



MN 系列 Series

特点 Features

- 耐高纹波,尺寸可调, 105°C 2000小时, 可用于大功率电源、UPS不间断电源、变频器等电路中。
High ripple current, Size may be selected, Load life of 2000 hours at 105°C.
Used large power source, Uninterruptible power supplies, Frequency converter circuit .etc.
- RoHS指令已对应完毕。Adapted to the RoHS directive.



主要技术性能 Specifications

项目 Items	特性 Performance Characteristics	
使用温度范围 Operating Temperature Range	-40~+105°C	-25~+105°C
额定电压范围 Rated Voltage Range	25~100 V	160~450 V
标称容量允许偏差 Nominal Capacitance Tolerance	±20% (120Hz, +20°C)	
漏电流 Leakage Current	$I < 0.01CV(\mu A)$ 或5mA 5分钟 取较小值 (at 20°C, after 5 minutes, Whichever is smaller)	
损耗角正切值(tgδ) Dissipation Factor (+20°C, 120Hz)	小于图表中规定的数值 Less than the value specified in the standard products tables	
温度特性 Temperature Characteristics (Impedance ratio at 120Hz)	Rated Voltage (V)	25~50 63~100 160~250 350~450
	Z-25°C/Z+20°C	4 3 5 8
	Z-40°C/Z+20°C	12 10
高温贮存 Shelf Life	+105°C, 1000小时贮存后, 加额定工作电压处理30分钟, 恢复16小时后: After storage for 1000 hours at +105°C, UR to be applied for 30 minutes and then resumed for 16 hours: 电容量变化率 Capacitance change : ±20%初始测量值以内 ±20% of the initial measured value 漏电流 Leakage current : ≤初始规定值 ≤Initial specified value 损耗角正切值 Dissipation factor : ≤2倍初始规定值 ≤2times of the initial specified value	

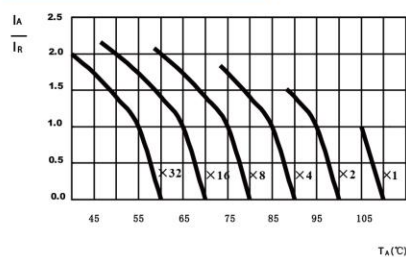
	使用寿命 (Useful Life)		负载寿命 (Load Life)	耐久性测试 (Endurance Test)
寿命时间(Lifetime)	4000h	> 200000h	2000h	2000h
漏电流(Leakage Current)	≤初始规定值 Not more than specified value		≤初始规定值 Not more than specified value	≤初始规定值 Not more than specified value
电容量变化率(Capacitance Change)	±30%初始测量值内 Within ±30% initial value		±20%初始测量值内 Within ±20% initial value	±10%初始测量值内 Within ±10% initial value
损耗角正切值(Dissipation Factor)	≤3倍初始规定值 Not more than 300% of specified value		≤2倍初始规定值 Not more than 200% of specified value	≤1.3倍初始规定值 Not more than 130% of specified value
应用条件(Condition) 应用电压(Applied Voltage) 应用电流(Applied Current) 应用温度(Applied Temperature) 失效率(Outlier Percentage)	U_a I_a 105°C ≤1%	U_a $1.2 \times I_a$ 40°C ≤1%	U_a I_a 105°C 0%	U_a IR=0 105°C IEC60384

纹波电流的相关参数 Multiplier for Ripple Current

频率系数 Frequency Coefficient

Frequency (Hz) Rated Voltage (V)	50	100 (120)	300	1k	3k	10K	≥20K
25~50	0.95	1.00	1.04	1.10	1.12	1.15	1.15
63~100	0.95	1.00	1.06	1.16	1.22	1.30	1.36
160~450	0.80	1.00	1.10	1.25	1.35	1.50	1.55

寿命时间图 Life Time Graph



此图表示电容的使用寿命时间
The graphs shows a typical trend of the standard capacitor useful life.

