

GIANT LAB. CO.,LTD  
7F-2, No. 600, Sec. 2  
Chung Hu Rd.  
TAIPEI 108  
TAIWAN

**Handled by**  
Susanne Lundgren/MMB  
**Direct telephone**  
+46 8 750 02 92  
**Reference**  
309083  
**E-mail**  
susanne.lundgren@intertek.com  
**Your reference**  
Grace Kao

9 February 2004

**CB-Application(s) SE-33139M1**

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

Yours sincerely

Intertek Semko AB  
Product Certification



**Enclosure CB certificate(s)**



Intertek Semko AB

HUA JUNG COMPONENTS CO., LTD.  
No 37, Feng Ping 1st Road  
Ta Liao, Kaohsiung Hsien  
TAIWAN

**Handled by**  
Susanne Lundgren/MMB  
**Direct telephone**  
+46 8 750 02 92  
**Reference**  
309083  
**E-mail**  
susanne.lundgren@intertek.com  
**Your reference**  
Grace Kao

9 February 2004

**CB-Application(s) SE-33139M1**

We have the pleasure to enclose a (the) new CB certificate(s) as well as Test Report, issued due to increased rated temperature from 100°C to 110°C.

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)**

Intertek Semko AB

IEC SYSTEM FOR CONFORMITY TESTING  
AND CERTIFICATION OF ELECTRICAL  
EQUIPMENT (IECEE)  
CB SCHEME

SYSTÈME CEI D'ESSAIS DE CONFIRMITÉ  
ET DE CERTIFICATION DES EQUIPMENTS  
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 COMPONENTS CO., LTD.  
No 37, Feng Ping 1st Road, Ta Liao, Kaohsiung Hsien, TAIWAN

Name and address of the manufacturer  
Nom et adresse du fabricant

Same as above

Name and address of the factory  
Nom et adresse de l'usine

Hua Jung International Corporation  
West Shijie 3 Village Ind. Area, Shincheng Area, Shijie Town,  
Dongguan, Guangdong, CHINA

Rating and principal characteristics  
Valeurs nominales et caractéristiques principales

0.0047-2.2  $\mu$ F Series E12. Class X2. AC 275V,  
40/100/56/B or 40/110/56/B

Trade mark (if any)  
Marque de fabrique (si elle existe)

HJC

Model/type Ref.  
Ref. de type

MKP

Additional information (if necessary)  
Information complémentaire (si nécessaire)

This certificate replaces CB certificate SE-33139, dated 28 May 2003.  
A new certificate is issued due to increased rated temperature from  
100°C to 110°C.

IEC 60384-14:1993 and A1:1995

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

203726-2 and 309083-2

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 une partie de ce certificat

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

Stockholm

9 February 2004

SUL/MMB

DAM

Intertek ETL SEMKO

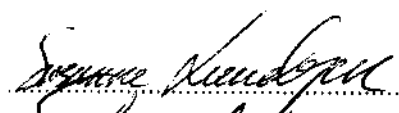
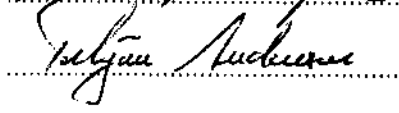


Postal address  
Intertek Semko AB  
P.O. Box 1103  
SE-164 22 KISTA

Visiting address  
Torshamnsgatan 43  
KISTA-STOCKHOLM

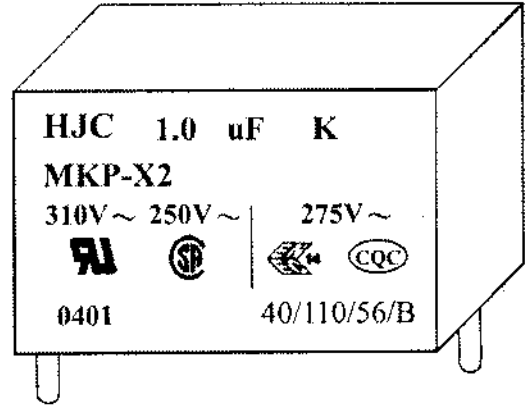
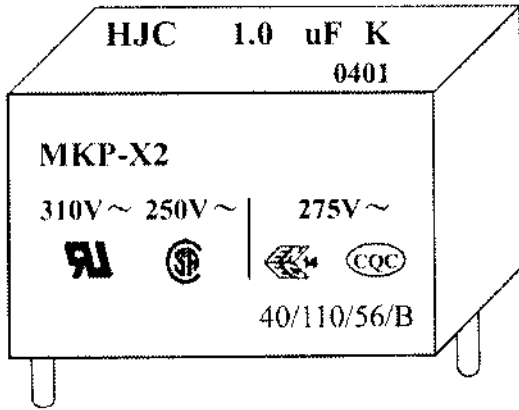
Telephone  
Int +46 8 750 00 00

