND	NE	NF	NG	NH	NL
10	NC	ND	NE	NF	NG	NH	NJ	NM
15	ND	NE	NF	NG	NH	NJ	NL	NN
22	NE	NF	NG	NH	NJ	NL	NM	NP
33	NF	NG	NH	NJ	NK	NM	NN	
47	NG	NH	NJ	NK	NL	NN	NO	
68	NH	NJ	NK	NL	NM	NN		
100	NJ	NK	NL	NM	NN			
150	NK	NL	NM	NN				
220	NL	NM	NN					
330	NM	NN						
470	NN							

PERFORMANCE CHARACTERISTICS

Operating temperature range
-55 to +85°C with no voltage derating

Surge voltage

Rated voltage	4	6.3	10	16	20	25	35	50
Surge	5	8	13	20	26	32	46	65

Capacitance (at 25°C, 120 Hz)

Range 0.1 to 470 μF
Tolerance ±20%, ±10%

Capacitance change with temperature

Not to exceed -12% at -55°C, and +10% at 85°C

Tangent of loss angle (at 25°C, 120 Hz)

0.1 μF to 1.0 μF less than 0.04
1.5 μF to 6.8 μF less than 0.06
10 μF to 68 μF less than 0.08
100 μF to 330 μF less than 0.10
470 μF less than 0.12

DC leakage current (at 25°C)

0.01 C•V* μA or 0.5 μA whichever is greater

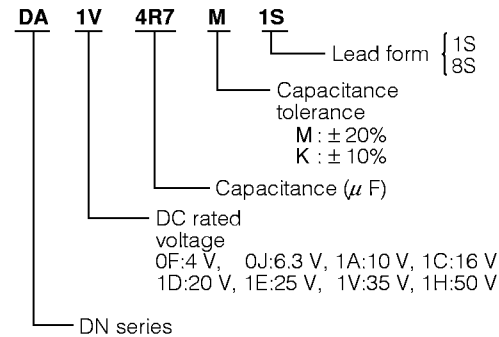
Damp heat (90 to 95% RH at 40°C, 21 days (504 h))

Capacitance change ±5%
Tangent of loss angle initial requirements
DC Leakage current initial requirements

Endurance (at 85°C, DC rated voltage, 1000 h)

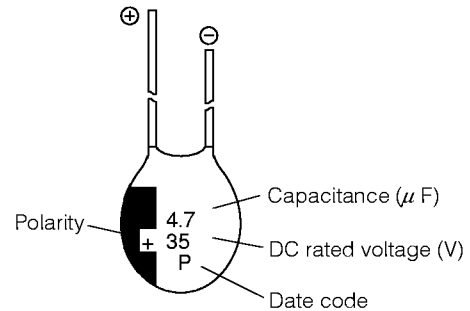
Capacitance change ±10%
Tangent of loss angle initial requirements
DC Leakage current initial requirements

PART NUMBER SYSTEM



MARKINGS

The standard marking shows capacitance, DC rated voltage, and polarity.



* : Product of capacitance in μF and voltage in V.