尺寸 Dimensions

U _n (SV)	Capacitance (μF)	Dissipation Factor	Max ESR 20°C, 120Hz (mΩ)	Typ ESR 20°C, 120Hz (mΩ)	Ripple Current 105°C, 120Hz (Arms)	SIZE D×L (mm)
(V)	(μF)	-	(mΩ)	(mΩ)	(Arms)	(mm)
25 (32)	10000	0.35	50	25	2.9	35×50
	15000	0.35	33	20	4.2	35×80
	22000	0.35	23	13	5.1	35×80
	33000	0.40	17	10	6.3	35×100
	47000	0.40	12	7	8.0	51×75
	68000	0.50	11	6	10.0	51×115
	100000	0.60	9	5	11.3	63.5×95
	150000	0.80	6	4	12.9	63.5×115
	220000	1.00	5	3	14.8	76×115
	330000	1.00	4	2	19.9	89×130
35 (44)	6800	0.30	63	32	2.6	35×50
	10000	0.30	43	25	3.7	35×80
	15000	0.30	29	17	4.5	35×80
	22000	0.35	23	12	5.5	35×100
	33000	0.40	17	8	6.7	51×75
	47000	0.45	14	6	8.1	51×95
	68000	0.50	11	5	10.0	51×115
	100000	0.60	9	4	12.1	63.5×115
	150000	0.70	7	4	13.8	76×115
	220000	0.70	5	3	17.6	89×130
50 (63)	3300	0.20	87	50	2.2	35×50
	4700	0.25	76	36	3.3	35×50
	6800	0.25	53	32	3.4	35×80
	10000	0.25	36	22	4.1	35×80
	15000	0.30	29	14	4.9	35×100
	22000	0.35	24	11	5.6	51×70
	22000	0.35	23	10	5.9	51×75
	33000	0.40	17	7	7.8	51×115
	47000	0.40	12	6	9.5	63.5×95
	68000	0.45	9	5	11.6	63.5×115
63 (79)	100000	0.50	7	4	14.1	76×115
	150000	0.50	5	3	18.9	89×130
	2200	0.15	98	70	2.1	35×50
	3300	0.20	87	50	2.2	35×50
	4700	0.20	61	36	3.1	35×80
	6800	0.20	42	25	3.7	35×80
	10000	0.25	36	20	4.4	35×100
	15000	0.25	24	14	5.7	51×75
	22000	0.30	20	10	6.8	51×95
	33000	0.30	13	7	9.2	63.5×95
63 (79)	47000	0.35	11	6	10.9	63.5×115
	59000	0.40	10	6	12	63.5×130
	68000	0.40	8	5	13.0	76×115

U _n (SV)	Capacitance (μF)	Dissipation Factor	Max ESR 20°C, 120Hz (mΩ)	Typ ESR 20°C, 120Hz (mΩ)	Ripple Current 105°C, 120Hz (Arms)	SIZE D×L (mm)
(V)	(μF)	-	(mΩ)	(mΩ)	(Arms)	(mm)
80 (100)	3300	0.15	65	38	3.0	35×80
	4700	0.15	46	27	3.6	35×80
	6800	0.20	42	19	4.0	35×100
	10000	0.20	36	15	4.0	35×70
	10000	0.20	29	17	5.2	51×75
	15000	0.20	26	15	6.0	35×100
	15000	0.25	28	16	5.6	50×70
	15000	0.25	24	11	6.2	51×95
	22000	0.25	16	8	8.2	63.5×95
	33000	0.30	13	7	9.7	76×95
100 (125)	47000	0.30	9	6	12.5	76×115
	1000	0.15	215	70	1.4	35×50
	1500	0.15	143	55	1.7	35×50
	2200	0.15	100	40	2.2	35×60
	2200	0.15	98	38	2.5	35×80
	3300	0.15	65	25	3.0	35×80
	4700	0.15	46	21	3.9	35×100
	6800	0.15	32	19	5.0	51×75
	10000	0.15	24	14	6.0	51×80
	10000	0.15	22	13	6.5	51×95
160 (200)	15000	0.35	24	15	6.0	51×80
	15000	0.20	19	9	7.6	63.5×95
	22000	0.20	24	13	7.2	50×120
	22000	0.20	20	12	7.6	63.5×105
	22000	0.20	18	10	8.2	63.5×115
	22000	0.20	16	9	8.5	63.5×120
	22000	0.20	13	7	9.7	76×95
	33000	0.25	11	6	11.8	76×130
	47000	0.25	8	5	15.0	89×130
	470	0.15	457	265	1.4	35×50
160 (200)	680	0.15	316	186	1.7	35×50
	1000	0.15	215	125	2.2	35×80
	1500	0.15	143	85	2.8	35×80
	2200	0.15	98	55	3.6	35×100
	3300	0.15	65	38	4.8	51×80
	4700	0.15	46	35	6.3	51×95
	6800	0.15	32	25	8.1	63.5×95
	10000	0.15	22	15	10.5	76×95
	15000	0.15	14	11	14.1	76×130
	22000	0.15	10	6	17.2	89×130

