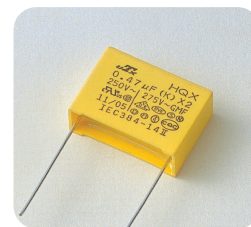
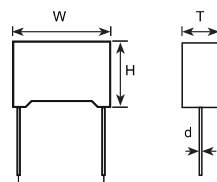


**Box-type metallized polypropylene
film interference suppression capacitor(X2 class)**
塑料外殼金屬化聚丙烯膜
抗幹擾電容器(X2類)(HQX/CBB62)



SPECIFICATION

ACROSS-THE-LINE AND INTERFERENCE SUPPRESSION CAPACITOR CLASS X2-HQX

1. REFERENCE STANDARDS:

AMERICA: UL (U.S.A.): UL 1414 - 5th Edition (1998)
CSA (Canada): CSA - C22.2 No 1-98
EUROPE: IEC 384-14 Second Edition (1993) including
Am.1(1995) kSafety tests/ EN 132400 (1994)
ASIA: CQC(China):
GB / 14472 - 1998 Equals to IEC 384 - 14(1993)

2. **RATED VOLTAGE:** 250/275VAC, 50~60HZ

3. **CAPACITANCE RANGE:** 0.0047 μ F~1.0 μ F

4. **CAPACITANCE TOLERANCE:** J ($\pm 5\%$), K ($\pm 10\%$), M ($\pm 20\%$)

5. **DIELECTRIC:** METALLIZED POLYPROPYLENE FILM

6. **DISSIPATION FACTOR TAN δ :** 0.1% AT 1KHZ/20 $^{\circ}$ C

7. **INSULATION RESISTANCE:** BETWEEN TERMINALS

(1) LESS THAN OR EQUAL TO 0.33 μ F; $\geq 3 \times 10^4 M\Omega$

(2) GREATER THAN 0.33 μ F; $\geq 1 \times 10^4 M\Omega \cdot \mu$ F

MEASURED AT 100 ± 15 VDC, 60SEC./20 $^{\circ}$ C

8. **WITHSTAND VOLTAGE :**

TEST VOLTAGE 4.3U_{rdc}/60s

C > 0.33 μ F Climb time: 0.8s CREEPAGE: > 10mA 20mA MAX

C $\leq$ 0.33 μ F Climb time: 0.5s CREEPAGE: > 5mA 10mA MAX

9. **CLIMATIC CATEGORY:**

IN ACCORDANCE WITH DIN 40040 GMF

G (MINIMUM LIMIT TEMPERATURE)= -40 $^{\circ}$ C

M (MAXIMUM LIMIT TEMPERATURE)= +100 $^{\circ}$ C

F (HUMIDITY CATEGORY)=AVERAGE RELATIVE HUMIDITY $\leq 75\%$

95% FOR 30 DAYS PER YEAR CONTINUOUSLY

85% FOR THE REMAINING DAYS OCCASIONALLY

10. **DRY "HEAT" RESISTANCE:**

IN ACCORDANCE WITH DIN 40046 SHEET 1 OR IEC

68-2-2 TEST Ba CONDITIONS:

TEST TEMPERATURE: 100 $\pm$ 2 $^{\circ}$ C

TEST DURATION: 16 HOURS

TEST CRITERIA:

(1) APPEARANCE: NO VISIBLE DAMAGE AND NO LEAKAGE.

(2) WITHSTAND VOLTAGE: 0.66 x RATED WITHSTAND

VOLTAGE 60 SEC.

性能說明

跨接及抑制幹擾用HQX-X2系列電容器

1、參考標準:

美洲: UL(美國): UL1414第五版(1998)

CSA(加拿大): CSA-C22 No1-98

歐洲: IEC384-14第二版(1993)含于Am.1(1995)

[安全測試]EN 132400(1994)

亞洲: CQC(中國)GB/14472-1998等同於IEC384-14(1993)

2、**額定電壓:** 250/275 VAC, 50~60HZ

3、**電容量範圍:** 0.0047 μ F~1.0 μ F

4、**電容量偏差範圍:** J ($\pm 5\%$), K ($\pm 10\%$), M ($\pm 20\%$)

