

直流支撑聚丙烯薄膜电容器

DC-link Metallized Polypropylene Film Capacitors (MKP)

YHK

产品特点

- ◆ 高容量，小体积产品
- ◆ 具有优秀的自愈性
- ◆ 优秀的过压能力
- ◆ 低损耗，优秀的过电流能力
- ◆ 优秀的可靠性
- ◆ 耐高温性能良好
- ◆ 使用寿命长
- ◆ 符合ROHS标准
- ◆ 符合AEC-Q200

Features

- ◆ High CV product, compact
- ◆ Good self-healing properties
- ◆ Over-voltage capability
- ◆ Low losses with high current capability
- ◆ High reliability
- ◆ Good High humidity resistance
- ◆ Long useful life
- ◆ RoHS-compatible
- ◆ Meet AEC-Q200.

产品用途

- ◆ 变频器
- ◆ 工业和高端电源
- ◆ 汽车DC-DC和太阳能逆变器

Applications

- ◆ Frequency converters
- ◆ Industrial and high-end power supplies
- ◆ Solar inverters

产品结构

- ◆ 电介质：聚丙烯（MKP）
- ◆ PBT/PPS塑料外壳（UL 94 V-0）
- ◆ 环氧树脂密封（UL 94 V-0）

Construction

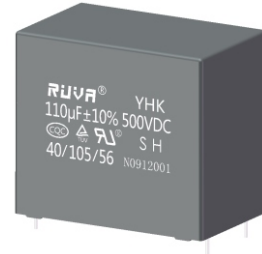
- ◆ Dielectric: Polypropylene (MKP)
- ◆ PBT/PPS Plastic case (UL 94 V-0)
- ◆ Epoxy resin sealing (UL 94 V-0)

引出

- ◆ 平行引线，无铅镀锡
- ◆ 2引线，4引线 版本
- ◆ 标准引线长度：5 ± 0.5 mm

Terminals

- ◆ Parallel wire leads, lead-free tinned
- ◆ 2-pins, 4-pins, versions
- ◆ Standard lead lengths: 5 ± 1 mm



认证 Certification

	CQC (中国)	GB/T 17702-2021(IEC 61071:2007) 400VDC~1000VDC, 1.0 µF~120 µF, ± 5%, ± 10% 40/105/56 (40/85/56) SH 证书号Certificate No.: 18024209447
	UL (美国)	UL810(construction only), max 1500VDC, 105°C 证书号Certificate No.: E256239
	TUV (德国)	EN 61071-2007 400VDC~1500VDC, 1.0 µF~160 µF, ± 5%, ± 10% 40/105/56 (40/85/56) THB type: Humidity grades IIIB under 85°C/85%RH 1000h 证书号Certificate No.: R50428120

技术参数 Technical Parameter

参考标准 Reference standard

GB/T 17702-2021(IEC 61071:2007)
IEC 60068, AEC-Q200

气候类别 Climatic category

40/105/56

工作温度范围（外壳） Operating temperature range (case)

最高工作温度
Max. operating temperature, Top +105°C
最低工作温度
Lower category temperature T_{min} -40°C

在85°C到105°C之间电压降低率 For temperatures between 85°C and 105°C

每度按照1.33%的V_R进行下降
1.33%/°C of V_{op} derating
compared to V_R at 85°C

额定电压 Rated voltage (V_R)85°C

400VDC~1500VDC

容量偏差 Capacitance tolerance

J(± 5%) K(± 10%)

直流耐压（电极间） DC test voltage between terminals (10 s)

1.5*V_R

绝缘耐压（极壳间） Voltage test terminal to case (10 s)

2100 Vac, 50 Hz

绝缘电阻 Insulation Resistance

> 10000 s (20°C, 100vdc, 1min)

峰值电流 Maximum peak current

I_p=C*dV/dt

预期使用寿命 Operation life time

50 000 h at V_R and 85°C

耐湿负荷 Biased humidity test

1000 hours / 60° C / 95% relative humidity with V_R
在 60° C / 95%相对湿度环境下加载V_R测试1000H

性能要求 Performance requirements

容量变化 |ΔC/C| ≤ 5%
Capacitance change |ΔC/C| ≤ 5%
损耗变化 Δtan δ ≤ 0.025 (at 10 kHz)
Dissipation factor change Δtan δ ≤ 0.025 (at 10 kHz)
绝缘电阻 R_{ins} ≥ 50%规定值
Insulation resistance R_{ins} ≥ 50% of initial limit