ALUMINUM ELECTROLYTIC CAPACITORS

SMD

MINIATURE

STANDARD

LOW-ESR

SWITCH-POWER

LIGHTING

SNAP-IN

SCREW

U _R (SV)	Capac- itance	Dissipation Factor	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Ripple Current 105°C, 120Hz	SIZE D×L
(V)	(μF)	-	(mΩ)	(mΩ)	(Arms)	(mm)
200 (250)	330	0.15	651	375	1.0	35×50
	470	0.15	457	262	1.3	35×50
	680	0.15	316	180	1.4	35×50
	1000	0.15	215	125	2.2	35×80
	1500	0.15	143	75	2.9	35×100
	2200	0.15	98	50	3.6	51×75
	3300	0.15	65	36	4.8	51×95
	4700	0.15	46	24	6.4	63.5×95
	6800	0.15	32	16	8.2	63.5×115
	10000	0.15	22	12	10.5	76×115
	15000	0.15	14	6	14.1	89×130
	330	0.15	651	241	1.1	35×50
250 (300)	470	0.15	457	169	1.3	35×50
	680	0.15	316	117	1.8	35×80
	1000	0.15	215	79	2.4	35×100
	1500	0.15	143	53	2.9	51×75
	2200	0.15	98	36	4.0	51×95
	3300	0.15	65	24	5.4	63.5×95
	4700	0.15	46	17	7.0	63.5×115
	6800	0.15	32	11	8.9	76×115
	10000	0.15	22	8	12.0	76×155
	15000	0.15	14	6	15.8	89×155
	1000	0.15	215	92	3.3	51×75
	1200	0.15	179	77	4.0	51×95
400 (450)	1500	0.15	143	62	4.8	51×115
	1800	0.15	119	51	5.6	51×130

U _R (SV)	Capac- itance	Dissipation Factor	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Ripple Current 105°C, 120Hz	SIZE D×L
(V)	(μF)	-	(mΩ)	(mΩ)	(Arms)	(mm)
400 (450)	2200	0.15	98	42	5.9	63.5×95
	2700	0.15	80	34	7.2	63.5×115
	3300	0.15	65	28	8.0	63.5×130
	3900	0.15	55	23	9.3	63.5×155
	4700	0.15	46	19	11.3	63.5×170
	4700	0.15	46	19	10.0	76×130
	5600	0.15	38	16	12.5	63.5×195
	5600	0.15	38	16	12.0	76×155
	6800	0.15	32	13	14.0	89×150
	8200	0.15	26	11	15.3	89×155
	10000	0.15	22	9	18.3	89×170
	470	0.15	457	195	2.2	51×80
450 (500)	680	0.15	316	135	2.8	51×95
	1000	0.15	215	90	3.5	51×100
	1500	0.15	143	61	4.9	51×130
	2200	0.15	98	42	6.6	63.5×115
	3300	0.15	65	28	8.3	76×130
	4700	0.15	46	19	10.7	76×155
	5600	0.15	38	16	12.7	89×155
	6800	0.15	32	13	14.5	89×170
	8200	0.15	26	11	17.0	89×190
	10000	0.15	22	10	19.8	89×220