



MESSRS: _____

Date: _____ year _____ month _____ day

APPROVE SHEET

Description : **INTERFERENCE SUPPRESSION CLASS X2**
_____ (THB-MKP)

Type No : **MKP SERIES**

Customer Type No : _____

APPROVED BY

HUA JUNG COMPONTS CO., LTD

Head Office:

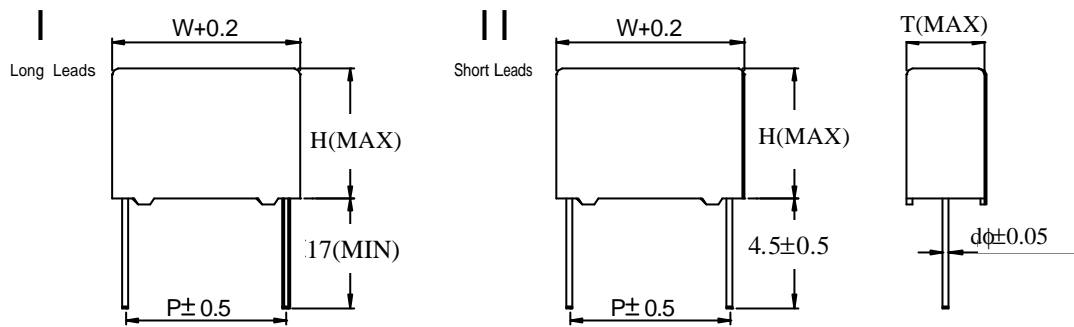
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TEL: 86-769-6322836 FAX: 86-769-6322840



TYPE : MKP -X2

UNIT:mm

CUSTOMER TAPE NO	CAP (UF)	CAP TOL \pm %	RATED VOLTAGE (VAC)	1 KHZ DF MAX (%)	DIMENSION					Fig	HJC TYPE NO.
					W	H	T	P	d		
	0.047	10	305	0.10	18	12	6	15	0.8	I	MKP-473K0305AB115U
	0.068	10	305	0.10	18	13	7	15	0.8	I	MKP-683K0305AB1151U
	0.1	10	305	0.10	18	13.5	7.5	15	0.8	I	MKP-104K0305AB1151U
	0.15	10	305	0.10	18	13.5	7.5	15	0.8	I	MKP-154K0305AB1151U
	0.22	10	305	0.10	18	15	9	15	0.8	I	MKP-224K0305AB1151U
	0.33	10	305	0.10	18	18	10	15	0.8	I	MKP-334K0305AB1151U
	0.47	10	305	0.10	18	19	12.5	15	0.8	I	MKP-474K0305AB1151U
	0.15	10	305	0.10	26	14.5	6	22.5	0.8	I	MKP-154K0305AB1221U
	0.22	10	305	0.10	26	15	7.5	22.5	0.8	I	MKP-224K0305AB1221U
	0.33	10	305	0.10	26	17	8	22.5	0.8	I	MKP-334K0305AB1221U
	0.47	10	305	0.10	26	19	10	22.5	0.8	I	MKP-474K0305AB1221U
	0.56	10	305	0.10	26	20	10	22.5	0.8	I	MKP-564K0305AB1221U
	0.68	10	305	0.10	26	20	11.5	22.5	0.8	I	MKP-684K0305AB1221U
	0.82	10	305	0.10	26	22	12	22.5	0.8	I	MKP-824K0305AB1221U
	1.0	10	305	0.10	26	24	13.5	22.5	0.8	I	MKP-105K0305AB1221U
	0.47	10	305	0.10	31	18	9	27.5	0.8	I	MKP-474K0305AB1271U
	0.56	10	305	0.10	31	20	10	27.5	0.8	I	MKP-564K0305AB1271U
	0.68	10	305	0.10	31	20	10	27.5	0.8	I	MKP-684K0305AB1271U
	0.82	10	305	0.10	31	21	11	27.5	0.8	I	MKP-824K0305AB1271U
	1.0	10	305	0.10	31	22	13	27.5	0.8	I	MKP-105K0305AB1271U
	1.5	10	305	0.10	31	24.5	15	27.5	0.8	I	MKP-155K0305AB1271U
	2.2	10	305	0.10	31	28	18	27.5	0.8	I	MKP-225K0305AB1271U
	3.3	10	305	0.10	41.5	30	18	37.5	1.0	I	MKP-335K0305AB1371U

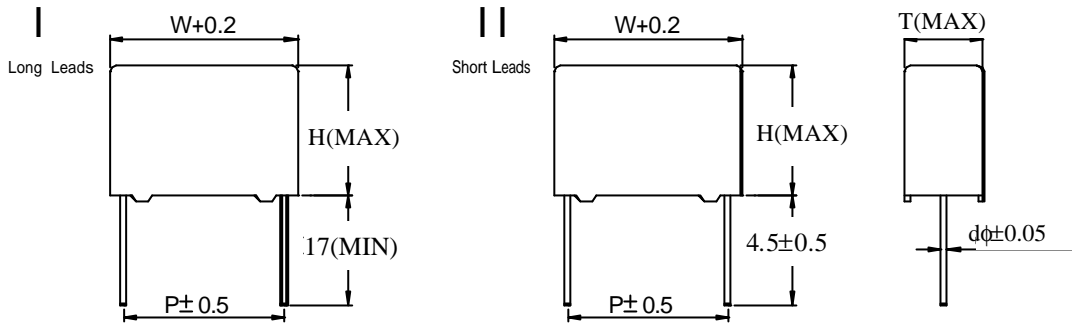
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Dimensions



TYPE : MKP -X2

UNIT:mm

CUSTOMER TAPE NO	CAP (UF)	CAP TOL $\pm \%$	RATED VOLTAGE (VAC)	1 KHZ DF MAX (%)	DIMENSION					Fig	HJC TYPE NO.
					W	H	T	P	d		
	3.9	10	305	0.10	41.5	32	20	37.5	1.0	I	MKP-395K0305AB1371U
	4.7	10	305	0.10	41.5	35	21	37.5	1.0	I	MKP-475K0305AB1371U
	5.6	10	305	0.10	41.5	36	24	37.5	1.0	I	MKP-565K0305AB1371U
	6.8	10	305	0.10	41.5	39	26	37.5	1.0	I	MKP-685K0305AB1371U
	8.2	10	305	0.10	41.5	41	29	37.5	1.0	I	MKP-825K0305AB1371U
	10.0	10	305	0.10	41.5	45	32	37.5	1.0	I	MKP-106K0305AB1371U

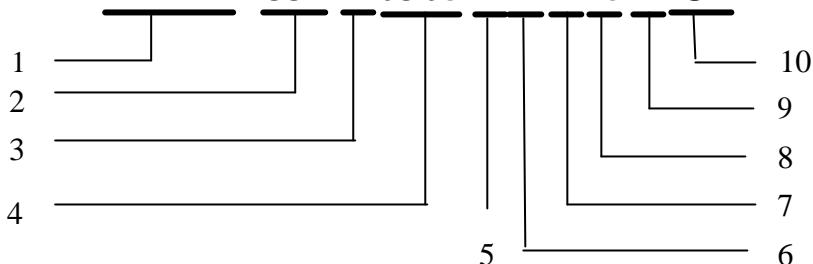
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MKP 0.33uF K 305VAC

18*18*10mm P:15mm

MKP - 334 K 0305 A B 1 15 1 U



1. TYPE OF CAPACITOR:

CODE	PPN -	MEF -	MPP -	PPS -	MPPN	MFTD	MPS -	MKP -	MEB -	MEA -	MET -	MFF -
TYPE	PPN	MEF	MPP	PPS	MPPN	MFTD	MPS	MKP	MEB	MEA	MET	MFF

CODE	MPSA	PPSB	MPT -	MPA -	MP2 -	MP3 -	MP4 -	MP5 -	MFF -	MPB -	HP4 -	HP5
TYPE	MPSA	PPSB	MPT	MPA	MP2	MP3	MP4	MP5	MFF	MPB	HP4	HP5

2. CAPACITANCE:

Express in picofarad (1 Mic rofarad = 1,000,000 Picofarads)
 first two digits represent significant figures, third digit
 specifies the number of zero to follow ex.

