



File E149075

Vol 3

Issued: 2001-04-05
Revised: 2009-01-30

FOLLOW-UP SERVICE PROCEDURE
(TYPE R)

COMPONENT - ACROSS-THE-LINE CAPACITORS, ANTENNA-COUPLING AND
LINE-BYPASS COMPONENTS
(FOWX2,FOWX8)

Complementary Product Category

COMPONENT - ELECTROMAGNETIC INTERFERENCE FILTERS
(FOKY2)

Manufacturer: HUA JUNG ELECTRONICS (GUANGDONG) CO
(553000-001) LTD
3 VLG INDUSTRIAL AREA
KEJI E RD
SHIJIE TOWN
DONGGUAN GUANGDONG CHINA

Applicant: HUA JUNG COMPONENTS CO LTD
(498177-003) 37 FENG PING 1ST RD
TA LIAO
KAOHSIUNG HSIEN 831 TAIWAN

Recognized Company: SAME AS APPLICANT
(498177-003)

This Procedure authorizes the above manufacturer to use the marking specified by Underwriters Laboratories Inc.(UL), or any authorized licensee of UL, only on products covered by this Procedure, in accordance with the applicable UL Services Agreement.

The prescribed Mark or Marking shall be used only at the above manufacturing location on such products which comply with this Procedure and any other applicable requirements.

The Procedure contains information for the use of the above named Manufacturer and representatives of Underwriters Laboratories Inc. and is not to be used for any other purpose. It is lent to the Manufacturer with the understanding that it is not to be copied, either wholly or in part, and that it will be returned to Underwriters Laboratories Inc. (UL) or any authorized licensee of UL, upon request.

This PROCEDURE, and any subsequent revision, is the property of Underwriters Laboratories Inc.(UL) and the authorized licensee of UL and is not transferable.

Underwriters Laboratories Inc.

Stephen Hewson
Senior Vice President
Global Follow-Up Service Operations

William R. Carney
Director
North American Certification Program

REVISED DUE TO BASIC MODEL NUMBER CHANGE,
ALSO VOL. CHANGED FROM 1 TO 3 PER ENGINEER

UNDERWRITERS LABORATORIES INC.
MULTIPLE RECOGNITION CORRELATION SHEET

316 Guangzhou
FIELD REPRESENTATIVE
PROCEDURE VOL. 3

E149075

Issued: 2003-03-26
Revised: 2003-06-23

ML File No. E223458

MULTIPLE RECOGNITION
of

ACROSS-THE-LINE CAPACITORS, ANTENNA-COUPLING AND LINE-BYPASS
COMPONENTS
(FOWX2)

for

[716081-001]

Comar Condensatori S P A

Basically Recognized for

[498177-001]

Hua Jung Components Co., Ltd.

Basically Recognized products covered by Procedure and/or Reports under
File No. E149075, Vol. 3

<u>Products Covered</u>	<u>Report Date</u>	<u>Basic Applicant's (Supplier's) Product Designation</u>	<u>Multiple Listee's Product Designation</u>
Across-the-line-capacitor	7-3-01	MKP	COMAR

Marking: Same as that described in Follow-Up Service Procedure and/or Report except for Multiple Listee's name, ML tradename, when applicable, and product designation.

IC: 316 GUANGZHOU

ML FILE NO. E317135

Issued: 2007-10-31

MULTIPLE RECOGNITION
of
ACROSS-THE-LINE CAPACITORS, ANTENNA-COUPLING AND LINE-BYPASS COMPONENTS
(FOWX2)
for

[566997-001] ILLINOIS CAPACITOR INC

Basically Recognized for:

[498177-003] HUA JUNG COMPONENTS CO LTD (NBK)

Basically Recognized products covered by Procedure and/or Reports under File No. E149075, Volume 3

Products Covered	Report Date	Basic Applicant's (Supplier's) Product Designation	Multiple Listee's Product Designations
Across the Line Capacitors	1995-03-13	MKP	MKP

MARKING: Same as that described in Follow-Up Service Procedure and/or Report except for Multiple Listee's name, ML Tradename, when applicable, and product designation.

UL INSPECTION CENTER DONGGUAN - 213

INDEX

Model	Report Date	Section
MKP	1995-03-13	1
MKT	2001-07-03	2

Recognized Component Marking Data Page (RCMDP)

(FILE IMMEDIATELY AFTER AUTHORIZATION PAGE)

RECOGNIZED COMPONENT MARKING

Products Recognized under UL's Component Recognition Service are identified by marking elements consisting of:

1. The Recognized Company's identification specified in this document.
2. A catalog, model or other applicable product designation specified in the descriptive sections of this document.
3. The UL Recognized Component Mark shown below is optional unless required elsewhere in the Procedure.

Only those components, which actually bear the Marking, should be considered as being covered under the Recognition Program. The UL Listing or Classification Mark is not authorized for use on or in connection with Recognized Components.

Recognized Component Mark



Minimum size of the Recognized Component Mark is not specified as long as it is legible. Minimum height of the registered symbol ® shall be 3/64 inch but may be omitted if it is out of proportion to the Recognized Component Mark or not legible to the naked eye.

The manufacturer may reproduce the Mark electronically. Any decision regarding the acceptability of the manufacturer's Mark reproduction will be made at the Reviewing Office.

Recognized Component Marking Data Page (RCMDP)

(FILE IMMEDIATELY AFTER AUTHORIZATION PAGE)

RECOGNIZED COMPONENT MARKING

Products Recognized under UL's Component Recognition Service are identified by marking elements consisting of:

1. The Recognized Company's identification specified in this document.
2. A catalog, model or other applicable product designation specified in the descriptive sections of this document.
3. The UL Recognized Component Mark shown below:
 - (A) Recognized only to Canadian safety requirements, or;
 - (B) Recognized to both U.S. and Canadian safety requirements.

Only those components, which actually bear the Marking, should be considered as being covered under the Recognition Program. The UL Listing or Classification Mark is not authorized for use on or in connection with Recognized Components.