THB 耐湿负荷 THB Biased humidity test

在 85° C / 85%相对湿度环境下加载VR测试1000H
1000 hours / 85° C / 85% relative humidity with V_R

THB 性能要求 THB Performance requirements

容量变化：|ΔC/C| ≤ 10%
Capacitance change |ΔC/C| ≤ 10%
损耗变化 Δtan δ ≤ 0.025 (at 10 kHz)
Dissipation factor change Δtan δ ≤ 0.025 (at 10 kHz)
绝缘电阻 R_{ins} ≥ 50%规定值
Insulation resistance R_{ins} ≥ 50% of initial limit

常用规格表
Common Specification

C (uF)	W ±1	H ±1	T ±1	P ±0.5	P2 ±0.5	d ±0.05	dV/dt (V/us)	Tg δ *10 ⁻⁴		ESR@10 kHz (mΩ)	Irms (A)	Part number
								1kHz	10kHz			
V _R =500Vdc at 85°C												
5	32	20.0	11.0	27.5	–	0.8	30	12	120	25	3.0	YHK*505P0500Z27+--000
10	32	24.5	15.0	27.5	–	0.8	30	12	120	7.5	6.5	YHK*106P0500Z27+--000
22	32	37.0	22.0	27.5	–	1.0	30	12	120	5.0	10.0	YHK*226P0500Z27+--000
30	42	40.0	20.0	37.5	10.2	1.0	21	22	220	8.0	12.5	YHK*306P0500H3A+--000
35	42	40.0	20.0	37.5	10.2	1.0	21	22	220	8.0	13.5	YHK*356P0500H3A+--000
45	42	44.0	24.0	37.5	10.2	1.0	21	25	250	6.0	14.5	YHK*456P0500H3A+--000
55	42	45.0	30.0	37.5	20.3	1.2	21	25	250	5.0	16.0	YHK*556P0500E3C+--000
60	42	45.0	30.0	37.5	20.3	1.2	21	25	250	4.5	16.5	YHK*556P0500E3C+--000
80	57.5	45.0	30.0	52.5	20.3	1.2	15	35	350	4.0	17.0	YHK*806P0500E5C+--000
110	57.5	50.0	35.0	52.5	20.3	1.2	15	35	350	3.5	18.0	YHK*117P0500E5C+--000
V _R =600Vdc at 85°C												
2	32.0	18.0	9.0	27.5	–	0.8	30	11	100	45.0	3.0	YHK*205P0600Z27+--000
4	32.0	20.0	11.0	27.5	–	0.8	30	11	100	24.0	5.5	YHK*405P0600Z27+--000
6	32.0	24.5	15.0	27.5	–	0.8	30	11	100	18.5	7.5	YHK*605P0600Z27+--000
10	32.0	30.0	16.0	27.5	–	1.0	30	11	100	15.5	11.0	YHK*106P0600H27+--000
18	32.0	37.0	22.0	27.5	–	1.0	30	11	100	8.5	15.0	YHK*186P0600H27+--000
12	41.0	30.0	16.0	37.5	–	1.0	22	20	180	16.5	7.0	YHK*126P0600H37+--000
15	41.0	32.0	17.0	37.5	–	1.0	22	20	180	13.0	9.0	YHK*156P0600H37+--000
20	42.0	40.0	20.0	37.5	10.2	1.0	22	20	180	10.0	12.5	YHK*206P0600H3A+--000
25	42.0	40.0	20.0	37.5	10.2	1.0	22	20	180	8.0	15.5	YHK*256P0600H3A+--000
30	42.0	44.0	24.0	37.5	10.2	1.0	22	20	180	6.5	17.5	YHK*306P0600H3A+--000
35	42.0	45.0	30.0	37.5	20.3	1.2	22	25	200	6.0	20.0	YHK*356P0600E3C+--000
40	42.0	45.0	30.0	37.5	20.3	1.2	22	25	200	5.5	22.0	YHK*406P0600E3C+--000
50	42.0	46.0	35.0	37.5	20.3	1.2	22	25	200	4.5	25.0	YHK*506P0600E3C+--000
55	42.0	50.0	35.0	37.5	20.3	1.2	22	25	200	3.5	27.0	YHK*606P0600E3C+--000
60	57.5	45.0	30.0	52.5	20.3	1.2	22	30	360	4.0	22.0	YHK*606P0600E5C+--000
80	57.5	50.0	35.0	52.5	20.3	1.2	15	30	360	3.5	27.0	YHK*806P0600E5C+--000
110	57.5	55.0	45.0	52.5	20.3	1.2	15	30	360	3.0	29.0	YHK*117P0600E5C+--000
V _R =800Vdc at 85°C												
2	32.0	18.0	9.0	27.5	–	0.8	40	10	95	45.0	2.5	YHK*205P0800Z27+--000
3	32.0	20.0	11.0	27.5	–	0.8	40	10	95	30.0	3.0	YHK*305P0800Z27+--000
5	32.0	24.5	15.0	27.5	–	0.8	40	10	95	18.0	6.5	YHK*505P0800Z27+--000
7	32.0	30.0	16.0	27.5	–	0.8	40	10	95	13.0	10.5	YHK*705P0800Z27+--000
12	32.0	37.0	22.0	27.5	–	1.0	40	10	95	7.5	12.0	YHK*126P0800H27+--000
14	32.0	37.0	22.0	27.5	10.2	1.0	40	10	95	7.0	13.0	YHK*146P0800H27K000
8	41.0	30.0	16.0	37.5	–	1.0	22	18	180	22.0	5.0	YHK*805P0800H37+--000
10	41.0	32.0	17.0	37.5	–	1.0	22	18	180	18.0	8.5	YHK*106P0800H37+--000
12	42.0	32.5	19.0	37.5	–	1.0	22	18	180	15.0	9.0	YHK*126P0800H37+--000