Telefax  
Int +46 8 750 60 30

<p><b>TEST REPORT</b>  <b>IEC 60384-14</b>  <b>Fixed capacitors for use in electronic equipment</b>  <b>Part 14: Sectional specification</b>  <b>Fixed capacitors for electromagnetic interference suppression and connection to the supply mains</b></p>	
Report reference No .....	309083-2
Tested by (printed name and signature) .....	Susanne Lundgren 
Approved by (printed name and signature) .....	Torbjörn Andersson 
Date of issue .....	2004-02-06
Testing Laboratory Name .....	Intertek Semko AB
Address .....	Box 1103, SE-164 22 Kista, SWEDEN
Testing location .....	CBTL <input type="checkbox"/> SMT <input type="checkbox"/> TMP <input type="checkbox"/>
Address .....	Same as above
Applicant's Name .....	HUA JUNG COMPONENTS CO., LTD.
Address .....	No 37, Feng Ping 1 <sup>st</sup> Road, Tao Liao, Kaohsiung Hsien, TAIWAN
<b>Test specification</b>	
Standard .....	IEC 60384-14:1993 (Second Edition) + A1:1995
Test procedure .....	CB-scheme
Procedure deviation.....	Increased rated temperature to 110°C. Only endurance test
Non-standard test method .....	N.A.
Test Report Form No.....	IEC60384_14C
TRF originator .....	SGS Fimko Ltd
Master TRF .....	dated 2002-03
Amendment to Test Report.....	303726-2
Modification of the appliance.....	Increased rated temperature from 100°C to 110°C.
Clauses concerned.....	1.6, 4.2.2, 4.2.1, 4.2.5, 4.13, 4.14
<p><b>Copyright © 2002 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.</b></p> <p>This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.</p>	
Test item description .....	Capacitor for radio interference suppression
Trademark .....	HJC
Manufacturer .....	Hua Jung International Corp. CHINA
Model and/or type reference .....	MKP
Rating(s) .....	0,0047-2,2uF X2. AC 275V. 40/110/56/B.



Copy of marking plate and summary of test results (information/comments):



Summary of testing:



TRF No.: IEC60384\_14C

Intertek Semko AB

TRF originator: SGS Fimko

Torshamnsgatan 43, Box 1103, SE-164 22 Kista, Sweden  
Telephone +46 8 750 00 00, Fax +46 8 750 60 30, www.sweden.intertek-etlsemko.com  
Registered in Sweden: No SE556024059901, Registered office: As address

<p><b>Test item particulars</b></p> <p>.....</p> <p>.....</p>
<p><b>Test case verdicts</b></p> <p>Test case does not apply to the test object : N/A</p> <p>Test item does meet the requirement .....: P(ass)</p> <p>Test item does not meet the requirement ...: F(ail)</p>
<p><b>Testing</b></p> <p>Date of receipt of test item .....: 2003-08-12</p> <p>Date(s) of performance of test .....: 2004-01-12</p>
<p><b>General remarks</b></p> <p><b>"This report is not valid as a CB Test Report unless appended by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IEC60027".</b></p> <p>The test result presented in this report relate only to the object(s) tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.</p> <p>"(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report a comma (point) is used as the decimal separator.</p>