STANDARD RATINGS

Part Number	Capacitance (μF)	Size Code	DC Leakage Current (μA)	Tangent of Loss Angle
50 V Rating				
DN1H0R1	0.1	NA	0.5	0.04
DN1HR15	0.15	NB	0.5	0.04
DN1HR22	0.22	NB	0.5	0.04
DN1HR33	0.33	NC	0.5	0.04
DN1HR47	0.47	ND	0.5	0.04
DN1HR68	0.68	NE	0.5	0.04
DN1H010	1	NF	0.5	0.04
DN1H1R5	1.5	NG	0.7	0.06
DN1H2R2	2.2	NH	1.1	0.06
DN1H3R3	3.3	NJ	1.6	0.06
DN1H4R7	4.7	NK	2.3	0.06
DN1H6R8	6.8	NL	3.4	0.06
DN1H100	10	NM	5.0	0.08
DN1H150	15	NN	7.5	0.08
DN1H220	22	NP	11.0	0.08
35 V Rating				
DN1V0R1	0.1	NA	0.5	0.04
DN1VR15	0.15	NA	0.5	0.04
DN1VR22	0.22	NA	0.5	0.04
DN1VR33	0.33	NB	0.5	0.04
DN1VR47	0.47	NB	0.5	0.04
DN1VR68	0.68	NB	0.5	0.04
DN1V010	1	NC	0.5	0.04
DN1V1R5	1.5	ND	0.5	0.06
DN1V2R2	2.2	NE	0.7	0.06
DN1V3R3	3.3	NF	1.1	0.06
DN1V4R7	4.7	NG	1.6	0.06
DN1V6R8	6.8	NH	2.3	0.06
DN1V100	10	NJ	3.5	0.08
DN1V150	15	NL	5.2	0.08
DN1V220	22	NM	7.7	0.08
DN1V330	33	NN	11.5	0.08
DN1V470	47	NO	16.4	0.08
25 V Rating				
DN1E010	1	NB	0.5	0.04
DN1E1R5	1.5	NC	0.5	0.06
DN1E2R2	2.2	ND	0.5	0.06
DN1E3R3	3.3	NE	0.8	0.06
DN1E4R7	4.7	NF	1.1	0.06
DN1E6R8	6.8	NG	1.7	0.06
DN1E100	10	NH	2.5	0.08
DN1E150	15	NJ	3.7	0.08
DN1E220	22	NL	5.5	0.08
DN1E330	33	NM	8.2	0.08
DN1E470	47	NN	11.7	0.08
DN1E680	68	NO	17.0	0.08
20 V Rating				
DN1D1R5	1.5	NB	0.5	0.06
DN1D2R2	2.2	NC	0.5	0.06
DN1D3R3	3.3	ND	0.6	0.06
DN1D4R7	4.7	NE	0.9	0.06
DN1D6R8	6.8	NF	1.3	0.06
DN1D100	10	NG	2.0	0.08
DN1D150	15	NH	3.0	0.08
DN1D220	22	NJ	4.4	0.08
DN1D330	33	NK	6.6	0.08
DN1D470	47	NL	9.4	0.08
DN1D680	68	NM	13.6	0.08
DN1D101	100	NN	20.0	0.10

Part Number	Capacitance (μF)	Size Code	DC Leakage Current (μA)	Tangent of Loss Angle
16 V Rating				
DN1C2R2	2.2	NB	0.5	0.06
DN1C3R3	3.3	NC	0.5	0.06
DN1C4R7	4.7	ND	0.7	0.06
DN1C6R8	6.8	NE	1.0	0.06
DN1C100	10	NF	1.6	0.08
DN1C150	15	NG	2.4	0.08
DN1C220	22	NH	3.5	0.08
DN1C330	33	NJ	5.0	0.08
DN1C470	47	NK	7.5	0.08
DN1C680	68	NL	10.8	0.08
DN1C101	100	NM	16.0	0.10
DN1C151	150	NN	24.0	0.10
10 V Rating				
DN1A3R3	3.3	NB	0.5	0.06
DN1A4R7	4.7	NC	0.5	0.06
DN1A6R8	6.8	ND	0.6	0.06
DN1A100	10	NE	1.0	0.08
DN1A150	15	NF	1.5	0.08
DN1A220	22	NG	2.2	0.08
DN1A330	33	NH	3.3	0.08
DN1A470	47	NJ	4.7	0.08
DN1A680	68	NK	6.8	0.08
DN1A101	100	NL	10.0	0.10
DN1A151	150	NM	15.0	0.10
DN1A221	220	NN	22.0	0.10
6.3 V Rating				
DN0J4R7	4.7	NB	0.5	0.06
DN0J6R8	6.8	NC	0.5	0.06
DN0J100	10	ND	0.6	0.08
DN0J150	15	NE	0.9	0.08
DN0J220	22	NF	1.3	0.08
DN0J330	33	NG	2.0	0.08
DN0J470	47	NH	2.9	0.08
DN0J680	68	NJ	4.2	0.08
DN0J101	100	NK	6.3	0.10
DN0J151	150	NL	9.4	0.10
DN0J221	220	NM	13.8	0.10
DN0J331	330	NN	20.7	0.10
4 V Rating				
DN0F6R8	6.8	NB	0.5	0.06
DN0F100	10	NC	0.5	0.08
DN0F150	15	ND	0.6	0.08
DN0F220	22	NE	0.8	0.08
DN0F330	33	NF	1.3	0.08
DN0F470	47	NG	1.8	0.08
DN0F680	68	NH	2.7	0.08
DN0F101	100	NJ	4.0	0.10
DN0F151	150	NK	6.0	0.10
DN0F221	220	NL	8.8	0.10
DN0F331	330	NM	13.2	0.10
DN0F471	330	NN	18.8	0.12

NOTES : In the [], capacitance tolerance, and in the (), lead form will be coded by the part number system.