常用规格表
Common Specification

C (uF)	W ±1	H ±1	T ±1	P ±0.5	P2 ±0.5	d ±0.05	dV/dt (V/us)	Tg δ *10 ⁻⁴		ESR@10 kHz (mΩ)	Irms (A)	Part number
								1kHz	10kHz			
V _R =800Vdc at 85°C												
18	42.0	40.0	20.0	37.0	10.2	1.2	22	18	180	12.0	10.0	YHK*186P0800E3A+-000
20	42.0	40.0	20.0	37.5	10.2	1.2	22	18	180	12.0	12.0	YHK*206P0800E3A+-000
25	42.0	44.0	24.0	37.5	10.2	1.2	22	18	180	7.0	15.5	YHK*206P0800E3A+-000
30	42.0	45.0	30.0	37.5	20.3	1.2	22	18	180	6.5	18.5	YHK*306P0800E3C+-000
35	42.0	45.0	30.0	37.5	20.3	1.2	22	18	180	6.0	20.5	YHK*356P0800E3C+-000
40	42.0	46.0	35.0	37.5	20.3	1.2	22	18	180	5.5	22.0	YHK*406P0800E3C+-000
45	42.0	50.0	35.0	37.5	20.3	1.2	22	18	180	4.8	23.0	YHK*456P0800E3C+-000
50	57.5	45.0	30.0	52.5	20.3	1.2	15	33	320	8.0	18.0	YHK*506P0800E5C+-000
55	57.5	45.0	30.0	52.5	20.3	1.2	15	33	320	7.5	20.0	YHK*556P0800E5C+-000
60	57.5	50.0	35.0	52.5	20.3	1.2	15	33	320	6.5	22.0	YHK*606P0800E5C+-000
80	57.5	55.0	38.0	52.5	20.3	1.2	15	33	320	5.0	25.0	YHK*806P0800E5C+-000
90	57.5	55.0	45.0	52.5	20.3	1.2	15	33	320	4.5	26.0	YHK*906P0800E5C+-000
V _R =900Vdc at 85°C												
1.5	32.0	18.0	9.0	27.5	-	0.8	50	9	90	85	1.5	YHK*155P0900Z27+-000
2.0	32.0	20.0	11.0	27.5	-	0.8	50	9	90	45	3.0	YHK*205P0900Z27+-000
4.0	32.0	24.5	15.0	27.5	-	0.8	50	9	90	21.5	6.0	YHK*405P0900Z27+-000
6.0	32.0	30.0	16.0	27.5	-	0.8	50	9	90	18.0	6.5	YHK*605P0900Z27+-000
10.0	32.0	37.0	22.0	27.5	-	1.0	50	9	90	12.0	12.5	YHK*106P0900H27+-000
8	41.0	30.0	16.0	37.5	-	1.0	30	17	150	21	5.5	YHK*805P0900H37+-000
12	42.0	32.5	19.0	37.5	-	1.0	30	17	150	14	6.5	YHK*126P0900H37+-000
15	42.0	40.0	20.0	37.5	10.2	1.2	30	17	150	11	10.5	YHK*156P0900E3A+-000
20	42.0	44.0	24.0	37.5	10.2	1.2	30	17	150	8.5	15.0	YHK*206P0900E3A+-000
25	42.0	45.0	30.0	37.5	20.3	1.2	30	17	150	6.5	17.0	YHK*256P0900E3C+-000
28	42.0	45.0	30.0	37.5	20.3	1.2	30	17	150	6.0	18.0	YHK*286P0900E3C+-000
30	42.0	46.0	35.0	37.5	20.3	1.2	30	17	150	5.5	19.0	YHK*306P0900E3C+-000
35	42.0	50.0	35.0	37.5	20.3	1.2	30	17	150	5.0	21.0	YHK*356P0900E3C+-000
30	57.5	45.0	30.0	52.5	20.3	1.2	15	33	320	11.0	15.0	YHK*306P0900E5C+-000
35	57.5	45.0	30.0	52.5	20.3	1.2	15	33	320	9.5	12.5	YHK*356P0900E5C+-000
45	57.5	50.0	35.0	52.5	20.3	1.2	15	33	320	7.5	16.5	YHK*456P0900E5C+-000
60	57.5	55.0	38.0	52.5	20.3	1.2	15	33	320	5.6	22.0	YHK*606P0900E5C+-000
70	57.5	55.0	45.0	52.5	20.3	1.2	15	33	320	4.5	25.0	YHK*706P0900E5C+-000
V _R =1000Vdc at 85°C												
1.0	32.0	18.0	9.0	27.5	-	0.8	60	8	80	85	1.5	YHK*105P1000Z27+-000
1.5	32.0	20.0	11.0	27.5	-	0.8	60	8	80	45	3.0	YHK*155P1000Z27+-000
3.0	32.0	24.5	15.0	27.5	-	0.8	60	8	80	21.5	4.0	YHK*305P1000Z27+-000
4.5	32.0	30.0	16.0	27.5	-	0.8	60	8	80	18.0	5.5	YHK*455P1000Z27+-000
7.0	32.0	37.0	22.0	27.5	-	1.0	60	8	80	12.0	12.5	YHK*705P1000H27+-000
6.0	41.0	30.0	16.0	37.5	-	1.0	60	15	140	21	5.5	YHK*605P1000H37+-000