102=0.001uF **105=1.0uF**
103=0.01uF **106=10.0uF**
104=0.1uF

3. TOLERANCE:

F=1% G=2% H=3% J=5% K=10% M=20% L=2.5%

4. RATED VOLTAGE:

CODE	0050	0100	0250	0400	0630	1000	1200	1600	2000
TYPE	50V	100V	250V	400V	630V	1000V	1200V	1600V	2000V

5. VOLTAGE TYPE:

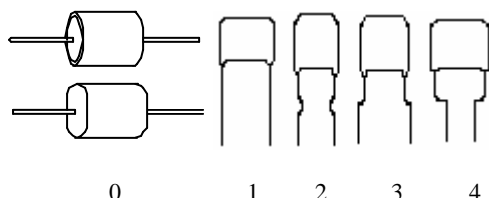
A=A.C. VOLTAGE D=D.C. VOLTAGE H=H-Pulse VOLTAGE

6. PACKAGING TYPE:

B=BULK T=TAPING

7. LEAD CONFIGURATION

0=AXIAL(include PSR,PSA) 1=STRAIGHT LEAD
 2=FORMED LEAD 3=FORMED LEAD
 4=FORMED LEAD *=FORMED LEAD



9. CODE FOR FINAL LEAD LENGTH (RADIAL): Unit:mm

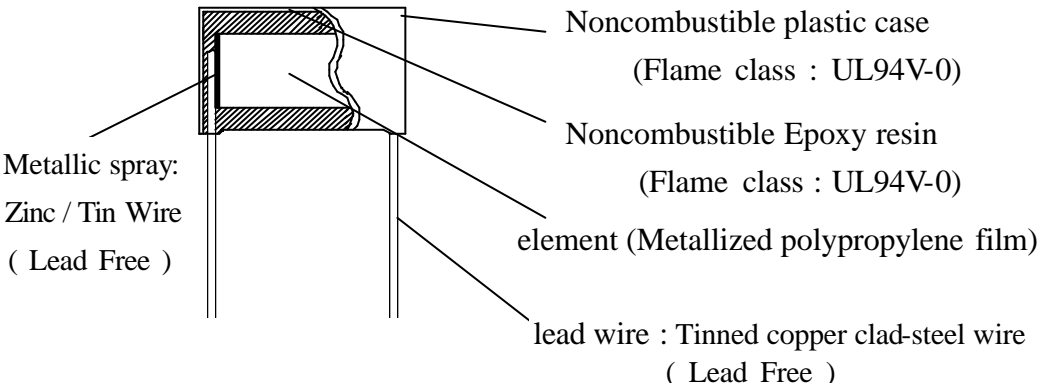


1 =17(MIN) 6 =15.0
 2 = 3.5 7 =20.0
 3 = 4.0 8 =TAP
 4 = 4.5 9 =6
 5 = 10.0 0 = AXIAL (include PSR , PSA)
 B = 5.0 S = 3.0 J =30

10.Remark code for special request

U = High Temperature&Humidity Load

8. CODE FOR FINAL LEAD PITCH (RADIAL): Unit:mm

05 = 5.0 07 = 7.5 10 = 10.0 12 = 12.5 15 = 15.0 16 = 16.5 17 = 17.5
 20 = 20.0 22 = 22.5 25 = 25.0 27 = 27.5 30 = 30.0 32 = 32.5
 35 = 35.0 37 = 37.5 40 = 40.0 42 = 42.5 00 = AXIAL(include PSR , PSA)

TYPE: MKP METALLIZED POLYPROPYLENE CAPACITOR		Page.:03
PRODUCT SPECIFICATION		09-07 Rev 6
1.SCOPE	<p>This specification covers the requirement for Metallized polypropylene dielectric fixed capacitor which is approved by UL/CUL, CSA, ENEC- SEMKO, and CQC.</p> <p>Typical applications:interference suppression and <<across-the-line>> applications</p>	
2.PRODUCT NAME	Metallized polypropylene capacitor, Type MKP	
3. PRODUCT RANGE	Operating temperature range.	-40 to +110° C (ENEC,IEC60384-14) +110° C max. (UL/CUL,UL1283) + 85 °C max. (UL/CUL,UL1414) -40 to +110° C (CQC,GB/T14472-1998) +110 °C max. (CSA ,CSA Std C22.2 No.8-M1986) (including temperature rise on unit surface)
	Rated voltage	305VAC max. (IEC60384-14) 310VAC max. (UL/CUL,UL1283) 250VAC max. (UL/CUL,UL1414) 305VAC max. (CQC,GB/T14472-1998) 250/310VAC max. (CSA , CSA Std C22.2 No.8-M1986) 630VDC max.
	Capacitance range	Refer to the individual drawing.
	Capacitance tolerance	Refer to the individual drawing.
4.APPEARANCE	1. Marking shall be legible in the right place. 2. Plating of lead wire shall be perfect without rust. 3. Coating shall be without any crack, rent, pinhole etc .	
5.CONSTRUCTION	<p>The capacitor has a non-inductive construction, wound with Metallized polypropylene film dielectric. The capacitor is enclosed in noncombustible plastic case, filled with noncombustible filling resin, and has two leads.</p> <div style="text-align: center;">  </div>	
6.DIMENSIONS	As specified in the individual drawing.	
7. CONDITIONAL STANDARD TEST	<p>The test shall be conducted at a temperature of from 15°C to 35°C, a humidity of from 45% to 75%.</p> <p>However the test shall be conducted at a temperature of 20±5°C, a humidity of 65±5%,when doubt is entertained about judgment.</p>	
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8.CHARACTER

No.	Item	Performance	Testing method				
1	Withstand Voltage	<p>[Between terminals]: Nothing abnormal shall be found, when a voltage specified below is applied :</p> <p>2200VDC for 3 sec. or C ≤ 0.0068μF: AC1500V or DC2121V for 1 minute C >0.0068μF: AC1000V or DC1768V for 1 minute</p> <p>1.Cut-off Current AC: 2A DC:10mA</p> <p>2.Current limiting resistance of 1Ω/V shall be connected to the test circuit.</p> <p>3.Slow-up voltage speed : 100V/sec</p> <p>[Between terminals and enclosure] : Nothing abnormal shall be found, when a voltage of 2050VAC is applied for 1 minute.</p>	IEC60384-14 4.2.1 (IEC 60384-1 4.6)				
2	Insulation resistance	<p>[Between terminals] :</p> <p>15000MΩ or more (when C ≤ 0.33 μF) at DC100V 5000MΩ μF or more (when C > 0.33 μF) at DC100V (2000MΩ or more at DC500V)</p> <p>[Between terminals and enclosure] :</p> <p>30000MΩ or more at DC100V 500MΩ or more at DC500V</p> <p>When the reading of measuring instrument becomes steady at a value after a voltage of DC 100±15V or DC 500±50V is applied for 1 minute ±5 seconds. (Ambient temperature at 20°C)</p>	IEC 60384-14 4.2.5 (IEC 60384-1 4.5)				
3	Capacitance	Within a range of specified value. (Measured at a frequency of 1 ± 0.2 KHz , at 20 °C, 1Vrms)	IEC 60384-14-4.2.2 (IEC 60384-1-4.7)				
4	Dissipation factor	0.1 % or less (Measured at a frequency of 1 ± 0.2 KHz , at 20 °C, 1Vrms)	IEC 60384-14-4.2.3 (IEC 60384-1-4.8)				
5	Termination strength	<p>[Tensile strength] The load specified below shall be applied to the terminal in its draw-out direction gradually up to the specified value and held thus for 10± 1 seconds. After the test , no breaking or loosening of the terminal shall be found.</p> <table border="1"> <thead> <tr> <th>Lead wire diameter [mm]</th> <th>Tensile force [N]</th> </tr> </thead> <tbody> <tr> <td>over 0.5 to 0.8</td> <td>10.0</td> </tr> </tbody> </table>	Lead wire diameter [mm]	Tensile force [N]	over 0.5 to 0.8	10.0	IEC 60384-14 4.3 (IEC 60384-1 4.13) IEC 60068-2-21 Test Ua1
		Lead wire diameter [mm]	Tensile force [N]				
over 0.5 to 0.8	10.0						
<p>[Bending strength] While the load specified below is applied to the lead wire, the body of the capacitor shall be bent 90° and returned to the original position. This operation shall be conducted in a few seconds. Then the body shall be bent 90° , at the same speed in the opposite direction and returned to the original position. After the test , no breaking or loosening of the terminal shall be found.</p> <table border="1"> <thead> <tr> <th>Lead wire diameter [mm]</th> <th>Bending force [N]</th> </tr> </thead> <tbody> <tr> <td>over 0.5 to 0.8</td> <td>5.0</td> </tr> </tbody> </table>	Lead wire diameter [mm]	Bending force [N]	over 0.5 to 0.8	5.0	IEC 60384-14 4.3 (IEC 60384-1 4.13) IEC 60068-2-21 Test Ua1		
Lead wire diameter [mm]	Bending force [N]						
over 0.5 to 0.8	5.0						