Recognized Component Mark

(A)



(B)



Minimum size of the Recognized Component Mark is not specified as long as it is legible. Minimum height of the registered symbol ® shall be 3/64 inch but may be omitted if it is out of proportion to the Recognized Component Mark or not legible to the naked eye.

The manufacturer may reproduce the Mark electronically. Any decision regarding the acceptability of the manufacturer's Mark reproduction will be made at the Reviewing Office.

SPECIAL INSTRUCTIONS

UL REPRESENTATIVE:

GENERAL

SAMPLES FOR NORTHBROOK OFFICE:

Once (twice or four times or other frequency, as appropriate) each year, select the following samples or stock from production (produced within the last year), mark with the appropriate identification including group number, and forward to Conformity Assessment Services at Northbrook. Where more than one type designation is identified for a group, any one type may be selected.

The rating of the samples should be as indicated. If samples with the indicated rating are not available, samples with a rating as close as possible to the indicated rating should be provided.

	Group Suffix Number										
	1	2	3	4	5	6	7	8	9	10	11
Number of Samples:	25	25	65	90	25	25	65	90	25	25	25

Type Designation	Group Suffix	Rating
MKP	A-4HD	1.0 uF
MKT	B-3B	0.47 uF
MKT	B-4B	0.68 uF

CONFORMITY ASSESSMENT SERVICES:

TESTS CONDUCTED BY UL

Conduct applicable tests outlined in UL 1414 as indicated below on samples of each group received from the Field Representative. Samples of each group not used for the initial test program should be held in reserve for possible additional tests as noted in the Standard.

Group Suffix Number	Test Required
1	Line-bypass Discharge
2	Line-bypass Life
3 and 4	Across-The-Line Discharge (As Received)
4	Across-The-Line Life
5	Double Protection Antenna-Coupling Discharge
6	Double Protection Antenna-Coupling Life
7 and 8	Double Protection Across-The-Line Discharge (As Received)
8	Double Protection Across-The-Line Life
9	X1 Impulse/Endurance
10	Y1 Impulse/Endurance
11	Y2 Impulse/Endurance

SUFFIX LETTER EXPLANATIONS

Groups may be provided with one or more suffix letters. These letters reflect test voltages and/or additional tests as noted below:

Suffix Letter	
A	Supply source - 125 V ac: Life test potential - 220/440 Dielectric Potential 1000 V
B	Supply source - 250 V ac: Life test potential - 440/880 Dielectric potential 1000 V
C	Leads-To-Enclosure Dielectric Potential - 1000 V (Double Protection Option Only)
D	Flammability Test
E	Supply source - 125 V ac; Life test potential 125/125
F	Supply source - 250 V ac; Life test potential 250/250
G	Supply source - 125 V ac: Life test potential - 220/440 Dielectric potential 1500 V
H	Supply source - 250 V ac: Life test potential - 440/880 Dielectric potential 1500 V
I	Impulse test potential - 4 kV dc: Endurance test potential 313/1000 V rms (X1)
J	Impulse test potential - 8 kV dc: Endurance test potential 213/1000 V rms (Y1 at 125V)
K	Impulse test potential - 8 kV dc: Endurance test potential 425/1000 V rms (Y1 at 250V)
L	Impulse test potential - 5 kV dc: Endurance test potential 425/1000 V rms (Y2)

PROCEDURE IN CASE OF FAILURE

Individual groups should be considered acceptable or unacceptable in accordance with the Standard.

Acceptability of Group

If a group containing a suffix number 1 or 2 is found unacceptable, all antenna-coupling and line-bypass capacitors having that same first group letter are considered unacceptable.

If a group containing a suffix number 3 or 4 is found unacceptable, all across-the-line and antenna-coupling capacitors having the same first group letter are considered unacceptable.

If a group containing a suffix number 5, 6, 7 or 8 is found unacceptable, all double-protection capacitors having the same first group letter are considered unacceptable.

If a group containing a suffix letter D is found unacceptable, all capacitors having the same first group letter are considered unacceptable.

If a group containing a suffix number 9 is found unacceptable, all Class X1 capacitors having that same first group letter are considered unacceptable.

If a group containing a suffix number 10 is found unacceptable, all Class Y1 capacitors having that same first group letter are considered unacceptable.

If a group containing a suffix number 11 is found unacceptable, all Class Y2 capacitors having that same first group letter are considered unacceptable.

INSTRUCTIONS FOR TESTS AND/OR INSPECTION AT THE FACTORY

FIELD REPRESENTATIVE:

The manufacturer is required to have the test equipment specified below. During the regular visits to the factory, determine that the equipment is functioning properly, and that the manufacturer is 1) performing the dielectric withstand test on 100 percent of production and 2) measuring the capacitance on 100 percent of production for double-protection capacitors.

Review the manufacturer's records to assure that the tests are being conducted and appropriate action is taken with respect to failures and rejections.

RESPONSIBILITY OF THE MANUFACTURER:

General - One hundred percent of production of each capacitor covered by this Procedure shall be subjected to the dielectric withstand test. Also, the capacitance of one hundred percent of production of each double-protection capacitor covered by this Procedure shall be measured. It shall also be the responsibility of the manufacturer to determine that the test equipment is functioning properly, and to have the test equipment calibrated at regular intervals, not less than once annually.

MANUFACTURER'S TEST EQUIPMENT:

As a minimum, the dielectric test equipment used by the manufacturer shall incorporate the following features.

1. A 500 VA minimum rated output transformer, or, the transformer may be constructed with a suitable voltmeter located across the output terminals to directly measure the applied output potential.
2. A visible indication (to the operator) of the application of the test voltage (voltmeter, lamp, etc.).
3. A visible or audible indication (readily visible to the operator during the application of the test potential) to indicate a dielectric breakdown.
4. A manual external reset switch which must be operated following a breakdown, or, provision to automatically reject the failed unit.

TEST TO BE CONDUCTED:

PRODUCTION-LINE DIELECTRIC VOLTAGE WITHSTAND TEST

GENERAL:

Except as may be noted under Exceptions included in Appendix B, the manufacturer shall subject 100 percent of production of all products to a routine Production-Line Dielectric Voltage-Withstand Test in accordance with the following.