常用规格表
Common Specification

C (uF)	W ±1	H ±1	T ±1	P ±0.5	P2 ±0.5	d ±0.05	dV/dt (V/us)	Tg δ *10 ⁻⁴		ESR@10 kHz (mΩ)	Irms (A)	Part number
								1kHz	10kHz			
V _R =1000Vdc at 85°C												
8.0	42.0	32.5	19.0	37.0	—	1.0	40	15	140	14.0	6.5	YHK*805P1000H37+-000
10	42.0	40.0	20.0	37.5	10.2	1.0	40	15	140	11.0	10.5	YHK*106P1000H3A+-000
12	42.0	40.0	20.0	37.5	10.2	1.2	40	15	140	11.5	11.0	YHK*126P1000E3A+-000
15	42.0	44.0	24.0	37.5	10.2	1.2	40	15	140	8.5	15.0	YHK*156P1000E3A+-000
18	42.0	45.0	30.0	37.5	20.3	1.2	40	15	140	6.5	17.0	YHK*186P1000E3C+-000
20	42.0	45.0	30.0	37.5	20.3	1.2	40	15	140	6.0	18.0	YHK*206P1000E3C+-000
25	42.0	46.0	35.0	37.5	20.3	1.2	40	15	140	5.5	19.0	YHK*256P1000E3C+-000
25	57.5	45.0	30.0	52.5	20.3	1.2	20	28	280	11.0	15.0	YHK*256P1000E5C+-000
30	57.5	45.0	30.0	52.5	20.3	1.2	20	28	280	9.5	12.5	YHK*306P1000E5C+-000
35	57.5	50.0	35.0	52.5	20.3	1.2	20	28	280	7.5	16.5	YHK*356P1000E5C+-000
40	57.5	55.0	38.0	52.5	20.3	1.2	20	28	280	5.6	21.0	YHK*406P1000E5C+-000
55	57.5	55.0	45.0	52.5	20.3	1.2	20	28	280	4.5	28.0	YHK*556P1000E5C+-000
V _R =1100Vdc at 85°C												
1.2	32.0	20.0	11.0	27.5	—	0.8	70	8	70	60	2.5	YHK*125P1100Z27+-000
2.5	32.0	24.5	15.0	27.5	—	0.8	70	8	70	25	4.5	YHK*255P1100Z27+-000
3.5	32.0	30.0	16.0	27.5	—	0.8	70	8	70	18	8.0	YHK*355P1100Z27+-000
5	32.0	37.0	22.0	27.5	—	1.0	70	8	70	15	10.5	YHK*505P1100H27+-000
6	32.0	37.0	22.0	27.5	—	1.0	70	8	70	14.5	12.5	YHK*605P1100H27+-000
4.5	41.0	30.0	16.0	37.5	—	1.0	45	15	130	30.5	4.0	YHK*455P1100H37+-000
7	42.0	32.5	19.0	37.5	—	1.0	45	15	130	21.0	7.0	YHK*705P1100H37+-000
8	42.0	40.0	20.0	37.5	10.2	1.0	45	15	130	18.0	8.5	YHK*805P1100H3A+-000
10	42.0	40.0	20.0	37.5	10.2	1.0	45	15	130	14.5	11.0	YHK*106P1100H3A+-000
12	42.0	44.0	24.0	37.5	10.2	1.0	45	15	130	12.0	12.5	YHK*126P1100H3A+-000
15	42.0	45.0	30.0	37.5	20.3	1.2	45	15	130	10.0	14.0	YHK*156P1100E3C+-000
17	42.0	45.0	30.0	37.5	20.3	1.2	45	15	130	8.0	17.0	YHK*176P1100E3C+-000
20	42.0	46.0	35.0	37.5	20.3	1.2	45	15	130	7.0	18.0	YHK*206P1100E3C+-000
22	42.0	50.0	35.0	37.5	20.3	1.2	45	15	130	6.5	16.0	YHK*226P1100E3C+-000
20	57.5	45.0	30.0	52.5	20.3	1.2	25	27	260	15.0	15.5	YHK*206P1100E5C+-000
25	57.5	45.0	30.0	52.5	20.3	1.2	25	27	260	11.0	18.5	YHK*256P1100E5C+-000
30	57.5	50.0	35.0	52.5	20.3	1.2	25	27	260	9.5	19.5	YHK*306P1100E5C+-000
35	57.5	55.0	38.0	52.5	20.3	1.2	25	27	260	8.5	20.0	YHK*356P1100E5C+-000
45	57.5	55.0	45.0	52.5	20.3	1.2	25	27	260	7.0	22.0	YHK*456P1100E5C+-000
V _R =1200Vdc at 85°C												
1.5	32	24.5	15	27.5	—	0.8	90	8	70	45	2.5	YHK*155P1200Z27+-000
2	32	30	16	27.5	—	0.8	80	8	70	30	4	YHK*205P1200Z27+-000
4	32	37	22	27.5	—	0.8	80	8	70	17	6.5	YHK*405P1200Z27+-000
5	32	37	22	27.5	—	0.8	80	8	70	14.5	9.5	YHK*505P1200Z27+-000
8	42	40	20	37.5	10.2	1	50	15	150	13.5	10.5	YHK*805P1200H3A+-000
10	42	44	24	37.5	10.2	1	50	15	150	8.5	12	YHK*106P1200H3C+-000