No.	Item	Performance	Testing method
6	Vibration proof	<p>The frequency shall be varied from 10Hz to 55Hz at 1.5mm amplitude and back to 10Hz in approximately 1 minute intervals. This motion shall be applied for a period of 2 hours in each of 3 mutually perpendicular directions.</p> <p>During the last 30 min of vibration in each direction, checks shall be made for open or short-circuiting and interruption.</p> <p>Performance :</p> <p>Bending strength : There shall be no open or short-circuiting and the connections must be stabilized.</p> <p>Appearance : There shall be no such mechanical damage as terminal damage etc.</p>	IEC 60384-14 4.7 (IEC 60384-1-4.17) IEC 60068-2-6 Test Fc
7	Solder ability	<p>The lead wire shall be immersed into soldering bath at $260\pm 5^{\circ}\text{C}$ for 3~5 seconds up to the depth of $1.5+0.5/-0\text{mm}$ from the bottom of the body.</p> <p>Performance:</p> <p>At least 95% of the circumferential face of lead wire up to immersed level shall be covered with new solder.</p>	IEC 60384-14 4.5 (IEC 60384-1-4.15) IEC 60068-2-20 Test Ta
8	Soldering heat resistance	<p>The lead wire shall be immersed into soldering bath and its depth of dipping shall be up to $1.5+0.5/-0\text{mm}$ from the root of terminals by using a heat shielding plate.</p> <p>Temperature and duration of soldering shall be $350\pm 10^{\circ}\text{C}$ for 3.5 ± 0.5 seconds or $260\pm 5^{\circ}\text{C}$ for 10 ± 1 seconds.</p> <p>After the immersion is finished, the capacitor shall be let alone at ordinary temperature and humidity for 1 ± 0.5 hours.</p> <p>After this, the capacitor shall be satisfied with the following performance.</p> <p>Appearance : No remarkable change.</p> <p>Withstand voltage :</p> <p>Nothing abnormal shall be found, when a voltage specified in item 8.1 is applied for 1 minute.</p> <p>Insulation resistance :</p> <p>Insulation resistance shall conform to Item 8.2.</p> <p>Change rate of capacitance :</p> <p>$\Delta C/C \leq \pm 3\%$ of the value before the test.</p>	IEC 60384-14 4.4 (IEC 60384-1-4.14) IEC 60068-2-20 Test Tb
9	Cold resistance	<p>The capacitor shall be placed in the testing chamber at $-40\pm 3^{\circ}\text{C}$ for $2+1/-0$ hours. After the test, the capacitor shall be let alone at the ordinary condition for 1.5 ± 0.5 hours, and shall be satisfied with the following performance.</p> <p>Change rate of capacitance</p> <p>$\Delta C/C \leq \pm 5\%$ of the value before the test.</p>	IEC 60384-14 4.11.4 IEC 6068-2-1 Test Aa
10	Damp heat With load	<p>The 240ac voltage shall be applied continuously to the capacitor at a temperature of 85°C and a relative humidity of 85% for 1000 hours, and then shall be let alone at ordinary condition for 24 hours.</p> <p>After the test, the capacitor shall be satisfied with the following performance.</p> <p>Appearance : No remarkable change.</p> <p>Change rate of capacitance : $\Delta C/C \leq \pm 10\%$ of the value before the test</p> <p>DF change $\Delta \tan \delta : \leq 1.0\%$ at 1 KHZ</p> <p>Insulation resistance : $\geq 50\%$ of spec value</p>	

No.	Item	Performance	Testing method
11	Humidity resistance	<p>The capacitor under test shall be put in the testing oven and kept at condition of the temperature $+40\pm 2$ °C and the humidity at 90 to 95% for 56 days and then shall be let alone at ordinary condition for 1.5 ± 0.5 hours.</p> <p>After the test , the capacitor shall be satisfied with the following performance.</p> <p>Appearance : No remarkable change.</p> <p>Withstand voltage :</p> <p>[between terminals]</p> <p>Nothing abnormal shall be found, when a voltage specified below is applied for 1 minute.</p> <p>$C \leq 0.0068\mu\text{F}$: AC1500V</p> <p>$C > 0.0068\mu\text{F}$: DC1075V</p> <p>[between terminals and enclosure]</p> <p>Nothing abnormal shall be found , when a voltage of 2050VAC is applied for 1 minute.</p> <p>Insulation resistance:</p> <p>[between terminals]</p> <p>7500MΩ or more (when $C \leq 0.33\mu\text{F}$) at DC100V</p> <p>2500MΩ. μF or more (when $C > 0.33\mu\text{F}$) at DC100V</p> <p>[between terminals and enclosure]</p> <p>15000MΩ or more at DC100V</p> <p>Change rate of capacitance :</p> <p>$\Delta C/C \leq \pm 5\%$ of the value before the test .</p> <p>Dissipation factor : $\leq 0.15\%$ at 1 KHZ.</p>	<p>IEC 60384-14 4.12 (IEC 60384-1 4.22) IEC 60068-2-3 Test Ca</p>
12	Rapid change of Temp.	<p>The capacitor under the test shall be kept in the testing oven and kept at condition of the temperature of -40 ± 3 °C for 30 ± 3 minutes.</p> <p>After this, the capacitor shall be let alone at the ordinary temperature for 3 minutes or less. After this , the capacitor under the test shall be kept in the testing oven and kept at condition of the temperature of $+110\pm 2$ °C for 30 ± 3 minutes. Then the capacitor shall be let alone at the ordinary temperature for 3 minutes or less. This operation shall be counted as 1 cycle , and it shall be repeated for 5 cycles successively .</p> <p>After the test , the capacitor shall be let alone at the ordinary condition for 1.5 ± 0.5 hours, and shall be satisfied with the following performance.</p> <p>Appearance : No remarkable change .</p> <p>Insulation resistance :</p> <p>$\geq 50\%$ of initial specified value.</p> <p>Change rate of capacitance :</p> <p>$\Delta C/C \leq \pm 10\%$ of the value before the test .</p> <p>Dissipation factor : $\leq 0.12\%$ at 1 KHZ.</p>	<p>IEC 60384-14 4.6 (IEC 60384-1 4.16) IEC 60068-2-14 Test Na</p>