<p><b>General product information:</b></p> <p><b>Dielectric Material.</b> Metallized polypropylene film by Toray ind. Inc., Sung Moon Electronics and Steiner GmbH</p> <p><b>Epoxy material.</b> Type 5073A/B by Epolab Chemical Industries Inc. Type Eporites 5339-1A/B by Epolab Chemical Industries Inc. Type Eporites 5007A/B by Epolab Chemical Industries Inc. Type 9001A/B by Shaw Huow Enterprise Co., Ltd Type 3102 by Magnolia Plastics Inc. Type 3177 B/H by Taiwan Li-Bond Resin Co., Ltd Type EC-200 by Eimou Enterprise Co., Ltd</p> <p><b>Case material.</b> Type 310-SEO by GE Plastics Japan Ltd. Type PBT-4115 by Chang Chun Plastics Co., Ltd Type 1403G3 by Nan Ya Plastics Corp. Type D202G15 by Shinkong Synthetic Fibers Corp.</p>
---



	Rating( $\mu F$ )	Width	Height	Depth	Pitch		備註
1	0.0047	10	8	4	7.5		
2	0.0056	10	8	4	7.5		
3	0.0068	10	8	4	7.5		
4	0.0082	10	8	4	7.5		
5	0.01	10	8	4	7.5		
6	0.012	10	8	4	7.5		
7	0.015	10	9	4	7.5		
8	0.018	10	9	4	7.5		
9	0.022	10	9	4	7.5		
10	0.027	10	10	5	7.5		
11	0.033	10	10	5	7.5		
12	0.039	10	11	5	7.5		
13	0.047	10	12	6	7.5		
14	0.056	10	12	6	7.5		
15	0.0047	13	10	5	10		
16	0.0056	13	10	5	10		
17	0.0068	13	10	5	10		
18	0.0082	13	10	5	10		
19	0.01	13	10	5	10		
20	0.012	13	10	5	10		
21	0.015	13	11	5	10		
22	0.018	13	11	5	10		
23	0.022	13	11	5	10		
24	0.027	13	11	5	10		
25	0.033	13	11	5	10		
26	0.039	13	9	4	10		
27	0.047	13	10	5	10		
28	0.056	13	10	5	10		
29	0.068	13	11	5	10		
30	0.082	13	12	6	10		
31	0.1	13	12	6	10		
32	0.12	13	13	7	10		
33	0.15	13	14	8	10		
34	0.01	18	11	5	15		
35	0.015	18	11	5	15		
36	0.022	18	11	5	15		



	Rating( $\mu$ F)	Width	Height	Depth	Pitch		備註
37	0.033	18	11	5	15		
38	0.039	18	11	5	15		
39	0.047	18	11	5	15		
40	0.056	18	11	5	15		
41	0.068	18	11	5	15		
42	0.082	18	11	5	15		
43	0.1	18	11	5	15		
44	0.12	18	12	6	15		
45	0.15	18	12	6	15		
46	0.18	18	12	6	15		
47	0.22	18	13	7	15		
48	0.27	18	14.5	7.5	15		
49	0.33	18	15.5	8	15		
50	0.39	18	17	8	15		
51	0.47	18	18	9	15		
52	0.56	18	19	10	15		
53	0.15	26	14.5	6	22.5		
54	0.18	26	14.5	6	22.5		
55	0.22	26	14.5	6	22.5		
56	0.33	26	16.5	7.5	22.5		
57	0.39	26	16.5	7.5	22.5		
58	0.47	26	16.5	7.5	22.5		
59	0.56	26	16.5	7.5	22.5		
60	0.68	26	17	8	22.5		
61	0.82	26	18	9	22.5		
62	1.0	26	19	10	22.5		
63	1.2	26	20	11.5	22.5		
64	1.5	26	22	12	22.5		
65	1.8	26	24	14	22.5		
66	2.2	26	25	15	22.5		
67	0.47	31	18	9	27.5		
68	0.56	31	20	10	27.5		
69	0.68	31	20	10	27.5		
70	0.82	31	20	11	27.5		
71	1.0	31	20	11	27.5		
72	1.5	31	23.5	14	27.5		
73	2.2	31	26	18	27.5		