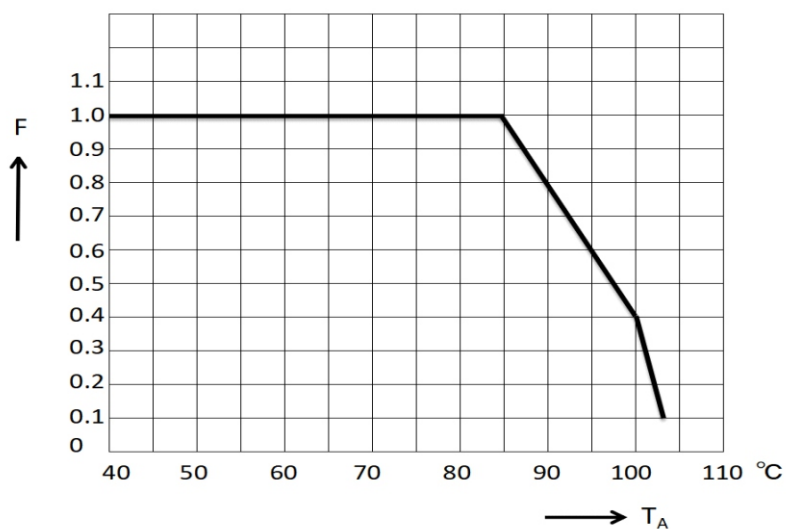
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C (uF)	W ±1	H ±1	T ±1	P ±0.5	P2 ±0.5	d ±0.05	dV/dt (V/us)	Tg δ *10 ⁻⁴		ESR@10 kHz (mΩ)	Irms (A)	Part number
								1kHz	10kHz			
V _R =1200Vdc at 85°C												
14	42	45	30	37.5	20.3	1.2	50	15	150	7.5	14.5	YHK*146P1200E3C+-000
18	42	50	35	37.5	20.3	1.2	50	15	150	6.5	16.5	YHK*186P1200E3C+-000
20	57.5	45	30	52.5	20.3	1.2	30	24	200	13.5	12.5	YHK*206P1200E5C+-000
25	57.5	50	35	52.5	20.3	1.2	30	24	200	8.5	14.5	YHK*256P1200E5C+-000
35	57.5	55	45	52.5	20.3	1.2	30	24	200	6.5	16.5	YHK*356P1200E5C+-000
45	57.5	65	45	52.5	20.3	1.2	30	24	200	5.5	22.5	YHK*456P1200E5C+-000
V _R =1300Vdc at 85°C												
1.5	32	24.5	15	27.5	—	0.8	90	8	70	35	2.5	YHK*155P1300Z27+-000
2	32	30	16	27.5	—	0.8	90	8	70	25	4	YHK*205P1300Z27+-000
4	32	37	22	27.5	—	0.8	90	8	70	16	6.5	YHK*405P1300Z27+-000
6	42	40	20	37.5	10.2	1	55	15	150	14.5	9.5	YHK*605P1300H3A+-000
8	42	44	24	37.5	10.2	1	55	15	150	9.5	10.5	YHK*805P1300H3A+-000
10	42	45	30	37.5	20.3	1.2	55	15	150	8.5	12.5	YHK*106P1300E3C+-000
14	42	50	35	37.5	20.3	1.2	55	15	150	6.5	16.5	YHK*146P1300E3C+-000
16	57.5	45	30	52.5	20.3	1.2	35	25	250	8.5	12.5	YHK*166P1300E5C+-000
20	57.5	50	35	52.5	20.3	1.2	35	25	250	7.5	15	YHK*206P1300E5C+-000
V _R =1500Vdc at 85°C												