No.	Item	Performance	Testing method				
13	High temperature loading	<p>The capacitor shall be submitted to an endurance of 1000h at 110°C at a voltage (*) except that once every hour the voltage shall be increased to 1000Vrms for 0.1 second.</p> <p>Voltage (*) : 125% of rated voltage</p> <p>After the test , the capacitor shall be satisfied with the following performance.</p> <p>Appearance : No remarkable change .</p> <p>Withstand voltage :</p> <p>[between terminals]</p> <p>Nothing abnormal shall be found , when a voltage specified below is applied for 1 minute.</p> <p>C ≤ 0.0068μF : AC1500V</p> <p>C > 0.0068μF : DC1075V</p> <p>[between terminals and enclosure]</p> <p>Nothing abnormal shall be found , when a voltage of AC 2050V is applied for 1 minute.</p> <p>Change rate of capacitance :</p> <p>Within ΔC/C: ≤± 10% of the value before the test .</p> <p>Insulation resistance :</p> <p>[between terminals]</p> <p>7500 MΩ or more (when C ≤ 0.33 μF) at DC100V</p> <p>2500 MΩ. μF or more (when C > 0.33 μF) at DC100V</p> <p>[between terminals and enclosure]</p> <p>3000 MΩ or more at DC100V</p> <p>Dissipation factor : ≤ 0.15% at 1KHZ.</p>	IEC 60384-14 4.14				
14	Impulse voltage	<p>The capacitor shall be subjected to a maximum of 24 impulses of the same polarity. If any three successive impulses are shown by the monitor to have had a waveform indicating that no self-healing breakdowns have occurred, then the capacitor shall be no more subjected to impulses.</p> <p>Impulse voltage(X2): when C ≤ 1.0μF U_P = DC 2.5 (kV)</p> <p>when C > 1.0μF U_P = DC 2.5/vC (kV)</p> <p>Appearance : No remarkable change.</p> <p>Others : There shall be no permanent breakdown or flashover.</p> <p>After impulse voltage, the capacitor shall be subjected to high temperature loading (item 13).</p>	IEC 60384-14 4.13				
15	Active flammability test	<p>The capacitor shall be wrapped in at least one not more than two complete layers of cheesecloth.</p> <p>The capacitor shall be subjected to 20 discharges from a tank Capacitor, charged to a voltage that, when discharged, places a peak voltage across the capacitor under test.</p> <p>The interval between successive discharges shall be 5 seconds.</p> <p>Throughout the test, a rated voltage U_R shall be applied across the capacitor under test and shall be maintained for 2 minutes after the last discharge, unless a blown fuse causes an open circuit.</p> <p>The cheesecloth around the capacitor shall not burn with a flame.</p> <table border="1" data-bbox="539 1921 1198 2000"> <tr> <td data-bbox="539 1921 858 1960">Rated voltage: U_R</td> <td data-bbox="858 1921 1198 1960">Peak voltage: U_i</td> </tr> <tr> <td data-bbox="539 1960 858 2000">305VAC</td> <td data-bbox="858 1960 1198 2000">DC 2.5kV +7 / -0%</td> </tr> </table>	Rated voltage: U _R	Peak voltage: U _i	305VAC	DC 2.5kV +7 / -0%	IEC 60384-14 4.18
Rated voltage: U _R	Peak voltage: U _i						
305VAC	DC 2.5kV +7 / -0%						

9.UL

No.	Item	Performance	Testing method																	
1	Across-the-line discharge test	<p>The capacitor shall be subjected to four discharges from a dump capacitor charged to a voltage that, when discharged, places a potential of DC5kV across the capacitor under test, The interval between successive discharges is to be 5 seconds. During the discharge test, a 240VAC, 60 Hz potential is to be applied across the capacitor under test. The 240VAC potential is to be maintained for 30 seconds after the fourth discharge, unless the circuit is opened in a shorter time by failure of the capacitor. There shall be no glowing or flaming of a single layer of cheesecloth placed securely around the capacitor, or expulsion of materials from the capacitor which may produce a casualty, fire or shock hazard.</p> <table border="1" data-bbox="475 629 1230 775"> <thead> <tr> <th colspan="2">Capacitor Under test (Ct)</th> <th>Dump capacitor (Vdc)</th> <th>Applied voltage (Vdc)</th> </tr> </thead> <tbody> <tr> <td>0.001</td> <td>~ 0.005 μF</td> <td>0.005 μF</td> <td rowspan="4">5000*(Cd+Ct) Cd</td> </tr> <tr> <td>0.0051</td> <td>~ 0.05 μF</td> <td>0.05 μF</td> </tr> <tr> <td>0.051</td> <td>~ 0.5 μF</td> <td>0.5 μF</td> </tr> <tr> <td>0.51</td> <td>~ 1.0 μF</td> <td>1.0 μF</td> </tr> </tbody> </table>	Capacitor Under test (Ct)		Dump capacitor (Vdc)	Applied voltage (Vdc)	0.001	~ 0.005 μF	0.005 μF	5000*(Cd+Ct) Cd	0.0051	~ 0.05 μF	0.05 μF	0.051	~ 0.5 μF	0.5 μF	0.51	~ 1.0 μF	1.0 μF	UL1414.13 CSA C22.2 NO.1 10.5.1
Capacitor Under test (Ct)		Dump capacitor (Vdc)	Applied voltage (Vdc)																	
0.001	~ 0.005 μF	0.005 μF	5000*(Cd+Ct) Cd																	
0.0051	~ 0.05 μF	0.05 μF																		
0.051	~ 0.5 μF	0.5 μF																		
0.51	~ 1.0 μF	1.0 μF																		
2	Line-by-pass Discharge test	<p>The capacitor shall be subjected to 50 discharges from a 0.001 μF capacitor that has been charged to a potential of DC 10kV. The interval between successive discharges is to be 5 seconds. After the fiftieth discharge, there shall be no visible evidence of damage to a capacitor.</p> <p>Withstand voltage: [between terminals] & [between terminals and enclosure] Nothing abnormal shall be found, when a voltage of 1000VAC is applied for 1 minute.</p>	UL1414,16 CSA C22.2 NO.1 6.12.2																	
3	Damp heat insulation	<p>The capacitor under test shall be put in the testing oven and kept at condition of the temperature at 20 to 30 °C and the humidity at 93 ± 2 % for 48 hours.</p> <p>After the test, the capacitor shall be satisfied with the following performance.</p> <p>Insulation resistance: (between terminals and enclosure) 2 MΩ or more (at DC250V)</p>	UL1283.29																	
4	Flame test	<p>Three samples of the capacitor shall be subjected to three 15 sec. applications of a test flame, the period between applications of the flame being 15 seconds, the material of the enclosure is acceptable if each capacitor does not continue to flame for more than 15 seconds after the first and second applications, and for not more than 60 seconds after the third application.</p> <p>A supply of gas having a heating value of approximately 1000 Btu per cubic foot at normal pressure and a 3/8- inch diameter Tirrill burner are to be used. The test flame is to be 3/4 inch high with air ports of the burner closed.</p> <p>Each capacitor is to be mounted in a position that is most conducive to the ignition of the capacitor and which is permitted by the physical construction of the capacitor. The tip of the test flame is to be applied at any location on the body of each capacitor.</p>	UL1414.9																	

10. Approved standard

Agency	Country	Specification	File number
UL/CUL	U.S.A	UL 1414 MKP 0.0047~1.0uF 250VAC, 85° C. UL 1283 MKP 0.0047~10.0uF 310VAC, 110° C.	E149075 E221690
CSA	Canada	CAN/CSA-E60384-14:09,MKP0.0047~1.0uF 250VAC, 110°C CSA C22.2 No.8-M1986,MKP0.0047~10.0uF 310VAC,110 °C	2294211 1118279
ENEC	ENEC Semko	IEC 60384-14:2005 MKP 0.0047~10.0 uF 305VAC , 40/110/56/B	NO.SE/0252-5
CB	Semko	IEC 60384-14:2005 MKP 0.0047~10.0 uF 305VAC , 40/110/56/B	SE-66377
CQC	China	GB/T14472 -1998 MKP0.0047~10.0uF 305VAC, 40/110/56/B	

The **ENEC** mark was accepted in all European countries as equivalent of
VDE , SEV , SEMKO , DEMKO , NEMKO , FIMKO , etc.