All Components Except Double-Protection Capacitors

AC Potential - Method - Apply a 40-70 Hz, essentially sinusoidal potential across each pair of capacitor leads. The combination of potential and duration shall be not greater than Curve A and not less than Curve B. See ILL. 1 for curves.

DC Potential - Method for Wound Capacitors - In lieu of either AC potential method, the manufacturer may apply a 2000 V dc potential for 1 s.

DC Potential - Method for Ceramic Capacitors - In lieu of either AC potential method, the manufacturer may apply a DC potential provided that it is not greater than twice the value of Curve A and not less than twice the value of Curve B. See ILL. 1 for curves.

All Double-Protection Capacitors

Apply a 2500 V, 40-70 Hz, essentially sinusoidal potential for 1 s, across each pair of capacitor leads.

Basis for Acceptability

Each capacitor shall withstand the applied potential without breakdown for the required time duration.

CAPACITY MEASUREMENT FOR DOUBLE-PROTECTION CAPACITORS

Following the above dielectric withstand test, the capacitance of each double-protection capacitor is to be measured.

Basis for Acceptability

The measured capacitance of each capacitor shall be within the capacitance range, allowing for tolerance, marked on the capacitor.

MANUFACTURER'S RECORDS:

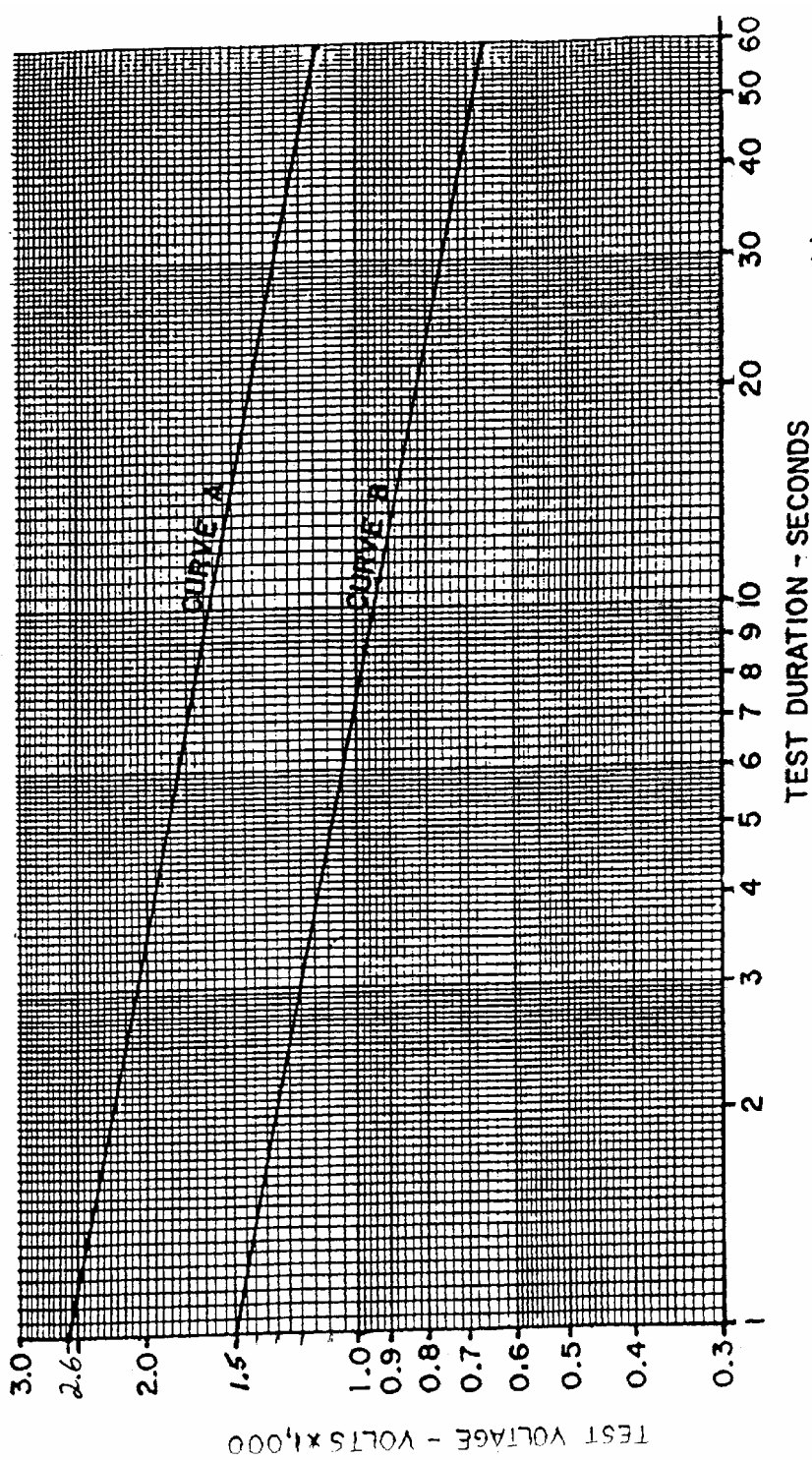
The manufacturer shall keep records of the test performance and corrective action taken on rejection. These records shall be readily available to the Field Representative.

EXCEPTIONS:

The following capacitors have been tested at UL and the following test potentials may be applied for the duration indicated during the Production-Line Dielectric Voltage Withstand Test.

Type Designation	*Maximum Test Potential and Maximum Duration+

+ - Duration may consist of several applications of the test potential. The last piece of equipment providing the dielectric test potential must be able to indicate dielectric breakdown.



File E149075
Project 92NK16155B

Issued: March 13, 1995
Revised: January 29, 2009

REPORT

on

COMPONENT - ACROSS-THE-LINE CAPACITORS,
ANTENNA-COUPPLING AND LINE-BY-PASS COMPONENTS (FOWX2)

*

Hua Jung Components Co., Ltd.
Kaohsiung Hsien, Taiwan

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DESCRIPTION

PRODUCT COVERED:

- * **USR-, CNR-** Component **-Across-the-Line capacitors, Series** Type MKP.

