

FEATURES

- CYLINDRICAL LEADLESS TYPE FOR SURFACE MOUNTING
- VERY LOW IMPEDANCE AT 100KHz (**Up to 60% lower than NACZ**)
- WIDE TEMPERATURE RANGE (-55 +105°C)
- **REDUCED SIZE (Up to 50% smaller than NACZ)**
- DESIGNED FOR AUTOMATIC MOUNTING AND REFLOW SOLDERING



CHARACTERISTICS

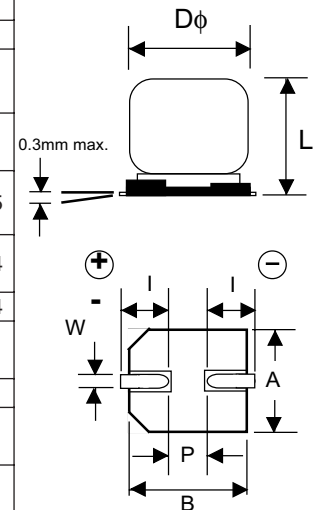
Rated Voltage Range	6.3 ~ 100 Vdc										
Rated Capacitance Range	3.3 ~ 6800µF										
Operating Temp. Range	-55 ~ +105°C										
Capacitance Tolerance	±20%(M)										
Max. Leakage Current after 2 Minutes @ 20°C	0.01CV or 3µA, whichever is greater										
Max. Tanδ @ 120Hz/20°C	W.V. (Vdc)		6.3	10	16	25	35	50	63	80	100
	S.V. (Vdc)		8.0	13	20	32	44	63	79	100	125
	All Case Sizes	C ≤ 1000µF	0.26	0.19	0.16	0.14	0.12	0.10	0.08	0.08	0.07
		C = 2200µF	-	0.21	-	0.16	-	-	-	-	-
		C = 3300µF	0.30	-	0.20	0.18	-	-	-	-	-
C = 4700µF		-	0.25	0.22	-	-	-	-	-	-	
Low Temperature Stability Impedance Ratio @ 120Hz	Z-25°C/Z +20°C		2	2	2	2	2	2	2	2	2
	Z-40°C/Z +20°C		3	3	3	3	3	3	3	3	3
	Z-55°C/Z +20°C		4	4	4	3	3	3	3	3	3
Load Life Test @ 105°C 4~10mm Dia 2,000 Hours 12.5~18mm Dia 5,000 Hours	Capacitance Change		Within ± 30% of initial measured value								
	Tanδ		Less than 200% of specified max. value								
	Leakage Current		Less than specified max. value								

LOW ESR COMPONENT
LIQUID ELECTROLYTE
For Performance Data
see www.LowESR.com

SURFACE MOUNT

STANDARD PRODUCTION SIZE DØ xL

Cap (µF)	Code	Working Voltage (Vdc)								
		6.3	10	16	25	35	50	63	80	100
3.3	3R3	-	-	-	-	-	-	-	5x6.1	-
4.7	4R7	-	-	-	-	4x6.1	4x6.1	5x6.1	6.3x6.1	-
10	100	-	-	4x6.1	4x6.1	4x6.1	5x6.1	6.3x6.1	6.3x8	-
						5x6.1	6.3x6.1		8x6.5	
22	220	4x6.1	4x6.1	4x6.1	5x6.1	5x6.1	6.3x6.1	6.3x8	8x10.5	8x10.5
				5x6.1				8x6.5		
33	330	-	4x6.1	-	5x6.1	6.3x6.1	6.3x6.1	6.3x8	8x10.5	10x10.5
			5x6.1		6.3x6.1			8x6.5		
47	470	4x6.1	-	5x6.1	6.3x6.1	6.3x6.1	8x6.5	8x10.5	10x10.5	12.5x14
		5x6.1		6.3x6.1						
68	680	-	-	-	-	-	-	-	-	12.5x14
100	101	5x6.1	-	6.3x6.1	6.3x8	6.3x8	8x10.5	10x10.5	12.5x14	16x17
		6.3x6.1			8x6.5	8x10.5				
150	151	-	-	-	-	-	-	-	12.5x14	16x17
220	221	6.3x6.1	6.3x8	6.3x8	8x10.5	8x10.5	10x10.5	12.5x14	-	18x17
			8x6.5	8x6.5						
330	331	6.3x8	8x10.5	8x10.5	8x10.5	10x10.5	12.5x14	-	16x17	18x17
		8x6.5								
390	391	-	-	-	-	-	12.5x14	-	-	-
470	471	8x10.5	8x10.5	8x10.5	10x10.5	12.5x14	-	16x17	18x17	-
680	681	-	8x10.5	10x10.5	-	12.5x14	16x17	18x17	-	-
1000	102	8x10.5	10x10.5	-	12.5x14	-	16x17	-	-	-
1500	152	10x10.5	-	12.5x14	-	16x17	-	-	-	-
2200	222	-	12.5x14	-	16x17	-	-	-	-	-
3300	332	12.5x14	-	16x17	18x17	-	-	-	-	-
4700	472	-	16x17	18x17	-	-	-	-	-	-
6800	682	16x17	18x17	-	-	-	-	-	-	-