5、**電介質:** 金屬化聚丙烯薄膜

6、**損耗角正切:** $\leq 0.1\%$ (20 $^{\circ}$ C, 1KHZ)

7、**絕緣電阻:** 在引出端之間

(1) 小於或等於0.33 μ F: $\geq 3 \times 10^4 M\Omega$

(2) 大於0.33 μ F: $\geq 1 \times 10^4 M\Omega \cdot \mu$ F

測試條件: 20 $^{\circ}$ C: 100 $\pm$ 15VDC $\cdot$ 60秒

8、**耐電壓:**

測試電壓: 4.3rdc/60s(無異常)

C > 0.33 μ F 爬升時間: 0.8s 漏電流: >10mA 20mA MAX

C $\leq$ 0.33 μ F 爬升時間: 0.5s 漏電流: >5mA 10mA MAX

9、**氣候類別:** 根據DIN 40040 GMF

G[最低溫度]=-40 $^{\circ}$ C

M[最高溫度]=+100 $^{\circ}$ C

F[濕度類別]=平均相對濕度75%

一年內連續30天達95%

其餘天數偶爾達85%

10、**乾熱試驗:**

根據DIN40046第一頁或IEC68-2-2試驗Ba之條件:

試驗溫度: 100 $\pm$ 2 $^{\circ}$ C

試驗時間: 16小時

試驗判據:

(1) 外觀: 無可見損傷及滲出物

(2) 耐電壓: 0.66倍額定電壓下60秒(無異常)

- (3) CAPACITANCE CHANGE: $\leq 5\%$ OF THE INITIAL VALUE
(4) INSULATION RESISTANCE: $\geq 50\%$ OF INITIAL SPECIFIED

11. COLD RESISTANCE

IN ACCORDANCE WITH DIN 40046 SHEET 1 OR IEC 68-2-1

TEST Ba CONDITIONS

TEST TEMPERATURE: $-40 \pm 2^\circ\text{C}$

TEST DURATION: 2 HOURS

TEST CRITERIA:

- (1) APPEARANCE: NO VISIBLE DAMAGE
(2) WITHSTAND VOLTAGE: $0.66 \times \text{RATED WITHSTAND}$

VOLTAGE 60 SEC.

- (3) CAPACITANCE CHANGE: $\pm 5\%$ OF THE INITIAL VALUE

12. HUMIDITY TEST CONDITIONS:

TEST TEMPERATURE : $40 \pm 2^\circ\text{C}$

RELATIVE HUMIDITY : 90% – 95%

TEST DURATION : 500 HOURS

TEST CRITERIA :

- (1) WITHSTAND VOLTAGE : $0.66 \times \text{RATED WITHSTAND}$
VOLTAGE 60 SEC.

- (2) CAPACITANCE DRIFT: $\leq \pm 5\%$ OF THE INITIAL VALUE.

- (3) DISSIPATION FACTOR: $\leq 200\%$ OF INITIAL
SPECIFIED VALUE.

- (4) INSULATION RESISTANCE: $\geq 50\%$ OF INITIAL
SPECIFIED VALUE.

13. LIFE. TEST CONDITIONS:

TEST TEMPERATURE : $100 \pm 3^\circ\text{C}$

TEST VOLTAGE: 440 VAC AND 1,000VAC / 60HZ FOR A
PERIOD OF 0.1 SEC. ONCE EACH HOUR.

TEST DURATION: 1,008 HOURS

TEST CRITERIA:

- (1) APPEARANCE: NO VISIBLE DAMAGE AND NO LEAKAGE
(2) WITHSTAND VOLTAGE: $0.66 \times \text{RATED WITHSTAND}$

VOLTAGE 60 SEC

- (3) CAPACITANCE DRIFT: $\leq \pm 3\%$ OF THE INITIAL VALUE.

- (4) DISSIPATION FACTOR: $\leq 0.6 \times 10^{-3}$ (0.06%)
OF INCREASED VALUE.

- (5) INSULATION RESISTANCE: $\geq 50\%$ OF SPECIFIED VALUE.