ABBREVIATIONS:

USR - United States Standard - Recognized, indicates investigation to UL 1414, Fifth Edition, with revisions up to and including July 13, 1998.

CNR - Canadian National Standard - Recognized, indicates investigation to CSA C22.2 No. 1-04, Eleventh Edition, with revisions up to and including August, 2004.

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

*

The capacitors covered by this Report are intended for connection directly across a supply circuit.

They are intended solely as factory-installed components where the acceptability is to be determined by Underwriters Laboratories Inc.

Conditions of Acceptability -

1. **These components have been investigated and are intended for use in radio and television receiving appliances and similar equipment, where the acceptability of the combination is determined by Underwriters Laboratories, Inc.**
2. **The components' enclosure has been subjected to a 1 min, 60 Hz, 1500 V dielectric voltage withstand test and is a suitable insulator in radio and television receiving appliances and similar equipment without further investigation.**
3. **These components are intended for use in 60 Hz circuits up to a nominal 250 V.**

CONSTRUCTION DETAILS:

The product shall be constructed in accordance with the following description:

Model Designation	Capacitance (uF)	Minimum Body Height (mm)	Minimum Body Width (mm)	Minimum Body Thickness (mm)	Minimum Lead-to-Lead Spacing (mm)	Minimum Edge Margin (mm)
MKP	0.0047	8	10	4	7.5	1.5
	0.0047	8	13	4	10.0	1.5
	0.0047	10	13	5	10.0	1.5
	0.0047	11	13	5	10.0	1.5
	0.0056	8	10	4	7.5	1.5
	0.0056	9	13	4	10.0	1.5
	0.0056	10	13	5	10.0	1.5
	0.0056	11	13	5	10.0	1.5
	0.0068	8	10	4	7.5	1.5
	0.0068	9	13	4	10.0	1.5
	0.0068	10	13	5	10.0	1.5
	0.0068	11	13	5	10.0	1.5
	0.0082	8	10	4	7.5	1.5
	0.0082	9	13	4	10.0	1.5
	0.0082	10	13	5	10.0	1.5
	0.0082	11	13	5	10.0	1.5
	0.0100	8	10	4	7.5	1.5
	0.0100	9	13	4	10.0	1.5
	0.0100	10	13	5	10.0	1.5
	0.0100	11	13	5	10.0	1.5
	0.0100	8	18	4	15.0	1.5
	0.0100	11	18	5	15.0	1.5
	0.0120	8	10	4	7.5	1.5
	0.0120	10	13	5	10.0	1.5
	0.0120	11	13	5	10.0	1.5
	0.0150	8	10	4	7.5	1.5
	0.0150	9	10	4	7.5	1.5
	0.0150	9	13	4	10.0	1.5
	0.0150	11	13	5	10.0	1.5
	0.0150	8	18	4	15.0	1.5
	0.0150	11	18	5	15.0	1.5
	0.0180	9	10	4	7.5	1.5
	0.0180	11	13	5	10.0	1.5
0.0220	8	10	4	7.5	1.5	
0.0220	9	10	4	7.5	1.5	
0.0220	9	13	4	10.0	1.5	

CONSTRUCTION DETAILS (Cont.):

Model Designation	Capacitance (uF)	Minimum Body Height (mm)	Minimum Body Width (mm)	Minimum Body Thickness (mm)	Minimum Lead-to-Lead Spacing (mm)	Minimum Edge Margin (mm)
MKP	0.0220	11	13	5	10.0	1.5
	0.0220	9	18	4	15.0	1.5
	0.0220	11	18	5	15.0	1.5
	0.0270	10	10	5	7.5	1.5
	0.0270	12	13	6	10.0	1.5
	0.0270	11	13	5	10.0	1.5
	0.0330	9	10	5	7.5	1.5
	0.0330	10	10	5	7.5	1.5
	0.0330	9	13	4	10.0	1.5
	0.0330	11	13	5	10.0	1.5
	0.0330	11	13	5.5	10.0	1.5
	0.0330	12	13	6	10.0	1.5
	0.0330	9	18	4	15.0	1.5
	0.0330	11	18	5	15.0	1.5
	0.0390	11	10	5	7.5	1.5
	0.0390	9	13	4	10	1.5
	0.0390	11	18	5	15	1.5
	0.0470	10	10	5	7.5	1.5
	0.0470	12	10	6	7.5	1.5
	0.0470	9	13	4	10.0	1.5
	0.0470	10	13	5	10.0	1.5
	0.0470	9	18	4	15.0	1.5
	0.0470	11	18	5	15.0	1.5
	0.0560	10	11	5	7.5	1.5
	0.0560	12	10	6	7.5	1.5
	0.0560	9.5	13	4.5	10.0	1.5
	0.0560	10	13	5	10.0	1.5
	0.0560	9	18	4	15.0	1.5
	0.0560	11	18	5	15.0	1.5
	0.0560	12	18	6	15.0	1.5
	0.0680	12	10	6	7.5	1.5
	0.0680	10	13	5	10.0	1.5
	0.0680	11	13	5	10.0	1.5
0.0680	10	18	4	15.0	1.5	
0.0680	11	18	5	15.0	1.5	
0.0680	12	18	6	15.0	1.5	
0.0820	10	12	6	7.5	1.5	
0.0820	11	13	5	10.0	1.5	
0.0820	12	13	6	10.0	1.5	

File E149075

Vol. 3

Sec. 1
and Report

Page 2B

Issued: 1995-03-13
Revised: 2009-01-29

THIS PAGE REPLACES PAGES 2B AND 2C

CONSTRUCTION DETAILS (Cont.):