11. Rated Voltage Pulse Slope dv/dt (V/μs) at 560VDC

Pitch V.R	7.5 mm	10 mm	15 mm	22.5 mm	27.5 mm
630 VDC	500	400	300	180	120

NEW MARKING**Capacitor is Marked on Body for Following Items.**

- (1) Logo , Manufacturing Symbol
- (2) Nominal Capacitance
- (3) Capacitance Tolerance
- (4) Rated Voltage
- (5) Part Name (Capacitor Class X2)
- (6) Monogram of Safety Standard Approvals.

The ENEC Mark:

ENEC is an abbreviation for “European Norms Electrical Certification”.

ENEC mark was accepted in all European countries as equivalent of



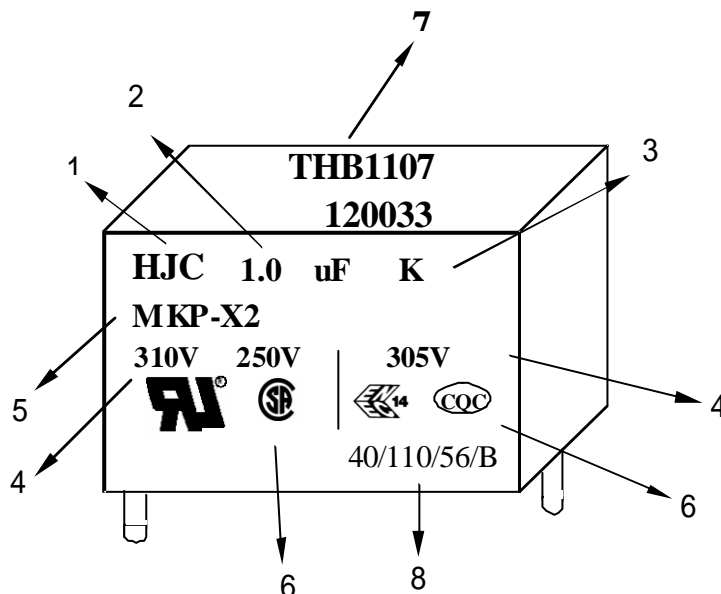
- (7) Production No.(Date Code) :

Type Name&Date Code : THB1107

Production No. : 120033

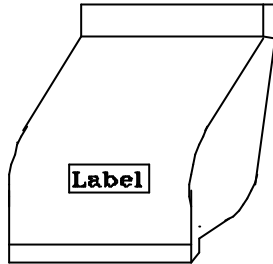
- (8) Application categories are indicated by code letters and number:

- 1st. Number (40): Minimum Temperature (-40°C).
- 2nd. Number (110): Maximum Temperature (110°C).
- 3rd. Number (56): The days of damp heat test.
- 4th. Code letter (B) : Category of Passive flammability.



PACKAGE

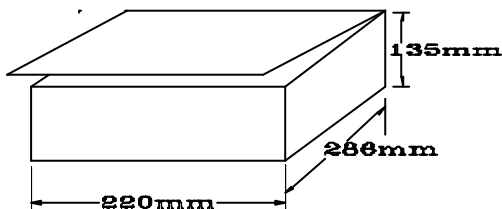
Package Bag



BODY SIZE(mm)	PCS / Container
D1 (18×11×5)	500 PCS
D2 (18×12×6)	500 PCS
D3 (18×13.5×7.5)	200 PCS
E2 (26.5×16.5×7)	100 PCS
E3 (26.5×17×8.5)	100 PCS
E4 (26.5×19×10)	100 PCS
F1 (32×20×11)	100 PCS
F2 (32×22.5×13)	50 PCS
F3 (32×24.5×14)	50 PCS

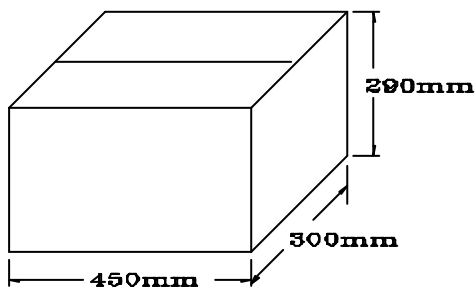
- label : 1. Manufacture 's name
 2. Type name
 3. Part no
 4. Quantity
 5. Packing

Container



BODY SIZE(mm)	Wrap / Container
D1 (18×11×5)	8 Wrap
D2 (18×12×6)	6 Wrap
D3 (18×13.5×7.5)	5 Wrap
E2 (26.5×16.5×7)	8 Wrap
E3 (26.5×17×8.5)	8 Wrap
E4 (26.5×19×10)	5 Wrap
F1 (32×20×11)	4 Wrap
F2 (32×22.5×13)	4 Wrap
F3 (32×24.5×14)	4 Wrap

Carton



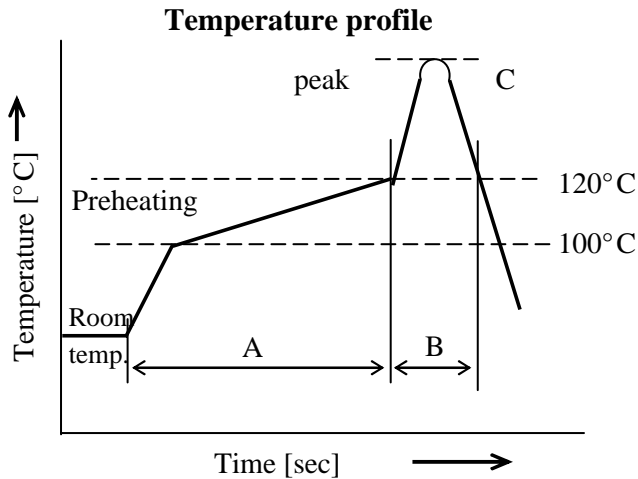
1. 4 Containers / PER CARTON
2. OUTSIDE DETAILS OF CARTON:
 - A. CUSTOMER 'S NAME
 - B. TYPE
 - C. SPECIFICATION
 - D. PART ON.
 - E. QUANTITY

HUA JUNG COMPONENTS CO., LTD.

Lead Free wave soldering conditions

Component: Film Capacitors

1. Wave flow soldering



Recommendable condition

	Conditions	Values	Unit
A	Heating time	50 - 100	sec
	Heating temperature	100 - 120	°C
	Temp. rise gradient	1 - 2	°C/sec
B	Dipping time	2 - 4	sec
C	Peak temperature	260	°C
	Peak-temp. hold time	Momentary	sec