14. SOLERABILITY CONDITIONS:

SOLDER BATH TEMPERATURE: $270 \pm 5^\circ\text{C}$

SOLDER MATERIAL: Sn99.96%+Ag0.04%
(60%Sn+40%Pb) ($235 \pm 5^\circ\text{C}$)

SOLDER TIME: $2 \pm 0.5\text{SEC}$

TEST CRITERIA: 75% OF THE SURFACE TINNING

15. SOLDERING HEAT RESISTANCE:

IN ACCORDANCE WITH DIN 40046 SHEET 18 OF IEC
68-2-20 TEST Ta.1&Tb.1 CONDITIONS :

SOLDER BATH TEMPERATURE: $270 \pm 5^\circ\text{C}$

SOLDER TIME: $3 \pm 1\text{ SEC.}$

- (3) 電容量變化率: $\leq$ 初始測量值的 $\pm 5\%$

- (4) 絕緣電阻: $\geq$ 初始規定值的50%

11、寒冷試驗:

根據DIN 40046第一頁或IEC68-2-1試驗Ba之條件:

試驗溫度: $-40 \pm 2^\circ\text{C}$

試驗時間: 2小時

試驗判據:

- (1) 外觀: 無可見損傷
(2) 耐電壓: 0.66倍額定電壓下60秒(無異常)
(3) 電容量變化率: $\leq$ 初始測量值的 $\pm 5\%$

12、穩態濕熱試驗:

測試溫度: $40 \pm 2^\circ\text{C}$

相對濕度: 90%至95%

試驗時間: 500小時

試驗判據:

- (1) 耐電壓: 0.66倍額定電壓, 60秒(無異常)
(2) 電容量漂移: $\leq$ 初始測量值的 $\pm 5\%$
(3) 損耗角正切: $\leq 200\%$ 的初始規定值
(4) 絕緣電阻: $\geq$ 初始規定值的50%

13、壽命試驗:

試驗溫度: $100 \pm 3^\circ\text{C}$

試驗電壓: 440VAC, 每1小時將電壓升至1000VAC/60HZ,
持續時間0.1秒

試驗持續時間: 1008小時

試驗判據:

- (1) 外觀: 無可見損傷或滲出物
(2) 耐電壓: 0.66倍額定電壓下60秒(無異常)
(3) 電容量漂移: $\leq$ 初始測量值的 $\pm 3\%$
(4) 損耗角正切: $\leq 0.06\%$ 增加值
(5) 絕緣電阻: $\geq$ 初始規定值的50%

14、可焊性試驗

焊槽溫度: $270 \pm 5^\circ\text{C}$

焊料成份: 錫99.96%+銀0.04%

浸入時間: $2 \pm 0.5\text{秒}$

試驗判據: 引線表面95%浸上錫

15、耐焊接熱試驗:

根據DIN40046第18頁或IEC68-2-20試驗Ta.1和Tb.1之條件:

焊接溫度: $270 \pm 5^\circ\text{C}$

浸入時間: $3 \pm 1\text{秒}$

CAPACITANCE BODY MAY LIE ON BRINTING CIRCUIT BOARD

TEST CRITERIA :

- (1) APPEARANCE : NO DAMAGE AND GOOD TINNING
- (2) CAPACITANCE CHANGE: $\leq \pm 2\%$ OF THE INITIAL VALUE.

16. VIBRATION RESISTANCE:

IN ACCORDANCE WITH DIN 40046 SHEET 8 OR IEC

68-2-6 TEST FC CONDITIONS.

FREQUENCY RANGE: 10 – 55HZ

DISPLACEMENT AMPLITUDE: 0.75mm

CONFORMING TO MAX.: 10g

TEST DURATION: 6 HOURS

TEST CRITERIA:

- (1) APPEARANCE: NO VISIBLE DAMAGE
- (2) CAPACITANCE CHANGE: $\geq 2\%$ OF THE INITIAL VALUE

17. TENSILE STRENGTH OF TERMINALS

IN ACCORDANCE WITH DIN 40046 SHEET 19 OR IEC

68-2-21 TEST Ua.1 CONDITIONS.

TERMINAL	LOAD FORCE	HOLDING TIMES
DIA. (mm)	KG (N)	SEC.
< 0.5	0.5(5)	10
< 0.5 TO < 0.8	1.0(10)	10
> 0.8	2.0(20)	20

TEST CRITERIA:

NO WIRE BREAKAGE AND NO DAMAGE OF CAPACITOR.