Model Designation	Capacitance (uF)	Minimum Body Height (mm)	Minimum Body Width (mm)	Minimum Body Thickness (mm)	Minimum Lead-to-Lead Spacing (mm)	Minimum Edge Margin (mm)
MKP	0.0820	10	18	5	15.0	1.5
	0.0820	11	18	5	15.0	1.5
	0.0820	12.5	18.0	6.5	15.0	1.5
	0.1000	10	13	7	7.5	1.5
	0.1000	11	13	5	10.0	1.5
	0.1000	12	13	6	10.0	1.5
	0.1000	10	18	5	15.0	1.5
	0.1000	11	18	5	15.0	1.5
	0.1000	12.5	18.0	6.5	15.0	1.5
	0.1200	12	13	6	10.0	1.5
	0.1200	13	13	7	10.0	1.5
	0.1200	10	18	5	15.0	1.5
	0.1200	12	18	6	15.0	1.5
	0.1500	12	13	7	10.0	1.5
	0.1500	14	13	8	10.0	1.5
	0.1500	11.5	15	6	12.5	1.5
	0.1500	10.5	18	5	15.0	1.5
	0.1500	12	18	6	15.0	1.5
	0.1500	13.5	18	7.5	15.0	1.5
	0.1500	14	18	7.5	15.0	1.5
	0.1500	14.5	18	8.5	15.0	1.5
	0.1500	11	26	5	22.5	1.5
	0.1500	14.5	26	6	22.5	1.5
	0.1500	14.5	26.5	6	22.5	1.5
	0.1500	14.5	26.5	7	22.5	1.5
	0.1500	16.5	26.5	7	22.5	1.5
	0.1800	12	18	6	15.0	1.5
	0.1800	14.5	26	6	22.5	1.5
	0.1800	14.5	26.5	7	22.5	1.5
	0.1800	16	26.5	6	22.5	1.5
	0.1800	16.5	26.5	7	22.5	1.5
	0.2200	14	13	8	10.0	1.5
	0.2200	12.5	15	7	12.5	1.5
	0.2200	11.5	18	6	15.0	1.5
	0.2200	13	8	7	15.0	1.5
	0.2200	14	18	8	15.0	1.5
0.2200	14.5	18	8.5	15.0	1.5	
0.2200	16.5	18	10	15.0	1.5	
0.2200	17.5	18	8.5	15.0	1.5	
0.2200	11	26	5	22.5	1.5	


CONSTRUCTION DETAILS (Cont.):

Model Designation	Capacitance (uF)	Minimum Body Height (mm)	Minimum Body Width (mm)	Minimum Body Thickness (mm)	Minimum Lead-to-Lead Spacing (mm)	Minimum Edge Margin (mm)
MKP	0.2200	14.5	26	6	22.5	1.5
	0.2200	15	26.5	6	22.5	1.5
	0.2200	16	26.5	6	22.5	1.5
	0.2200	16.5	26.5	7	22.5	1.5
	0.2700	14.5	18	7.5	15.0	2.0
	0.2700	15	18	9	15.0	2.0
	0.2700	16.5	26.5	7	22.5	2.0
	0.2700	17	26.5	8.5	22.5	2.0
	0.2700	18.5	26.5	7	22.5	2.0
	0.3300	14	15	8.5	12.5	1.5
	0.3300	13	18	7	15.0	1.5
	0.3300	13.5	18	10	15.0	2.0
	0.3300	15.5	18	8	15.0	2.0
	0.3300	16	18	10	15.0	2.0
	0.3300	16.5	18	10	15.0	2.0
	0.3300	18	18	10	15.0	2.0
	0.3300	12	26	6	22.5	1.5
	0.3300	16.5	26	7.5	22.5	2.0
	0.3300	17	26.5	8.5	22.5	2.0
	0.3300	18.5	26.5	7	22.5	2.0
	0.3300	19	26.5	10	22.5	2.0
	0.3900	15	15	9	12.5	1.5
	0.3900	13.5	18	7.5	15.0	1.5
	0.3900	17	18	8	15.0	2.0
	0.3900	12	26	6	22.5	1.5
	0.3900	16.5	26	7.5	22.5	2.0
	0.3900	18.5	26	8.5	22.5	2.0
	0.3900	19	18	11	22.5	2.0
	0.3900	19	26.5	10	22.5	2.0
	0.4700	16	15	10	12.5	1.5
	0.4700	14	18	8	15.0	1.5
	0.4700	16	18	10	15.0	2.5
	0.4700	18	18	9	15.0	2.5
	0.4700	19	18	11	15.0	2.5
	0.4700	21	18	12	15.0	2.5
	0.4700	14	26	6	22.5	1.5
	0.4700	16.5	26	7.5	22.5	2.5
	0.4700	19	26.5	10	22.5	2.5
	0.4700	13.5	31	6	27.5	1.5

CONSTRUCTION DETAILS

(Cont.):Model Designation	Capacitance (uF)	Minimum Body Height (mm)	Minimum Body Width (mm)	Minimum Body Thickness (mm)	Minimum Lead-to-Lead Spacing (mm)	Minimum Edge Margin (mm)
MKP	0.4700	18	31	9	27.5	2.5
	0.4700	18	32	9	27.5	2.5
	0.4700	20	32	11	27.5	2.5
	0.5600	17	15	11	12.5	1.5
	0.5600	15	18	9	15.0	1.5
	0.5600	19	18	10	15.0	2.5
	0.5600	21	18	10	15.0	2.5
	0.5600	16.5	26	7.5	22.5	2.5
	0.5600	19	26	10	22.5	2.5
	0.5600	14	26	7	22.5	1.5
	0.5600	20	31	10	27.5	2.5
	0.5600	20	32	10	27.5	2.5
	0.5600	20	31	11	27.5	2.5
	0.5600	14	31	6.5	27.5	1.5
	0.6800	16	18	10	15.0	1.5
	0.6800	18	18	12.5	15.0	2.5
	0.6800	17	26	8	22.5	2.5
	0.6800	15	26	7.5	22.5	1.5
	0.6800	18.5	26	10	22.5	2.5
	0.6800	19	26	10	22.5	2.5
	0.6800	20	26	11	22.5	2.5
	0.6800	20	31	10	27.5	2.5
	0.6800	15.5	31	6.5	27.5	1.5
	0.6800	20	32	10	27.5	2.5
	0.6800	22.5	32	13	27.5	2.5
	0.8200	17.5	18	10	15.0	1.5
	0.8200	18	26	9	22.5	2.5
	0.8200	20	26	11	22.5	2.5
	0.8200	16	26	8	22.5	1.5
	0.8200	16	31	7.5	27.5	1.5
	0.8200	20	31	11	27.5	2.5
	0.8200	20	32	11	27.5	2.5
	0.8200	22.5	32	13	27.5	2.5
	1.0000	18.5	18	11	15.0	1.5
	1.0000	19	26	10	22.5	2.5
	1.0000	17	26	9	22.5	1.5
	1.0000	17	31	8	27.5	1.5
	1.0000	20	31	11	27.5	2.5
	1.0000	20	32	11	27.5	2.5
	1.0000	22	26	12	27.5	2.5
1.0000	23	26	12	27.5	2.5	
1.0000	23.5	32	14	27.5	2.5	