2. Requirement (Wave flow soldering) :

Polypropylene film capacitors body temperature less than 120° C, 60sec

Polyester film capacitors body temperature less than 150° C, 60sec

3. Wave Flow soldering (solder dipping)

Peak temperature	260° C
Dipping time	4 sec
Soldering	1 time

component for Insertion :Dipping to the lead joint of component

4. Hand soldering

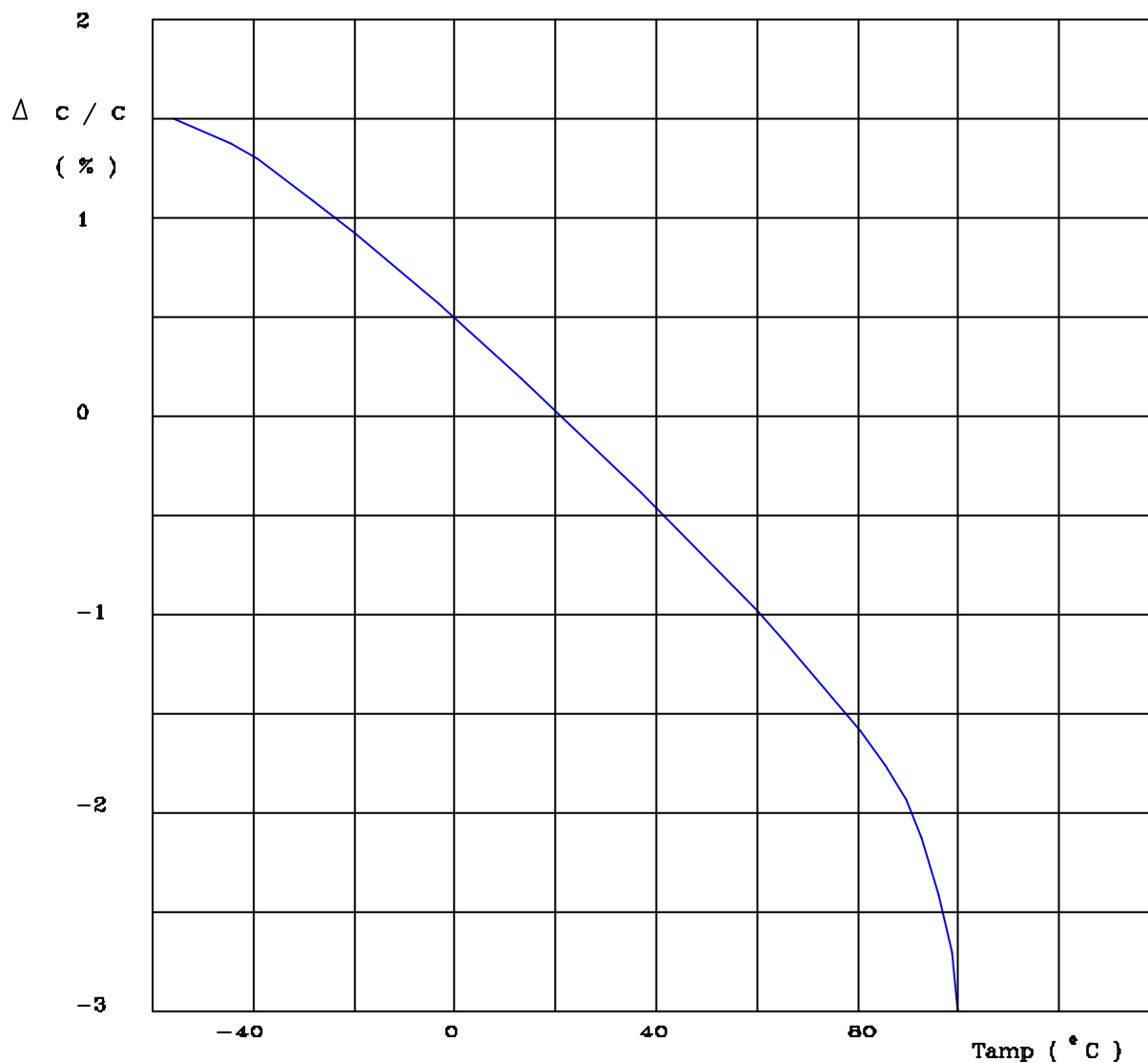
Soldering iron tip temperature	350° C
Soldering time	3 sec

HUA JUNG COMPONENTS CO.,LTD.

MKP Series, Metallized Polypropylene film capacitor

Capacitance as a function of ambient free air temperature : typical curve

CAPACITANCE

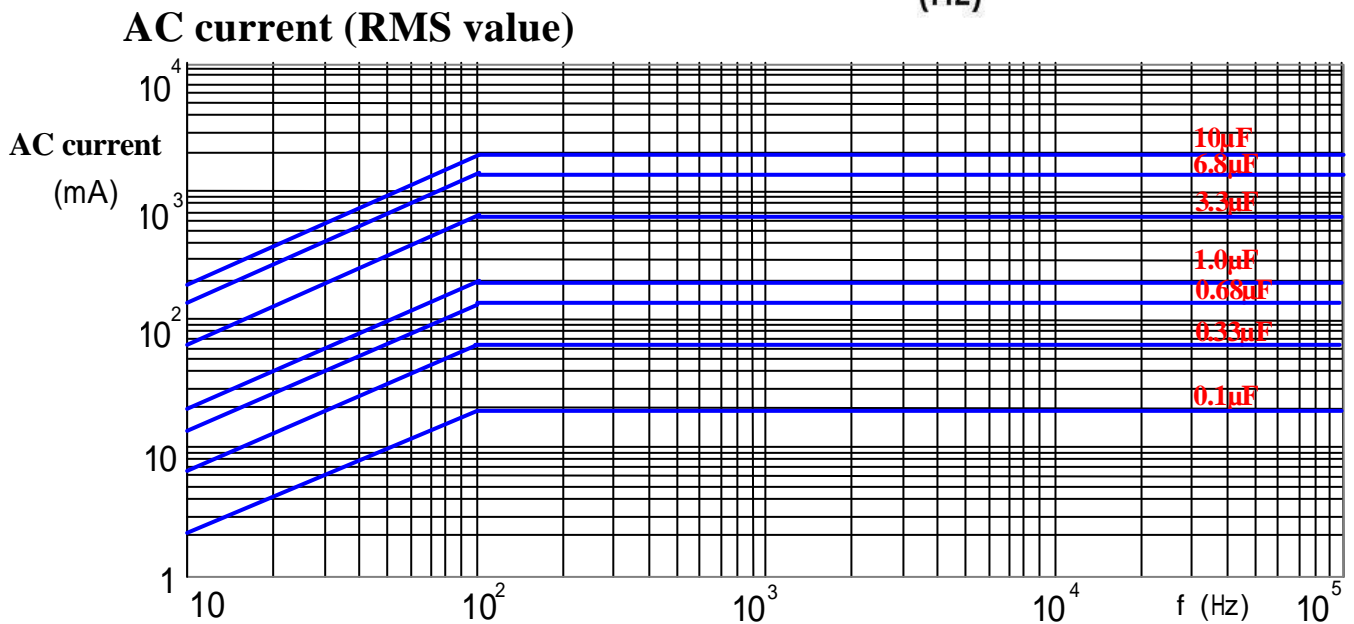
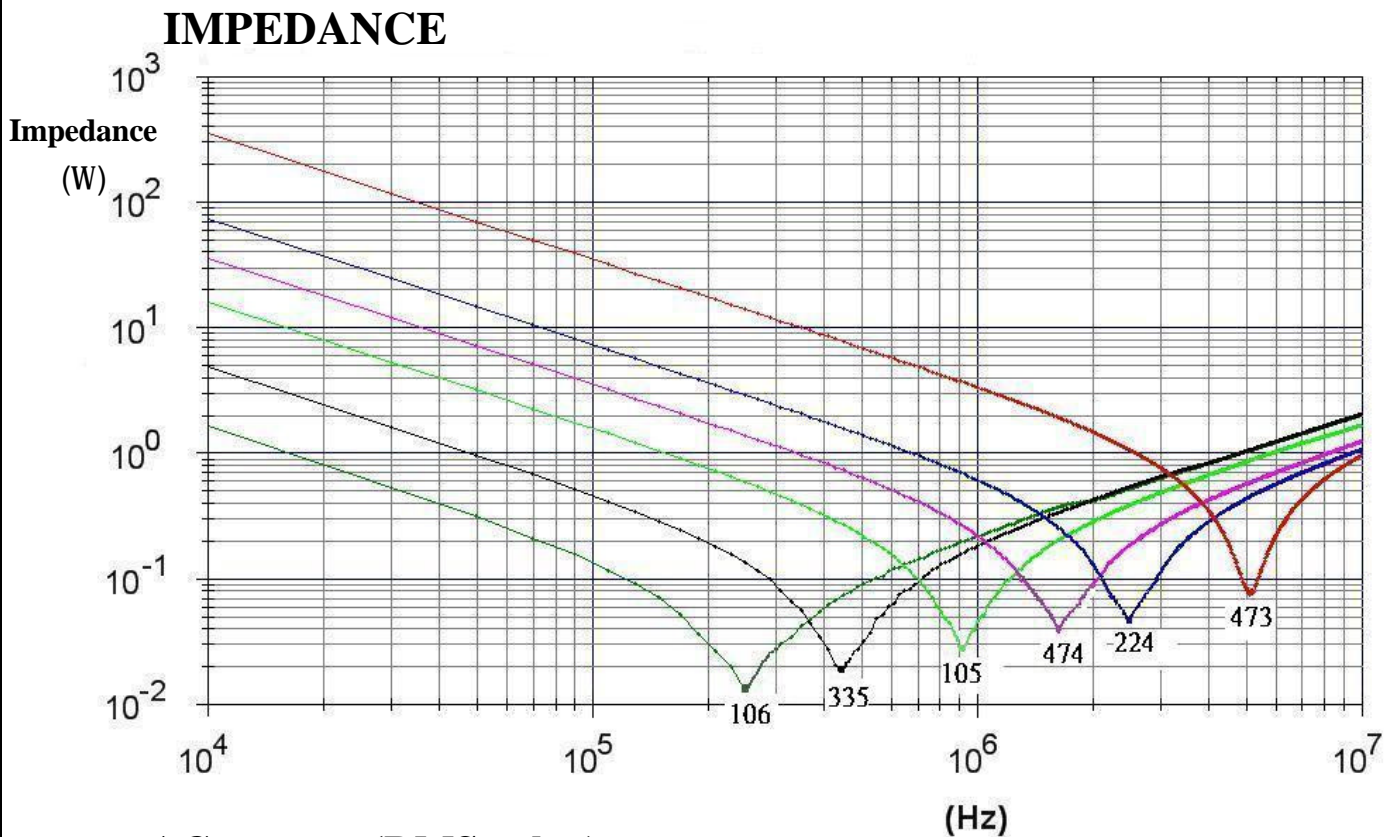