18. BENDING OF TERMINALS

IN ACCORDANCE WITH DIN 40046 SHEET 19 OR IEC

68-2-21 TEST Ub. CONDITIONS

LOAD FORCE: 0.5 KG (5N)

BENDING TIME: TWO CONSECUTIVE BENDS (4 * 90 C)

TEST CRITERIA:

NO WIRE BREAKAGE AND NO DAMAGE OF CAPACITOR

19. MARKING:

CAPACITORS ARE MARKED WITH TYPE IDENTIFICATION
CAPACITANCE CAPACITANCE TOLERANCE, RATED VOLTAGE,
TEMPERATURE RANGE, NAME OF MANUFACTURE, DATE OF
MANUFACTURE AND APPROVED CERTIFICATION MARKS.

20. APPROVED BY:

UL/CUL	FILE NO.	E183780(N)
CSA	FILE NO.	1185337
VDE	CERTIFICATA NO.	40015608
SEV	CERTIFICATA NO.	06.0276
SEMKO	CERTIFICATA NO.	606616
DEMKO	CERTIFICATA NO.	313896-01
FIMKO	CERTIFICATA NO.	F122627
ÖVE	CERTIFICATA NO.	E14159-000-05
NEMKO	CERTIFICATA NO.	P06206844
CQC	CERTIFICATA NO.	CQC03001003067
EK	CERTIFICATA NO.	HU03014-6001A

電容器本體與焊料之間用pC板隔開

試驗判據:

- (1) 外觀: 無可見損傷且(引綫)鍍錫層完好無損
- (2) 電容量變化率: $\leq$ 初始測量值的 $\pm 3\%$

16、振動試驗:

根據DIN40046第8頁或IEC68-2-6試驗Fc之條件:

頻率範圍: 10~55HZ

位移: 0.75mm

最大加速度: 10g

試驗時間: 6小時

試驗判據:

- (1)外觀: 無可見損傷
- (2)電容量變化率: $\leq$ 初始測量值的 $\pm 2\%$

17、引出端強度試驗:

根據DIN 40046第19頁或IEC68-2-21試驗Ua.1之條件:

引出端	抗張強度	持續時間
直徑(mm)	KG(N)	秒
<0.5	0.5(5)	10
>0.5 to <0.8	1.0(10)	10
>0.8	2.0(20)	20

試驗判據:

引綫無破裂, 電容器本部無損傷

18、引出端彎曲強度試驗:

根據DIN40046第19頁或IEC68-2-21試驗Ub之條件:

抗彎曲強度: 0.5kg(5N)

彎曲時間: 左右兩邊邊疆彎曲(4 × 90度)

試驗判據:

引綫無破裂, 電容器本體無損傷

19、標志:

電容器應清晰標明: 電容量、電容量偏差範圍、
額定電壓、溫度範圍、制造廠家、生產日期
和通過的(安規)認證標志

20、已獲得之認證:

UL/CUL(美國)	檔案號	E183780(N)
CSA(加拿大)	檔案號	1185337
VDE(德國)	證書號	40015608
SEV(瑞士)	證書號	06.0276
SEMKO(瑞典)	證書號	606616
DEMKO(丹麥)	證書號	313896-01
FIMKO(芬蘭)	證書號	F122627
OVE(奧地利)	證書號	E14159-000-05
NEMKO(挪威)	證書號	P06206844
EK(韓國)	證書號	HU03014/6001A

Dimension 外形尺寸(mm)