FILM WOUND CAPACITOR TYPE MKP - FIG. 1 & 2

1. Marking - Company name or trademarks  or **H** or **H** or **HJC** or **H** and type designation (trademark as shown in ILL. 1), stamped on body. Voltage rating is 250V ac, and the marking of rating is optional, voltage rating and UL mark is segregated from other voltage and/or certification marks.
2. Alternate - Same as above, except Type 4115(a), manufactured by Chang Chun Plastics Co., Ltd. (E59481).

Alternate - Same as above, except Type 4815, manufactured by Chang Chun Plastics Co., Ltd. (E59481).

Alternate - Same as above, except Type 1403G3, manufactured by Nan Ya Plastics (Hui Zhou) Corp., Ltd. (E235269).

Alternate - Same as above, except Type D202G15, manufactured by Shinkong Synthetic Fibers Corp. (E107536).

Alternate - Same as above, except Type PBT-NPG15, manufactured by Guangzhou Kingfa Science & Technology Co., Ltd., (E171666).

Alternate - Same as above, except Type PBT-NPG00, manufactured by Guangzhou Kingfa Science & Technology Co., Ltd., (E171666).

Alternate -any R/C (QMFZ2), rated 94V-0, with a Recognized thickness of 1.6 mm or less.
3. Leads - Solder covered, copper plated steel wire having 0.8 mm diameter.

4. Filler - Epoxy, R/C (QMFZ2) Type 9001A/9001B, manufactured by Shaw Huow Enterprise Co., Ltd. (E105888).

Alternate - Same as above, except Type Eporite 5007A/B, manufactured by Epolab Chemical Industries, Inc. (E105126).

Alternate - Same as above, except Type 5339-1A/B, manufactured by Epolab Chemical Industries, Inc. (E105126).

Alternate - Same as above, except Type 3177B/H, manufactured by Taiwan First Li-Bond Co., Ltd. (E111633).

Alternate - Same as above, except Type Magnobond 3102 DU/319, manufactured by Magnolia Plastics Inc. (E83708).

Alternate - Same as above, except Type 5225 A/B, manufactured by Juhexing Chemical Guangzhou Co., Ltd. (E204979).

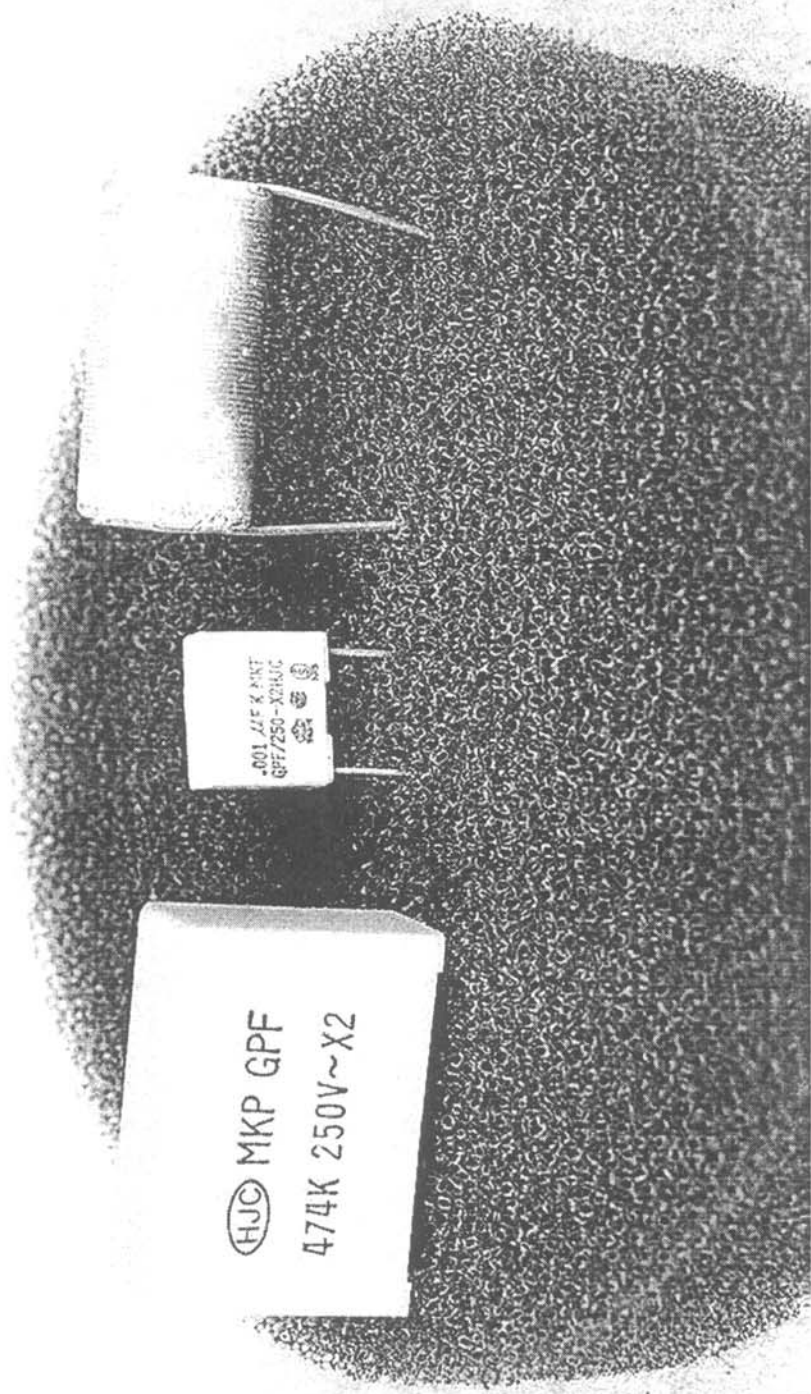
Alternate - Same as above, except Type DC-5480/DH-5480, manufactured by Dae Joo Electronic Materials Co., Ltd. (E102800).