— All capacitance values are specified at 1 KHz .

HUA JUNG COMPONENTS CO., LTD.

MKP Series, Metallized Polypropylene film capacitor

Impedance as a function of frequency:
typical curves



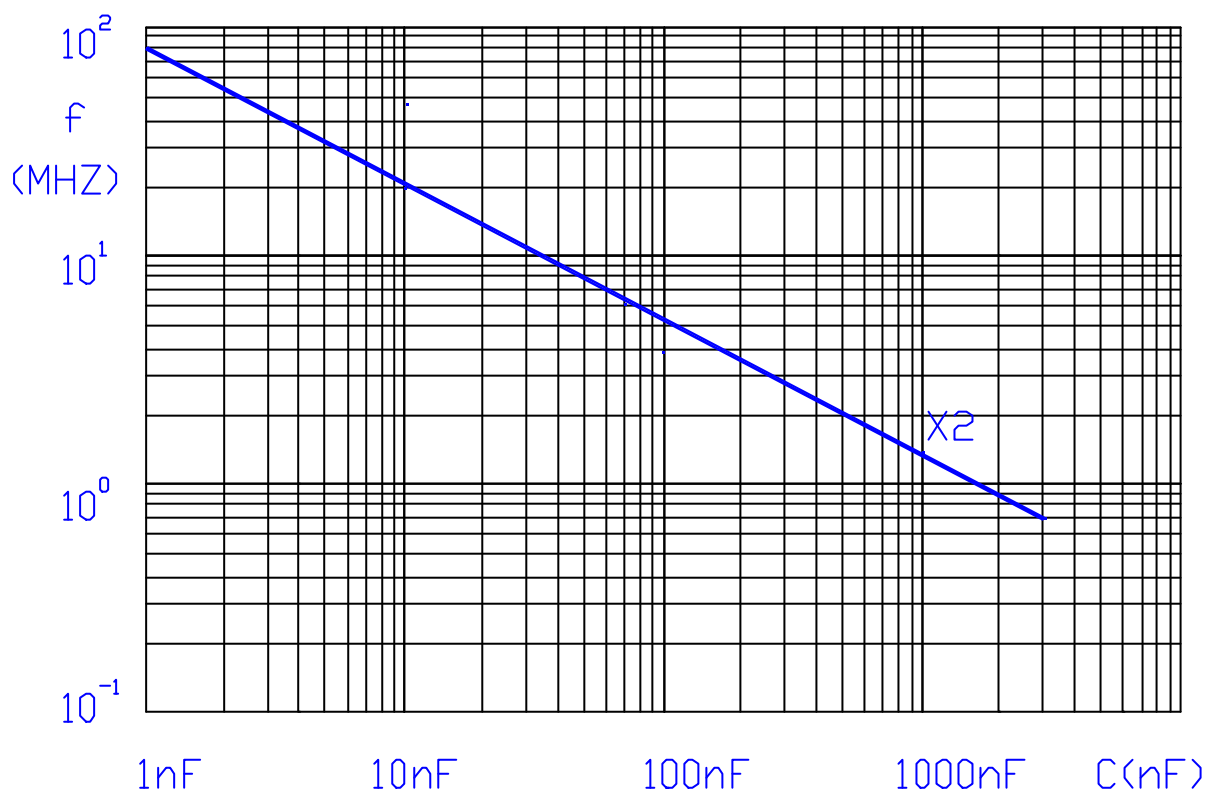
AC current (RMS value) as a function of frequency at $T_{amb} = 110$

HUA JUNG COMPONENTS CO., LTD.

MKP Series, Metallized Polypropylene film capacitor

Resonant frequency as function of capacitance : typical curves

RESONANT FREQUENCY





FOKY2.E221690
Electromagnetic Interference Filters - Component

[Page Bottom](#)

Electromagnetic Interference Filters - Component

[See General Information for Electromagnetic Interference Filters - Component](#)

HUA JUNG COMPONENTS CO LTD
37 FENG PING 1ST RD
TA LIAO, KAOHSIUNG HSIEN 831 TAIWAN

E221690

Capacitors, Cat. Nos. MKP, 0.0047 uF to 10.0 uF, rated 310 V ac.

Cat. No. Y2./X1, 0.001 to 0.22 uF, 310 V ac.

Marking: Company name or trademarks  or **H** or **H** or **HJC** or **H** and model designation.
[Last Updated](#) on 2010-06-21

[Questions?](#)

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FOWX2.E149075
Across-the-line Capacitors, Antenna-coupling Components, Line-bypass Components and Fixed Capacitors for Use in Electronic Equipment

[Page Bottom](#)

Across-the-line Capacitors, Antenna-coupling Components, Line-bypass Components and Fixed Capacitors for Use in Electronic Equipment

[See General Information for Across-the-line Capacitors, Antenna-coupling Components, Line-bypass Components and Fixed Capacitors for Use in Electronic Equipment](#)

HUA JUNG COMPONENTS CO LTD
37 FENG PING 1ST RD
TA LIAO, KAOHSIUNG HSIEN 831 TAIWAN

E149075

Type	V Rating	Capacitance Rating or Range	Series Resistance Rating or Range	Spark GAP
Across the Line Capacitors				
Type Model MKP	250 V ac	0.0047-1.0 uF	—	—
Type Model MKT	250 V ac	0.01-1.0 uF	—	—

Marking: Company name or trademarks  or **H** or **H** or **HJC** or **H** and type designation.
[Last Updated](#) on 2009-02-03



Certificate of Compliance

Certificate: 2294211

Master Contract: 158927

Project: 2294211

Date Issued: June 14, 2010

Issued to: **Hua Jung Components Co., Ltd.**

No 37 Feng Ping 1st Rd

Ta Liao

Kaoshiung Hsien,

Taiwan

Attention: Mr. Zu Guo Yao

The products listed below are eligible to bear the CSA Mark shown



Humaid Razool

Issued by: Humaid Razool, P. Eng.