2	41	30	16	37.5	—	0.8	60	15	150	39	3.5	YHK*205P1500Z37+-000
3	42	32.5	19	37.5	—	1	60	15	150	22	5	YHK*305P1500H37+-000
4	42	40	20	37.5	10.2	1	60	15	150	19	6.5	YHK*405P1500H3A+-000
6	42	44	24	37.5	10.2	1	60	15	150	14.5	9.5	YHK*605P1500H3A+-000
8	42	45	30	37.5	20.3	1.2	60	15	150	11.5	10	YHK*805P1500E3C+-000
10	42	50	35	37.5	20.3	1.2	60	15	150	9.5	13.5	YHK*106P1500E3C+-000
12	57.5	45	30	52.5	20.3	1.2	40	25	250	13.5	11.5	YHK*126P1500E5C+-000
15	57.5	50	35	52.5	20.3	1.2	40	25	250	11.5	13.5	YHK*156P1500E5C+-000

1. “*” 表示类型: “C” 普通型、“S” THB型
2. “+ -” 表示容量公差可以符合 “J” “K”
3. “000” 表示内部使用导线长度
4. 在1kHz下测得的电容值
5. 在ΔT≤15°C、ΔESR_{typ}≤±5%时, 85°C、10kHz时的最大纹波电流IRMS
5. 在谐振频率下测量的典型ESL值

1. “*” Representation type: "C" ordinary type, "S" THB type
2. "+ -" Means the capacity tolerance can conform to "J""K"
3. "000" Means Internal use the lead length
4. Capacitance value measured at 1 kHz
4. Max ripple current IRMS at 85°C, at 10 kHz for a ΔT ≤ 15 °C at ΔESR_{typ} ≤ ± 5%
5. Typical ESL value measured at resonance frequency

◆ 曲线特性(Irms降额与温度)
Curves Characteristics (Irms derating vs temperature)



*最大I_{RMS}电流与环境温度的函数: $I_{RMS}(T_A) = \text{Factor} * I_{RMS}(85^{\circ}\text{C})$

*Maximum I_{RMS} current as function of the ambient temperature: $I_{RMS}(T_A) = \text{Factor} * I_{RMS}(85^{\circ}\text{C})$

◆ 预期寿命-典型曲线
Life time expectancy – typical curve