Alternate - Same as above, except Type Eporite 5116A/5116B, manufactured by Dongguan Yonggu Insulation Material Ltd., Co., (E231906).

Alternate - Same as above, except Type DC-505/DH-505, manufactured by Dae Joo Electronic Materials Co., Ltd., (E102800).

Alternate - Same as above, except R/C (OCDT2) Type EC-200, manufactured by Eimou Enterprise Co. Ltd., (E192834).

Alternate - Epoxy, any R/C (QMFZ2), rated 94V-0, with a Recognized thickness of 1.6 mm or less.
5. Dielectric/Plates - (Not shown) - Two layers of metallized polypropylene film. Plates staggered (see above tables on pages 2-5 for edge margins). Film thicknesses employed, 5 - 12 um.



"HJC" 

DESCRIPTION

PRODUCT COVERED:

Across-the-line capacitors, Type MKT.

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE USE):

The capacitors covered by this Report are intended for connection directly across a supply circuit.

They are intended solely as factory-installed components where the acceptability is to be determined by Underwriters Laboratories Inc.

Conditions of Acceptability - (UL 1414)

1. These components have been investigated and are intended for use in radio and television receiving appliances and similar equipment, where the acceptability of the combination is determined by Underwriters Laboratories Inc.

2. The components' enclosure has been subjected to a 1 min, 60 Hz, 1000 V dielectric voltage withstand test and is a suitable insulator in radio and television receiving appliances and similar equipment without further investigation.

3. These components are intended for use in 60 Hz circuits up to a nominal 250 V.

Conditions of Acceptability - (UL 1283)

1. A suitable enclosure shall be provided for the filters.

2. The capacitors are intended for use in 50/60 Hz circuits with a maximum voltage of 250 V ac.

3. The temperature of the filter capacitors shall be measured in the end product.

4. The leads are to be factory wired only and the stability of the connections should be determined in accordance with the requirements of the overall equipment.

5. Spacings to the leads should be in accordance with the requirements of the end product.

6. The effect of this product on the connected equipment and the adequacy of the filtering has not been evaluated.

CONSTRUCTION DETAILS:

The product shall be constructed in accordance with the following description:

<u>Designation</u>	<u>Capacitance, uF</u>	<u>Dielectric Thickness, um</u>	<u>Minimum Finished Body Height, mm</u>	<u>Minimum Finished Body Width, mm</u>	<u>Minimum Finished Body Thickness, mm</u>
	0.01	7	9	10	4
	0.012	7	9	10	4
	0.015	7	9	10	4
	0.018	7	9	10	4
	0.022	7	11	10	5
	0.027	7	11	10	5
	0.033	7	11	10	5
	0.039	7	11	13	5
	0.047	7	12	13	6
	0.056	7	12	13	6
	0.068	7	13	13	7
	0.082	7	13	13	7
	0.1	7	14	13	8
MKT	0.1	7.0	12.0	18.0	6.0
	0.12	7.0	12.0	18.0	6.0
	0.15	7.0	13.5	18.0	7.5
	0.18	7.0	13.5	18.0	7.5
	0.22	7.0	15.0	18.0	8.5
	0.27	7.0	16.5	18.0	10.0
	0.33	7.0	16.5	18.0	10.0
	0.39	7.0	16.5	26.0	7.0
	0.47	7.0	17.0	26.0	8.5
	0.56	7.0	19.0	26.0	10.0
	0.68	7.0	19.0	26.0	10.0
	0.82	8.0	20.0	26.0	11.5
	1.00	8.0	22.0	26.0	12.5

FILM WOUND CAPACITOR TYPE MKT - FIG. 1 (NO1-11775)

1. Marking - Recognized Company's name or trademark, and type designation stamped on body. Voltage rating is 250 V ac. See ILL. 1.