PRODUCTS

CLASS 2221 51 - AUDIO AND VIDEO EQUIPMENT - Accessories and Parts for Electronic Products

Class X-2 capacitors, Type MKP, rated 250Vac, 0.0047 μ F to 1.0 μ F, 40/110/56/B.

Note: The subject components are certified for use in certified equipment where the combination may be subject to investigation by CSA International.

APPLICABLE REQUIREMENTS

CAN/CSA - E60384-14:09 - Fixed Capacitors for Use in Electronic Equipment - Part 14: Sectional Specification: Fixed Capacitors for Electromagnetic Interference Suppression and Connection to the Supply Mains.



CSA INTERNATIONAL

Certificate of Compliance

Certificate: 1118279

Master Contract: 158927

Project: 2194647

Date Issued: 2009/07/23

Issued to: Hua Jung Components Co., Ltd.

No 37 Feng Ping 1st Rd

Ta Liao

Kaoshiung Hsien,

Taiwan

Attention: Hwei-Jane Huang

The products listed below are eligible to bear the CSA Mark shown



Issued by: Mizanur Chowdhury

Authorized by: Renzo Pupulin, C.E.T., Product Group Manager

PRODUCTS

CLASS 2221 02 - AUDIO AND VIDEO EQUIPMENT - Electromagnetic Interference (EMI) Filters

Line#to#line capacitors, Type MKP, rated 310V ac, 110C, 0.0047 μ F to 10.0 μ F.

Note: The capacitors are Certified for use as components of other Certified equipment where the suitability of the combinations is to be determined by CSA International.

APPLICABLE REQUIREMENTS

CSA Std C22.2 No. 8-M1986 - Electromagnetic Interference (EMI Filters)

Hua Jung Electronics (Guangdong) Co., Ltd.
3 Village Industrial Area
Keji Dong Road, Shijie Town
Dongguan, Guangdong
KINA

Handled by
Susanne Lundgren
Direct telephone
+46 8 750 02 92
Reference
1116824
E-mail
susanne.lundgren@intertek.com
Your reference
- / yaozuguo

19 August 2011

Capacitor for radio interference suppression, type MKP

We have the pleasure to enclose the requested CENELEC ENEC Agreement Licence for the product defined above.

Intertek ETL SEMKO ensures that information on the product covered by this licence will be published in the "Product list" on www.eepca.org. This means that the product can be freely marketed in the participating countries without any further application procedures.

The currently participating signatories are located in the following countries:

Austria	Belgium
Czech Republic	Denmark
Finland	France
Germany	Great Britain
Greece	Hungary
Ireland	Italy
Luxemburg	Netherlands
Norway	Portugal
Slovenia	Spain
Sweden	Switzerland.

Yours sincerely

Intertek Semko AB
Product Certification




Licence for



CENELEC ENEC Agreement Licence Ref. No. SE/0252-5

Product:	Capacitor for radio interference suppression
Type designation:	MKP
Test Report No.	1116824-01
Licence holder:	Hua Jung Electronics (Guangdong) Co., Ltd. 3 Village Industrial Area Keji Dong Road, Shijie Town Dongguan, Guangdong CHINA
The product complies with the standard(s):	EN 60384-14:2005
Licence holder is authorized to use the mark with the following limitations:	-
Date of expiry:	19 August 2016

Additional information in Appendix

<i>Certification Body</i>	Intertek Semko AB, Product Certification	<i>Place</i>	Kista - Stockholm
<i>Signed</i>	 _____ Nilsas Lood	<i>Date</i>	19 August 2011
<i>Internal reference:</i>	SUL		

This Licence is the result of testing a sample of the product submitted, in accordance with the provisions of the relevant specific standard. A copy of the Licence shall be filed in the place of manufacturing. The Licence has been established by a body which is a signatory to the ENEC Agreement ratified by CENELEC Marks Committee on 10 April 1992.

APPENDIX**CENELEC ENEC Agreement Licence Ref. No. SE/0252-5**

Test Report No. 1116824-01

Technical data

<i>Type designation</i>	MKP
<i>Rated Voltage</i>	305VAC
<i>Class and subclass</i>	X2
<i>Capacitance</i>	0.0047-10uF
<i>Climatic category</i>	40/110/56/B
<i>Trade mark</i>	HJC

Manufacturing site(s): Hua Jung Electronics (Guangdong) Co., LTD
3 Village Ind. Area
Keji Dong Road
Shijie Town, Dongguan, Guangdong
CHINA

19 August 2011

Hua Jung Electronics (Guangdong) Co., Ltd.
3 Village Industrial Area
Keji Dong Road, Shijie Town
Dongguan, Guangdong
CHINA

Handled by
Susanne Lundgren
Direct telephone
+46 8 750 02 92
Reference
1116824
E-mail
susanne.lundgren@intertek.com
Your reference

19 August 2011

CB-certificate(s) SE-66377

We have the pleasure to enclose the requested CB-certificate(s) and the pertaining Test Report.

We also enclose a form for Identity Declaration (ID). The ID shall be filled in by you and be used to verify that the specimen to be submitted to other Certification Bodies is absolutely identical with the one we have tested. On the basis of these documents you may apply for a licence to use the national marks of the countries whose Certification Bodies have signed the agreement. The documents together with a specimen should be submitted in the country where approval is applied for and in accordance with the relevant national procedures.

Yours sincerely

Intertek Semko AB
Product Certification

Enclosure CB certificate(s)



Ref. Certif. No.

SE-66377

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST
CERTIFICATES FOR ELECTRICAL EQUIPMENT
(IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE
CERTIFICATS D'ESSAIS DES EQUIPEMENTS
ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE

CERTIFICAT D'ESSAI OC

Product
Produit

Capacitor for radio interference suppression

Name and address of the applicant
Nom et adresse du demandeur

Hua Jung Electronics (Guangdong) Co., Ltd.
3 Village Industrial Area, Keji Dong Road, Shijie Town,
Dongguan, Guangdong, CHINA

Name and address of the manufacturer
Nom et adresse du fabricant

Same as applicant

Name and address of the factory
Nom et adresse de l'usine
Note: When more than one factory, please report on page 2
Note: Lorsque il y plus d'une usine, veuillez utiliser la 2^{ème} page

Hua Jung Electronics (Guangdong) Co., LTD.
3 Village Ind. Area, Keji Dong Road, Shijie Town, Dongguan,
Guangdong, CHINA

Ratings and principal characteristics
Valeurs nominales et caractéristiques principales

0.0047 - 10uF, Class X2, 305VAC, 40/110/56/B

Trademark (if any)
Marque de fabrique (si elle existe)

HJC

Type of Manufacturer's Testing Laboratories used
Type de programme du laboratoire d'essais
constructeur

MKP

Model / Type Ref.
Ref. De type

Additional information (if necessary may also be
reported on page 2)
Les informations complémentaires (si nécessaire,
peuvent être indiqués sur la 2^{ème} page)

A sample of the product was tested and found
to be in conformity with
Un échantillon de ce produit a été essayé et a été
considéré conforme à la

IEC 60384-14:2005

As shown in the Test Report Ref. No. which forms part
of this Certificate
Comme indiqué dans le Rapport d'essais numéro de
référence qui constitue partie de ce Certificat

1116824-01

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

Intertek Semko AB
Box 1103
SE-164 22 Kista, Sweden
Int +46 8 750 00 00

Signature:

Bo Berglóf

Date: 19 August 2011

Mandated reviewer: THA

SUL