

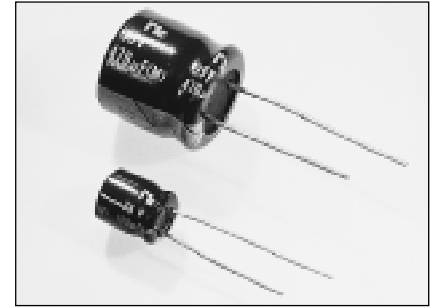
REDUCED SIZE, EXTENDED RANGE  
LOW PROFILE, RADIAL LEAD, POLARIZED

### FEATURES

- LOW PROFILE APPLICATIONS
- HIGH STABILITY AND PERFORMANCE

### CHARACTERISTICS

Rated Voltage Range	6.3 ~ 50 VDC						
Capacitance Range	220 ~ 10,000 $\mu$ F						
Operating Temperature Range	-40 ~ +85°C						
Capacitance Tolerance	$\pm$ 20%						
Max. Leakage Current @ (20°C)	After 1 min.	0.03CV or 4 $\mu$ A , whichever if greater					
	After 2 min.	0.01CV or 3 $\mu$ A , whichever if greater					
Max. Tan $\delta$ @ 120Hz/20°C	W.V. (Vdc)	6.3	10	16	25	35	50
	S.V. (Vdc)	8	13	20	32	44	63
	C $\leq$ 1,000 $\mu$ F	0.28	0.24	0.20	0.16	0.14	0.12
	C = 2,200 $\mu$ F	0.30	0.26	0.22	0.18	0.16	
	C = 3,300 $\mu$ F	0.32	0.28	0.24	0.20		
	C = 4,700 $\mu$ F	0.34	0.30	0.26			
	C = 6,800 $\mu$ F	0.36	0.32				
Low Temperature Stability Impedance Ratio @ 120Hz	Z-25°C/Z+20°C	5	4	3	2	2	2
	Z-40°C/Z+20°C	12	10	8	5	4	3
Load Life Test at Rated W.V. 85°C 2,000 Hours	Capacitance Change	Within $\pm$ 25% of initial measured value					
	Tan $\delta$	Less than 200% of specified maximum value					
	Leakage Current	Less than specified maximum value					



LEADED

### STANDARD PRODUCTS AND CASE SIZE D $\phi$ x L (mm)

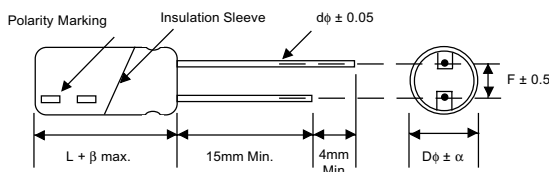
Cap ( $\mu$ F)	Code	Working Voltage (Vdc)					
		6.3	10	16	25	35	50
220	221					10 x 9	
330	331				10 x 9		
470	471			10 x 9			16 x 16
1000	102	10 x 9				16 x 16	16 x 20
2200	222			16 x 16	16 x 16	18 x 20	18 x 20
3300	332	16 x 16	16 x 16		18 x 20		
4700	472	16 x 16		18 x 20			
6800	682		18 x 20				
10,000	103	18 x 20					

### PERMISSIBLE RIPPLE CURRENT (mA rms) AT 120Hz/+85°C

Cap ( $\mu$ F)	Working Voltage (Vdc)					
	6.3	10	16	25	35	50
220					300	
330				350		
470			400			700
1000	500				1000	1000
2200	850	950	1100	1250	1500	
3300	1200	1250	1400	1700		
4700	1400	1550	1700			
6800	1600	1850				
10,000	2000					

### LEAD SPACING AND DIAMETER

Case Dia. (D $\phi$ )	5	6.3	8	10	12.5	16	18
Leads Dia. (d $\phi$ )	0.5	0.5	0.6	0.6	0.6	0.8	0.8
Lead Spacing (F)	2.0	2.5	3.5	5.0	5.0	7.5	7.5
Dim. $\alpha$	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Dim. $\beta$	1.5	1.5	1.5	1.5	1.5	2.0	2.0



SLEEVE COLOR: BLACK

### MAXIMUM ESR ( $\Omega$ ) AT 120Hz 120Hz/20°C

Cap ( $\mu$ F)	Working Voltage (Vdc)					
	6.3	10	16	25	35	50
220					1.06	
330				0.80		
470			0.70			0.42
1000	0.46				0.23	0.20
2200	0.23	0.20	0.17	0.13	0.12	
3300	0.16	0.14	0.12	0.10		
4700	0.12	0.11	0.09			
6800	0.09	0.08				
10,000	0.06					

NRELS 102 M 35V 16X16 F

