

## FEATURES

- CYLINDRICAL LEADLESS TYPE FOR SURFACE MOUNTING
- HIGH CAPACITANCE VALUES (UP TO 6800 $\mu$ F)
- LOW IMPEDANCE & HIGH RIPPLE CURRENT AT 100KHZ
- 12.5mm x 17mm ~ 18mm x 22mm Size
- WIDE TERMINATION STYLE FOR HIGH VIBRATION APPLICATIONS
- LONG LIFE (5000 HOURS AT +105°C)
- COMPATIBLE WITH REFLOW SOLDERING



**LOW ESR COMPONENT**  
 LIQUID ELECTROLYTE  
 For Performance Data  
 see [www.LowESR.com](http://www.LowESR.com)

## CHARACTERISTICS

Rated Voltage Range		6.3 ~ 100 Vdc							
Rated Capacitance Range		47 ~ 6800 $\mu$ F							
Operating Temperature Range		- 40°C ~ + 105°C							
Capacitance Tolerance		± 20% (M)							
Max. Leakage Current After 2 Minutes		0.01CV or 3 $\mu$ A whichever is greater							
Working Voltage		6.3Vdc	10Vdc	16Vdc	25Vdc	35Vdc	50Vdc	63Vdc	100Vdc
Surge Voltage		8.0Vdc	13Vdc	20Vdc	32Vdc	44Vdc	63Vdc	79Vdc	125Vdc
Max. Tan $\delta$ at 120Hz & 20°C		0.22	0.19	0.15	0.14	0.12	0.10	0.08	0.07
Low Temperature Stability (Impedance Ration @ 120Hz)	Z -25°C/Z +20°C	2	2	2	2	2	2	2	2
	Z -40°C/Z +20°C	3	3	3	3	3	3	3	3
	Z -55°C/Z +20°C	4	4	4	4	4	4	4	4
High Temperature Load Life 5000 Hours at +105°C Rated WVDC	Capacitance Change	Within ± 20% of initial measured value							
	Tan $\delta$	Less than 200% of specified value							
	Leakage Current	Less than the specified maximum value							
Resistance to Soldering Heat Within the Recommended Reflow Conditions	Capacitance Change	Within ± 10% of initial measured value							
	Tan $\delta$	Less than the specified maximum value							
	Leakage Current	Less than the specified maximum value							

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

Cap ( $\mu$ F)	Working Voltage (Vdc)							
	6.3	10	16	25	35	50	63	100
47								511
68							1020	511
100							1020	511
220						1150	1410	917
330					1205	1610	1690	1230
470				1205	1690	1900	2290	
1000		1205	1690	2000	2000	2420		
2200	1690	1690	2000	2490	2490			
3300	2000	2000	2490	2060	2490			
4700	2205	2490						
6800	2490	2490						

## MAXIMUM IMPEDANCE ( $\Omega$ AT 100KHz AND 20°C)

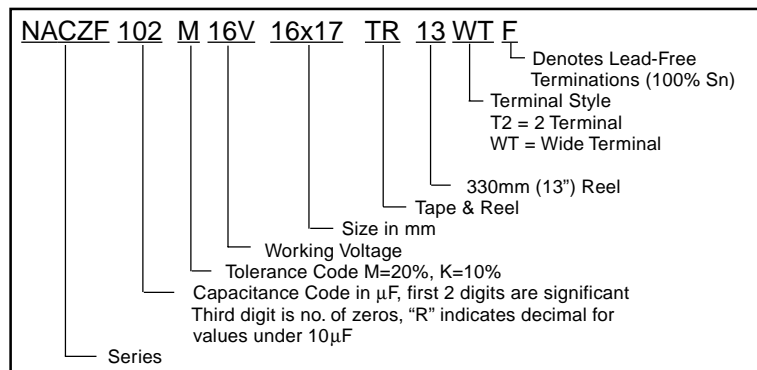
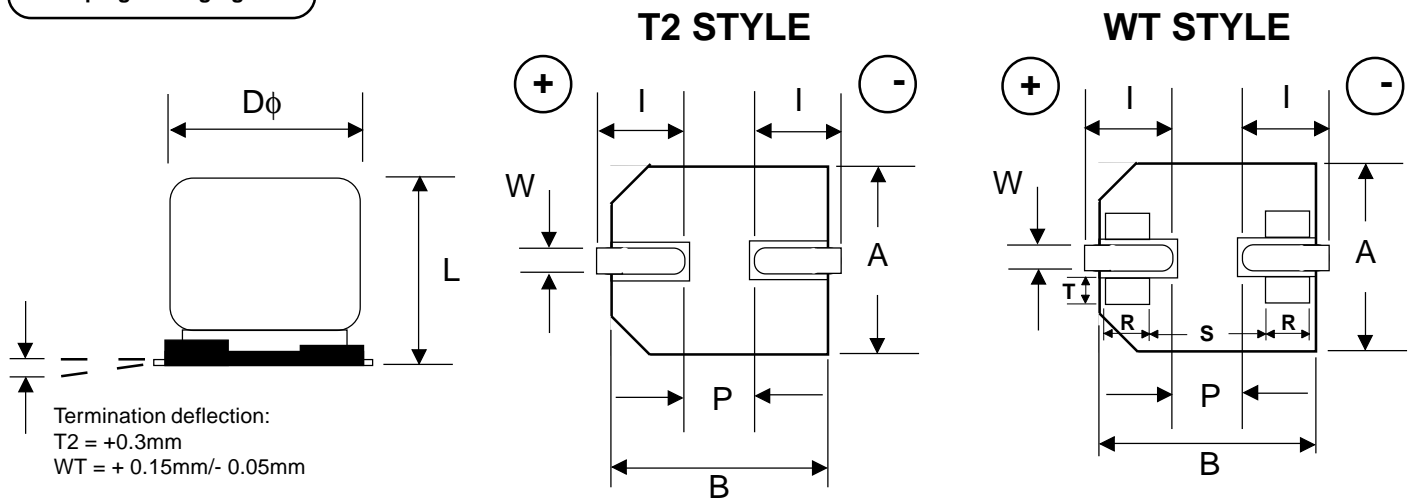
Cap ( $\mu$ F)	Working Voltage (Vdc)							
	6.3	10	16	25	35	50	63	100
47								0.150
68							0.150	0.150
100							0.150	0.090
220						0.110	0.090	0.086
330					0.065	0.080	0.086	0.055
470				0.065	0.043	0.068	0.055	
1000		0.065	0.043	0.038	0.038	0.042		
2200	0.043	0.043	0.038	0.028	0.028			
3300	0.038	0.038	0.028	0.033	0.028			
4700	0.029	0.028						
6800	0.028	0.028						

## STANDARD PRODUCT AND CASE SIZE TABLE DØxL (mm)

Cap (µF)	Code	Working Voltage (Vdc)							
		6.3	10	16	25	35	50	63	100
47	470								12.5x17
68	680							12.5x17	12.5x17
100	101							12.5x17	16x17
220	221						12.5x17	16x17	18x17
330	331					12.5x17	16x17	18x17	18x22
470	471				12.5x17	16x17	18x17	18x22	
1000	102		12.5x17	16x17	18x17	18x17	18x22		
2200	222	16x17	16x17	18x17	18x22	18x22			
3300	332	18x17	18x17	18x22	18x17**	18x22			
4700	472	16x22	18x22						
6800	682	18x22	18x22						

Note: \*\*DF 0.18

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



SURFACE MOUNT