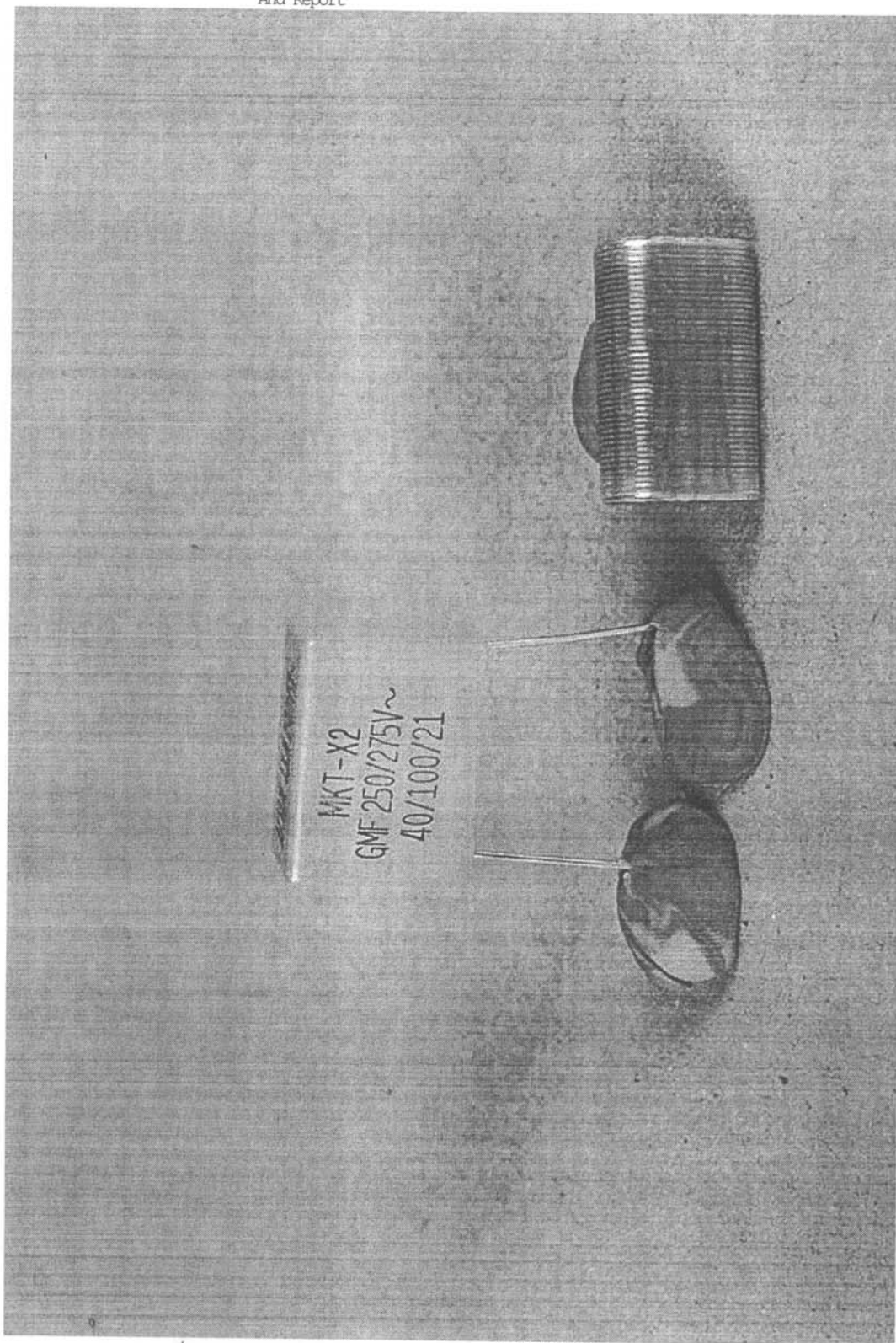
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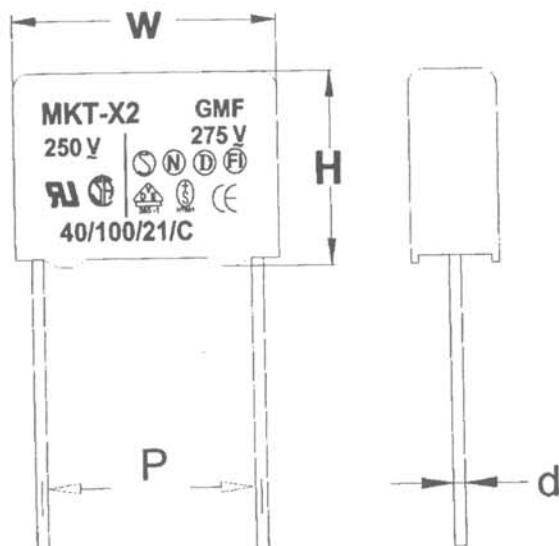
2. Case - PBTP, Recognized (QMFZ2), GE Plastics Japan Ltd., Type 310-SEO, minimum thickness 0.6 mm.
3. Filler - (Not shown) - Epoxy, Recognized (QMFZ2), Magnolia Plastics Inc., Type 3102, minimum thickness 0.3 mm.
4. Dielectric/Plates - Metallized polypropylene film. See table on Page 2 for film thickness. Plates staggered.

Capacitor Rating, uFEdge Margin, mm

0.1 - 0.68

2.0





TEST RECORD NO. 7

SAMPLES:

The manufacturer submitted representative samples of the Type MKP, Across-the-Line Capacitor, rated 0.47 uF & 0.68 uF, 250 V ac, 60 Hz, 85°C. No tests were considered necessary for the addition of alternate dimensions for 0.47 uF & 0.68 uF capacitor, and addition of Type 5225A/B alternate filler material manufactured by Juhexing Chemical Guangzhou Co Ltd, based on tests previously conducted.

GENERAL:

Test results relate only to the items tested.

The following tests were waived in accordance with UL 1414, Fifth Edition, the Standard for Across-the-Line, Antenna-Coupling and Line By-Pass Capacitors for Radio- and Television-Type Appliances, Revision Date, July 13, 1998:

The following tests were waived based on previous testing as outlined below:

Test Name:	UL 1414, Fifth Edition, Clause:	Report Date:	Test Covered in Test Record #:
Dielectric Voltage Withstand	10	1995-03-13	1, 2, 3, 4, & 5
Fire Hazard Discharge	13	1995-03-13	1, 2, & 4
Expulsion Hazard Discharge	13	1995-03-13	1, 2, & 4
Across-the-Line Life	14	1995-03-13	1, 2, & 4
Enclosure Flame (Type 5225A/B, Juhexing Chemical Guangzhou Co Ltd)	9	1995-03-13	N/A, acceptable based on Clause 6.1 & 6.2 of UL 1414, Fifth Edition

The results of the above tests are acceptable.

TEST RECORD SUMMARY:

The results of this investigation, including construction review and testing, indicate that the products evaluated comply with the applicable requirements in the Standard for Across the Line, Antenna-Coupling and Line-By-Pass Capacitors for Radio- and Television-Type Appliances, UL 1414, Fifth Edition, Revision Date, July 13, 1998, and therefore, such products are judged eligible to bear UL's Mark as described on the Conclusion Page of this Report.

Test Record by:

Reviewed by:

Jay Kadiwala

Vladimir Ivetic