SEE PAGE 38
For Case Size Data
SEE PAGE 39
For Taping/Packaging Data

MAXIMUM IMPEDANCE (Ω AT 20°C AND 100KHz)

Cap (μF)	Working Voltage (Vdc)								
	6.3	10	16	25	35	50	63	80	100
3.3	-	-	-	-	-	-	-	5.0	-
4.7	-	-	-	-	1.35	2.9	3.0	3.0	-
10	-	-	1.35	1.35	1.52	1.52	1.5	2.4	-
					0.70	0.88		2.4	
22	1.35	1.35	1.35	0.70	0.70	0.88	1.2	1.3	1.3
			0.70				1.2		
33	-	1.35	-	0.70	0.36	0.68	0.65	1.3	0.7
		0.70		0.36		0.68			
47	1.35	-	0.70	0.36	0.36	0.68	0.65	0.7	0.32
	0.70		0.36						
68	-	-	-	-	-	-	-	-	0.32
100	0.70	-	0.36	0.34	0.34	0.34	0.35	0.32	0.17
	0.36			0.26	0.16				
150	-	-	-	-	-	-	-	0.32	0.17
220	0.36	0.34	0.34	0.16	0.16	0.18	0.16	-	0.153
		0.26	0.26						
330	0.34	0.16	0.16	0.16	0.08	0.12	-	0.17	0.153
	0.26								
390	-	-	-	-	-	0.12	-	-	-
470	0.16	0.16	0.16	0.08	0.06	-	0.082	0.153	-
680	-	0.16	0.08	-	0.06	0.073	0.08	-	-
1000	0.16	0.08	-	0.06	-	0.073	-	-	-
1500	0.08	-	0.06	-	0.035	-	-	-	-
2200	-	0.06	-	0.035	-	-	-	-	-
3300	0.06	-	0.035	0.033	-	-	-	-	-
4700	-	0.035	0.033	-	-	-	-	-	-
6800	0.035	0.033	-	-	-	-	-	-	-

MAXIMUM PERMISSIBLE RIPPLE CURRENT (mA rms AT 100KHz AND 105°C)

Cap (μF)	Working Voltage (Vdc)								
	6.3	10	16	25	35	50	63	80	100
3.3	-	-	-	-	-	-	-	25	-
4.7	-	-	-	-	90	60	50	40	-
10	-	-	90	90	90	85	80	60	-
					160	165		60	
22	90	90	90	160	160	165	120	130	130
			160				120		
33	-	90	-	160	240	195	250	130	200
		160		195					
47	90	-	160	240	240	195	250	200	500
	160		240						
68	-	-	-	-	-	-	-	-	500
100	160	-	240	280	280	350	400	500	793
	240			300	600				
150	-	-	-	-	-	-	-	500	793
220	240	160	280	600	600	670	800	-	917
		300	300						
330	280	600	600	600	850	900	-	793	917
	300								
390	-	-	-	-	-	900	-	-	-
470	600	600	600	850	1100	-	1410	917	-
680	-	600	850	-	1100	1610	1690	-	-
1000	600	850	-	1100	-	1610	-	-	-
1500	850	-	1100	-	1800	-	-	-	-
2200	-	1100	-	1800	-	-	-	-	-
3300	1100	-	1800	2060	-	-	-	-	-
4700	-	1800	2060	-	-	-	-	-	-
6800	1800	2060	-	-	-	-	-	-	-

SURFACE MOUNT

RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Frequency	60Hz	120Hz	1KHz	10KHz	100KHz
Correction Factor	0.7	0.75	0.9	0.95	1.0

RIPPLE CURRENT TEMPERATURE CORRECTION FACTOR

Temperature	-55°C ~ +85°C	> 85°C
Correction Factor	1.4	1.0

