

HN series

- Low ESR, high ripple current 低等效串联电阻, 耐高纹波电流
- Load life of 4000 hours at 135°C 工作寿命 135°C-4000 小时
- Compliant to the RoHS2.0 directive 符合 RoHS2.0 规范
- Compliant to AEC-Q200, contact us for more information 符合 AEC-Q200 标准, 详情请另行咨询



Specifications 系列参数

Items 项目	Characteristics 特性	
Rated Voltage Range 额定电压范围	25V ~ 80V DC	
Capacitance Range 容量范围	10 ~ 680μF	
Capacitance Tolerance 容量偏差	M : ±20%	
Operating Temp. Range 工作温度范围	-55°C ~ +135°C	
Dissipation Factor 损耗角正切	Not to exceed the value specified 不超过规格值	
Leakage Current 漏电流	$I \leq 0.01CV$ (after 2 minutes) 充电 2 分钟后测试漏电流不超过 $0.01 \times (\text{静电容量 } \mu F) \times (\text{额定电压 } V)$	
ESR (100K~300KHz) 等效串联电阻	Not to exceed the value specified 不超过规格值	
Endurance: 135°C, 4000h Rated voltage applied (with the rated ripple current) 寿命: 135°C, 4000 小时 加载额定电压 (叠加额定纹波电流)	Capacitance Change 容量变化	Within ±30% of the value before test 初始值±30%以内
	Dissipation Factor 损耗角正切	Not to exceed 200% of the value specified 不超过 2 倍规格值
	ESR 等效串联电阻	Not to exceed 200% of the value specified 不超过 2 倍规格值
	Leakage current 漏电流	Not to exceed the value specified 不超过规格值
Moisture Resistance 85°C, RH85%, 2000h, Rated voltage applied 耐湿性 85°C, RH85% 加载额定电压连续工作 2000 小时	Capacitance Change 容量变化	Within ±30% of the value before test 初始值±30%以内
	Dissipation Factor 损耗角正切	Not to exceed 200% of the value specified 不超过 2 倍规格值
	ESR 等效串联电阻	Not to exceed 200% of the value specified 不超过 2 倍规格值
	Leakage Current 漏电流	Not to exceed the value specified 不超过规格值

Dimensions 尺寸 (Unit单位:mm)

Standard
标准产品

Technical drawing of a standard capacitor. The front view shows a cylindrical body with a diameter of $D+0.5\text{max}$ and a length of $L\pm0.3$. The side view shows a cross-section with a total width of $W\pm0.2$, a height of $H\pm0.2$, a central hole diameter of $P\pm0.2$, a corner radius of R , and a mounting tab width of $C\pm0.2$. The mounting tabs are labeled T_1 and T_2 .

ΦD	L	W	H	C	P	R	T_1, T_2
8	10.5	8.3	8.3	9.0	3.2	0.8~1.1	0.2max.
10	10.5	10.3	10.3	11.0	4.6	0.8~1.1	0.2max.
10	12.8	10.3	10.3	11.0	4.6	0.8~1.1	0.2max.

Anti-vibration
耐振产品

Technical drawing of an anti-vibration capacitor. The front view shows a cylindrical body with a diameter of $D+0.5\text{max}$ and a length of $L\pm0.3$. The side view shows a cross-section with a total width of $W\pm0.2$, a height of $H\pm0.2$, a central hole diameter of $P\pm0.2$, a corner radius of R , a mounting tab width of $C\pm0.2$, and additional dimensions S , M , and N for the internal structure. The mounting tabs are labeled T_1 and T_2 .

ΦD	L	W	H	C	P	R	M	N	S	T_1, T_2
8	10.5	8.3	8.3	9.0	3.2	0.8~1.1	1.35	0.7	5.40	0.2max.
10	10.5	10.3	10.3	11.0	4.6	0.8~1.1	1.35	1.0	6.74	0.2max.
10	12.8	10.3	10.3	11.0	4.6	0.8~1.1	1.35	1.0	6.74	0.2max.
10	16.5	10.3	10.3	11.0	4.6	0.8~1.1	1.35	1.0	6.74	0.2max.

Capacitance List 容量对照表

W.V (S.V) SIZE	25 (31)	35 (44)	50 (63)	63 (79)	80 (100)
8×10.5	100 ~ 220 μ F	82 ~ 150 μ F	47 ~ 68 μ F	33 ~ 47 μ F	10 ~ 18 μ F
10×10.5	180 ~ 330 μ F	120 ~ 270 μ F	68 ~ 100 μ F	47 ~ 82 μ F	15 ~ 33 μ F
10×12.8	220 ~ 470 μ F	150 ~ 330 μ F	82 ~ 150 μ F	56 ~ 100 μ F	27 ~ 47 μ F
10×16.5	330 ~ 680 μ F	220 ~ 470 μ F	120 ~ 220 μ F	82 ~ 150 μ F	33 ~ 68 μ F

Characteristics List 规格特性表

W.V. 工作电压 (V)	Capacitance 容量 (μ F)	tg δ 损耗角正切 (120Hz, 20°C)	ESR 等效串联电阻 (m Ω , 100kHz)	Rated Ripple Current 额定纹波电流 (135°C, mA, r.m.s)	Size 尺寸 Φ D×L(mm)	Part Number 物料编码
25	220	0.12	27	1600	8×10.5	PHN221M025F1ETR□□□□
	330	0.12	20	2000	10×10.5	PHN331M025G1ETR□□□□
	470	0.12	14	2500	10×12.8	PHN471M025G1DTR□□□□
	560	0.12	11	2900	10×16.5	PHN561M025G1HTR□□□□
35	150	0.10	27	1600	8×10.5	PHN151M035F1ETR□□□□
	220	0.10	20	2000	10×10.5	PHN221M035G1ETR□□□□
	330	0.10	14	2500	10×12.8	PHN331M035G1DTR□□□□
	470	0.10	11	2900	10×16.5	PHN471M035G1HTR□□□□
50	68	0.10	30	1250	8×10.5	PHN680M050F1ETR□□□□
	100	0.10	28	1600	10×10.5	PHN101M050G1ETR□□□□
	150	0.10	17	2250	10×12.8	PHN151M050G1DTR□□□□
	220	0.10	13	2600	10×16.5	PHN221M050G1HTR□□□□
63	47	0.08	30	1100	8×10.5	PHN470M063F1ETR□□□□
	82	0.08	28	1400	10×10.5	PHN820M063G1ETR□□□□
	100	0.08	19	2100	10×12.8	PHN101M063G1DTR□□□□
	150	0.08	15	2400	10×16.5	PHN151M063G1HTR□□□□
80	10	0.08	55	850	8×10.5	PHN100M080F1ETR□□□□
	22	0.08	50	1100	10×10.5	PHN220M080G1ETR□□□□
	47	0.08	25	1800	10×12.8	PHN470M080G1DTR□□□□
	68	0.08	18	2100	10×16.5	PHN680M080G1HTR□□□□

* For the last 4 digits of the part number, please refer to the part number system on page 178 .

物料编码的最后 4 位, 请参考 178 页物料编码系统。

Frequency Coefficient for Ripple Current 纹波电流频率系数

Frequency 频率	120Hz≤freq.<1KHz	1KHz≤freq.<10KHz	10KHz≤freq.<50KHz	50KHz≤freq.<100KHz	100KHz≤freq.<1000KHz
Coefficient 系数 (C≤47 μ F)	0.05	0.25	0.55	0.80	1.00
Coefficient 系数 (C>47 μ F)	0.05	0.30	0.70	0.85	1.00