Part number 編 號	Rated Cap 標稱容量	W(max) 寬	H(max) 高	T(max) 厚	P ± 1 脚距	d ± 0.1 綫徑
HQX472□275F□□SANYA□	0.0047 uF	13.0	9.0	4.0	10.0	0.6
HQX562□275F□□SANYA□	0.0056 uF	12.0	11.0	5.0	10.0	0.6
HQX682□275F□□SANYA□	0.0068 uF	12.0	11.0	5.0	10.0	0.6
HQX822□275F□□SANYA□	0.0082 uF	12.0	11.0	5.0	10.0	0.6
HQX103□275F□□SANYA□	0.01 uF	12.0	11.0	5.0	10.0	0.6
HQX103□275F□□SANYB□	0.01 uF	13.0	9.0	4.0	10.0	0.6
HQX103□275I□□SANYC□	0.01 uF	18.0	11.0	5.0	15.0	0.8
HQX123□275F□□SANYA□	0.012 uF	12.0	11.0	5.0	10.0	0.6
HQX153□275F□□SANYA□	0.015 uF	12.0	11.0	5.0	10.0	0.6
HQX183□275F□□SANYA□	0.018 uF	12.0	11.0	5.0	10.0	0.6
HQX223□275I□□SANYA□	0.022 uF	18.0	11.0	5.0	15.0	0.8
HQX223□275F□□SANYB□	0.022 uF	12.0	11.0	5.0	10.0	0.6
HQX273□275F□□SANYA□	0.027 uF	12.0	11.0	5.0	10.0	0.6
HQX333□275I□□SANYA□	0.033 uF	18.0	11.0	5.0	15.0	0.8
HQX333□275F□□SANYB□	0.033 uF	12.0	11.0	5.0	10.0	0.6
HQX473□275I□□SANYA□	0.047 uF	18.0	11.0	5.0	15.0	0.8
HQX473□275F□□SANYB□	0.047 uF	13.0	12.0	6.0	10.0	0.6
HQX563□275I□□SANYA□	0.056 uF	18.0	12.0	6.0	15.0	0.8
HQX563□275F□□SANYB□	0.056 uF	13.0	12.0	6.0	10.0	0.6
HQX683□275I□□SANYA□	0.068 uF	18.0	11.0	5.0	15.0	0.8
HQX683□275I□□SANYB□	0.068 uF	18.0	12.0	6.0	15.0	0.8
HQX823□275I□□SANYA□	0.082 uF	18.0	11.0	5.0	15.0	0.8
HQX823□275F□□SANYB□	0.082 uF	13.0	12.0	6.0	10.0	0.6
HQX104□275I□□SANYA□	0.1 uF	18.0	12.0	6.0	15.0	0.8
HQX104□275I□□SANYB□	0.1 uF	18.0	11.0	5.0	15.0	0.8
HQX104□275F□□SANYC□	0.1 uF	13.0	12.0	6.0	10.0	0.8
HQX124□275I□□SANYA□	0.12 uF	18.0	14.5	8.5	15.0	0.8
HQX154□275F□□SANYA□	0.15uF	13.0	14.0	8.1	10.0	0.8
HQX154□275I□□SANYB□	0.15 uF	18.0	12.0	6.0	15.0	0.8
HQX154□275I□□SANYC□	0.15 uF	18.0	14.5	8.5	15.0	0.8
HQX154□275N□□SANYD□	0.15 uF	26.5	16.5	7.0	22.5	0.8
HQX154□275N□□SANYE□	0.15 uF	25	14.5	6.0	22.5	0.8
HQX154□275I□□SANYF□	0.15 uF	18.0	11.0	5.0	15.0	0.8
HQX184□275I□□SANYA□	0.18 UF	18.0	14.5	8.5	15.0	0.8
HQX184□275N□□SANYB□	0.18 uF	26.5	16.5	7.0	22.5	0.8
HQX184□275N□□SANYC□	0.18 uF	25	14.5	6.0	22.5	0.8
HQX224□275N□□SANYA□	0.22 uF	26.5	16.5	7.0	22.5	0.8
HQX224□275N□□SANYB□	0.22 uF	25.0	14.5	6.0	22.5	0.8
HQX224□275I□□SANYC□	0.22 uF	18.0	16.5	8.5	15.0	0.8
HQX224□275I□□SANYD□	0.22 uF	17.0	15.5	7.5	15.0	0.8
HQX224□275I□□SANYE□	0.22 uF	17.0	16.5	8.5	15.0	0.8
HQX224□275I□□SANYG□	0.22 uF	18.0	13.5	7.5	15.0	0.8

注：第19號為環保部品Y用。

Dimension 外形尺寸(mm)

