

FEATURES

- SOLID ELECTROLYTE
- LOWEST ESR & HIGHEST RIPPLE CURRENT AT 100KHz
- CAPACITANCE VALUES UP TO 1,500 μ F
- 8x11.5mm ~ 10x12.5mm CASE SIZES, RADIAL LEADS
- LEAD FREE AND PVC FREE CONSTRUCTION



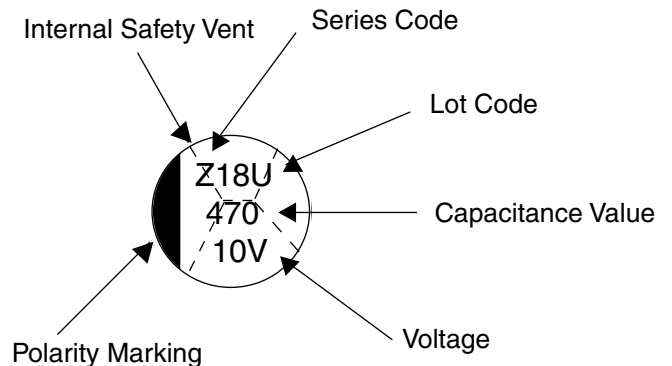
CHARACTERISTICS

Rated Voltage Range	2.5 ~ 25 Vdc	
Rated Capacitance Range	68 ~ 1,500 μ F	
Operating Temp. Range	-55 ~ +105°C	
Capacitance Tolerance	\pm 20%(M)	
Max. Leakage Current After 2 Minutes @ 20°C	Less than 0.2CV	
Working and Surge Voltage Ratings	W.V. (Vdc)	4.0 6.3 10 16 20 25
	S.V. (Vdc)	4.6 7.2 11.5 18.4 23.0 28.75
Low Temperature Stability Impedance Ratio @ 100KHz	Z -25°C/Z +20°C	\leq 1.15
	Z -55°C/Z +20°C	\leq 1.25
Tan δ @ 120Hz/20°C	All Case Sizes	0.12
Load LifeTest @ 105°C 2,000 Hours	Capacitance Change	Within \pm 20% of initial measured value
	Tan δ	Within 150% of specified max. value
	ESR	Within 150% of specified max. value
	Leakage Current	Less than specified max. value

STANDARD PRODUCTS AND CASE SIZES (mm)

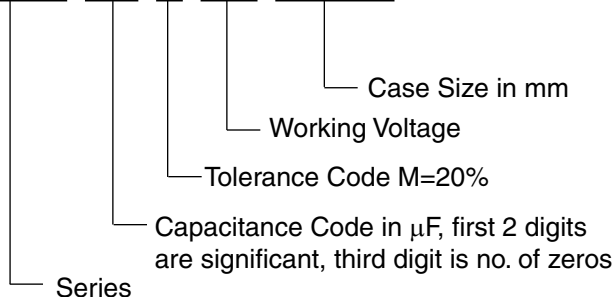
Cap (μ F)	Code	Working Voltage (Vdc)							Case Size
		2.5	4.0	6.3	10	16	20	25	
68	680	-	-	-	-	-	-	-	8x11.5
100	101	-	-	-	-	-	8x11.5	10x12.5	
150	151	-	-	-	-	-	10x12.5	-	
180	181	-	-	-	-	8x11.5	-	-	
220	221	-	-	-	8x11.5	-	-	-	
270	271	-	-	-	8x11.5	-	-	-	
330	331	-	-	-	-	10x12.5	-	-	
390	391	-	-	8x11.5	-	-	-	-	
470	471	-	-	8x11.5	10x12.5	-	-	-	
560	561	-	8x11.5	-	-	-	-	-	
680	681	8x11.5	-	10x12.5	-	-	-	-	
820	821	8x11.5	10x12.5	10x12.5	-	-	-	-	
1000	102	10x12.5	-	-	-	-	-	-	
1200	122	-	10x12.5	-	-	-	-	-	
1500	152	10x12.5	-	-	-	-	-	-	

PART MARKING



PART NUMBERING SYSTEM

NSPZR 331 M 16V 10X12.5



STANDARD VALUES AND SPECIFICATIONS

Voltage (Vdc)	Cap. (μF)	Max. ESR (mΩ) 20°C/100K~300KHz	Ripple Current (mA) 105°C/100KHz
2.5	680	10	5,230
	820	10	5,230
	1000	10	5,230
	1500	8	5,500
4	560	10	5,230
	820	8	5,500
	1200	8	5,500
6.3	390	12	4,770
	470	12	4,770
	680	10	5,500
	820	10	5,500
10	220	14	4,420
	270	14	4,420
	470	12	5,300
16	180	16	4,360
	330	14	5,050
20	100	24	3,320
	150	20	4,320
25	68	24	3,320
	100	20	4,320

RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Frequency	1KHz	10KHz	100KHz ~ 500KHz
Multiplier	0.35	0.60	1.0

DIAMETER AND LEADSPACE (mm)

Case Dia. (D ϕ)	8	10
Lead Spacing (F)	3.5	5.0
Leads Dia. (d ϕ)	0.6	0.6
Dim. α	0.5	
Dim. β	1.5	

