Miniature Aluminum Electrolytic Capacitors

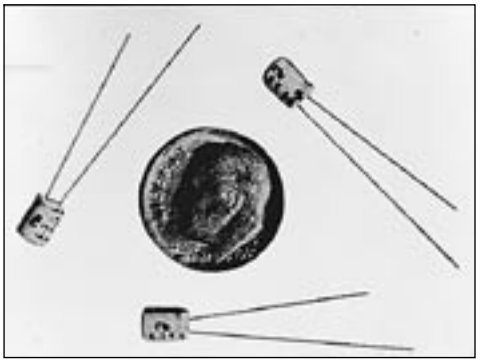
NSR Series

FEATURES

- LOW PROFILE SIZING (5mm) .200" HEIGHT
- SPACE SAVING AT COMPETITIVE PRICING

RoHS Compliant

*See Part Number System for Details



CHARACTERISTICS

Rated Working Voltage Range	4 ~ 50Vdc							
Capacitance Range	0.1 ~ 470µF							
Operating Temperature Range	-40°C~+85°C							
Capacitance Tolerance	±20% (M)							
Max. Leakage Current After 1minutes At 20°C	0.01CV or 3µA Whichever is greater							
Surge Voltage & Dissipation Factor (Tan δ)	W.V. (Vdc)	4	6.3	10	16	25	35	50
	S.V. (Vdc)	5	8	13	20	32	44	63
	Tan δ @ 120Hz	0.35	0.24	0.20	0.16	0.14 (8ϕ=0.15)	0.12	0.10
Low Temperature Stability (Impedance Ratio @ 120Hz)	W.V. (Vdc)	4	6.3	10	16	25	35	50
	Z-20°C/Z+20°C	7	4	3	2	2	2	2
	Z-40°C/Z+20°C	15	10	8	6	4	4	4
Life Test @ +85°C 1,000 hours	Capacitance Change	Within ±25% of initial value						
	Dissipation Factor	Less than 200% of specified maximum value						
	Leakage Current	Less than specified maximum value						

MAXIMUM PERMISSIBLE RIPPLE CURRENT (mA rms) AT 85°C/120 KHz

Cap (µF)	Working Voltage (Vdc)						
	4	6.3	10	16	25	35	50
0.1							1.0
0.22							2.3
0.33							3.5
0.47							5.0
1.0							10
2.2						8.4	15
3.3					10	17	18
4.7				12	19	20	23
10		13	17	25	28	30	34
22		31	35	39	52	54	54
33	26	39	43	57	63	68	
47	34	47	59	68	73	73	
100	61	71	76	86	110		
220	82	90	90				
330	85	92					
470	145						

MAXIMUM ESR (Ω) AT 20°C/120Hz

Cap (µF)	Working Voltage (Vdc)						
	4	6.3	10	16	25	35	50
0.1							1659
0.22							754
0.33							503
0.47							353
1.0							166
2.2						90.5	75.4
3.3					70.4	60.3	50.3
4.7				56.5	49.4	42.4	35.3
10		39.8	33.2	26.5	23.2	19.9	16.6
22		18.1	15.1	12.1	10.6	9.00	7.50
33	17.6	12.1	10.1	8.00	7.00	6.00	
47	12.4	8.50	7.10	5.60	4.90	4.20	
100	5.80	4.00	3.30	2.70	2.49		
220	2.60	1.80	1.50				
330	1.80	1.20					
470	1.23						

RIPPLE CURRENT CORRECTION FACTOR

Frequency (Hz)		120	1K	10K	100K
Correction Factor	3 x 5/4 x 5	1.00	1.30	1.50	1.60
	5 x 5	1.00	1.20	1.30	1.35
	6.3 x 5	1.00	1.15	1.20	1.25
	8 x 5	1.00	1.13	1.15	1.20

PART NUMBERING SYSTEM

NSR 100 M 35V 5 x 5 TR F

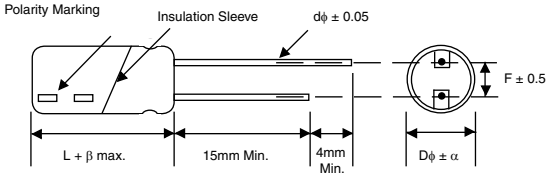
- F — Pb Free/RoHS Compliant
- TR — Tape and Reel
- 5 x 5 — Size (DØ x L)
- 35V — Rated Voltage
- M — Tolerance Code
- 100 — Capacitance Code
- NSR — Series

*"F" suffix denotes RoHS compliant parts

STANDARD PRODUCTS AND CASE SIZE TABLE Dϕ x L (mm)

Cap(µF)	Code	Working Voltage (Vdc)						
		4	6.3	10	16	25	35	50
0.1	R10							3 x 5
0.22	R22							3 x 5
0.33	R33							3 x 5
0.47	R47							3 x 5
1.0	1R0							3 x 5
								4 x 5
2.2	2R2						3 x 5	3 x 5
								4 x 5
3.3	3R3					3 x 5	3 x 5	3 x 5
								4 x 5
4.7	4R7				3 x 5	3 x 5	4 x 5	5 x 5
10	100		3 x 5	3 x 5	3 x 5	5 x 5	5 x 5	6.3 x 5
					4 x 5			
22	220		4 x 5	5 x 5	5 x 5	6.3 x 5	6.3 x 5	6.3 x 5
33	330	4 x 5	5 x 5	5 x 5	6.3 x 5	6.3 x 5	6.3 x5	
47	470	4 x 5	5 x 5	6.3 x 5	6.3 x 5	6.3 x 5	6.3 x 5	
100	101	5 x 5	6.3 x 5	6.3 x 5	6.3 x 5	8 x 5		
220	221	6.3 x 5	6.3 x 5	6.3 x 5				
330	331	6.3 x 5	6.3 x 5					
470	471	8 x 5						

DIMENSIONS (mm)



SLEEVE COLOR: DARK BLUE

LEAD SPACING AND DIAMETER (mm)

Case Dia. (DØ)	3	4	5	6.3	8*
Leads Dia. (dØ)	0.4	0.45	0.45	0.45	0.45
Lead Spacing (F)	1.0	1.5	2.0	2.5	2.5*
Dim. α	0.5	0.5	0.5	0.5	0.5
Dim. β	1.0	1.0	1.0	1.0	1.0

* NOTE THAT LEAD SPACING OF 8x5mm SIZE IS 2.5mm.