Part number 編 號	Rated Cap 標稱容量	W(max) 寬	H(max) 高	T(max) 厚	P ± 1 脚距	d ± 0.1 綫徑
HQX224□275I□□SANYH□	0.22 uF	18.0	13.0	6.5	15.0	0.8
HQX224□275F□□SANYI□	0.22 uF	13.2	16.0	8.5	10.0	0.8
HQX224□275F□□SANYJ□	0.22 uF	13.0	13.0	7.0	10.0	0.6
HQX274□275N□□SANYA□	0.27uF	26.5	17.0	8.5	22.5	0.8
HQX274□275I□□SANYB□	0.27uF	18.0	16.0	10.3	15.0	0.8
HQX334□275N□□SANYA□	0.33 uF	26.5	17.0	8.5	22.5	0.8
HQX334□275N□□SANYB□	0.33 uF	25.0	16.5	7.0	22.5	0.8
HQX334□275N□□SANYC□	0.33 uF	26.5	16.5	7.0	22.5	0.8
HQX334□275I□□SANYD□	0.33 uF(K)	18.0	16.0	10.3	15.0	0.8
HQX334□275I□□SANYE□	0.33 uF(上)	17.5	19.2	11.2	15.0	0.8
HQX334□275I□□SANYF□	0.33 uF(K)	18.0	16.5	8.5	15.0	0.8
HQX334□275I□□SANYG□	0.33 uF	17.0	16.0	8.5	15.0	0.8
HQX334□275I□□SANYH□	0.33 uF	18.0	14.5	8.5	15.0	0.8
HQX334□275I□□SANYI□	0.33 uF	17.0	14.0	8.5	15.0	0.8
HQX394□275N□□SANYA□	0.39 uF	26.5	19.0	10.0	22.5	0.8
HQX474□275R□□SANYA□	0.47 uF	31.5	20.0	11.0	27.5	0.8
HQX474□275R□□SANYB□	0.47 uF	31.5	16.5	7.5	27.5	0.8
HQX474□275N□□SANYC□	0.47 uF	26.5	17.0	8.5	22.5	0.8
HQX474□275N□□SANYD□	0.47 uF	26.5	19.0	10.0	22.5	0.8
HQX474□275N□□SANYE□	0.47 uF	25.0	17.0	8.5	22.5	0.8
HQX474□275I□□SANYF□	0.47 uF	18.0	19.0	10.8	15.0	0.8
HQX474□275I□□SANYG□	0.47 uF	17.0	18.0	10.0	15.0	0.8
HQX474□275I□□SANYH□	0.47 uF	18.0	16.0	10.3	15.0	0.8
HQX474□275I□□SANYI□	0.47 uF	17.5	19.2	11.2	15.0	0.8
HQX474□275I□□SANYJ□	0.47 uF	18.0	18.0	9.0	15.0	0.8
HQX564□275R□□SANYA□	0.56 uF	31.5	20.0	11.0	27.5	0.8
HQX564□275N□□SANYB□	0.56 uF	26.5	19.0	10.0	22.5	0.8
HQX564□275N□□SANYC□	0.56 uF	25.0	19.0	10.0	22.5	0.8
HQX564□275I□□SANYD□	0.56 uF	17.0	18.0	10.0	15.0	0.8
HQX684□275R□□SANYA□	0.68 uF	31.5	22.5	13.0	27.5	0.8
HQX684□275R□□SANYB□	0.68 uF	31.5	20.0	11.0	27.5	0.8
HQX684□275N□□SANYC□	0.68 uF	26.5	19.0	10.0	22.5	0.8
HQX684□275N□□SANYD□	0.68 uF	25.0	19.0	10.0	22.5	0.8
HQX684□275I□□SANYE□	0.68 uF	17.5	19.2	11.2	15.0	0.8
HQX824□275R□□SANYA□	0.82 uF	31.5	22.5	13.0	27.5	0.8
HQX824□275R□□SANYB□	0.82 uF	31.5	20.0	11.0	27.5	0.8
HQX824□275N□□SANYC□	0.82 uF	26.5	19.0	10.0	22.5	0.8
HQX824□275N□□SANYD□	0.82 uF	25.0	19.0	10.0	22.5	0.8
HQX105□275R□□SANYA□	1.0 uF	31.5	22.5	13.0	27.5	0.8
HQX105□275R□□SANYB□	1.0 uF	31.5	20.0	11.0	27.5	0.8
HQX105□275N□□SANYC□	1.0 uF	26.0	20.0	11.0	22.5	0.8
HQX105□275N□□SANYD□	1.0 uF	26.5	19.0	10.0	22.5	0.8

注：第19號為環保部品Y用。