74 0.33 18 13.5 10 15



IEC 60384-14			
Clause	Requirement – Test	Result – Remark	Verdict
	GENERAL		
1.6	Marking		
	a) manufacturer's name or trademark.....:	HJC	P
	b) type .....	MKP	P
	c) capacitor class and subclass .....	X2	P
	d) recognized approval mark .....		P
	e) rated capacitance(s) / rated resistance(s) ....:	2.2uF	P
	f) rated voltage .....	275V-	P
	g) method of connection .....		N
	h) rated current .....		N
	i) tolerance .....	J	P
	j) climatic category and passive flammability category .....	40/110/56/B	P
	k) rated temperature .....		N
	l) year and month / week of manufacture .....	0401	P
	m) reference .....		N
1.6.1	Clear identification		P
1.6.2	Package markings		N
1.6.3	Additional marking		P
	Approval marks .....		P

QUALIFICATION APPROVAL TEST			
3.4.3.2	IEC 60384-14 Table II	Safety tests only	P

TEST FOR GROUP 0			
4.1	Dimensions (mm) .....		P
	Visual inspection		P
4.2.1 + 4.2.5	Voltage proof and insulation resistance at 100 V:		P
	- test temperature (°C) .....	23	—
	- class .....	X2	—



No.	X-capacitors				Y-capacitors			
	Test A		Test B or C		Test A		Test B or C	
	U (V d.c.)	R (MΩ) or RC (s)	U (V a.c.)	R (MΩ)	U (V d.c.)	R (MΩ)	U (V a.c.)	R (MΩ)
01	N	N	N	N	N	N	N	N
02	N	N	N	N	N	N	N	N
03	N	N	N	N	N	N	N	N
04	N	N	N	N	N	N	N	N
05	N	N	N	N	N	N	N	N
06	N	N	N	N	N	N	N	N
07	N	N	N	N	N	N	N	N
08	N	N	N	N	N	N	N	N
09	N	N	N	N	N	N	N	N
10	N	N	N	N	N	N	N	N
11	N	N	N	N	N	N	N	N
12	N	N	N	N	N	N	N	N
13	N	N	N	N	N	N	N	N
14	N	N	N	N	N	N	N	N
15	N	N	N	N	N	N	N	N
16	N	N	N	N	N	N	N	N
17	1182	> 20000	2050	> 20000	N	N	N	N
18	1182	> 20000	2050	> 20000	N	N	N	N
19	1182	> 20000	2050	> 20000	N	N	N	N
20	1182	> 20000	2050	> 20000	N	N	N	N
21	1182	> 20000	2050	> 20000	N	N	N	N
22	1182	> 20000	2050	> 20000	N	N	N	N
23	1182	> 20000	2050	> 20000	N	N	N	N
24	1182	> 20000	2050	> 20000	N	N	N	N
25	1182	> 20000	2050	> 20000	N	N	N	N
26	1182	> 20000	2050	> 20000	N	N	N	N
27	1182	> 20000	2050	> 20000	N	N	N	N
28	1182	> 20000	2050	> 20000	N	N	N	N
29	N	N	N	N	N	N	N	N
30	N	N	N	N	N	N	N	N
31	N	N	N	N	N	N	N	N
32	N	N	N	N	N	N	N	N
33	N	N	N	N	N	N	N	N
34	N	N	N	N	N	N	N	N
35	N	N	N	N	N	N	N	N



TRF No.: IEC60384\_14C

Intertek Semko AB

TRF originator: SGS Fimko

No.	X-capacitors				Y-capacitors			
	Test A		Test B or C		Test A		Test B or C	
	U (V d.c.)	R (MΩ) or RC (s)	U (V a.c.)	R (MΩ)	U (V d.c.)	R (MΩ)	U (V a.c.)	R (MΩ)
36	N	N	N	N	N	N	N	N
37	N	N	N	N	N	N	N	N
38	N	N	N	N	N	N	N	N
39	N	N	N	N	N	N	N	N
40	N	N	N	N	N	N	N	N



TRF No.: IEC60384\_14C

Intertek Semko AB

TRF originator: SGS Fimko

Torshamnsgatan 43, Box 1103, SE-164 22 Kista, Sweden  
 Telephone +46 8 750 00 00, Fax +46 8 750 60 30, www.sweden.intertek-etlsemko.com  
 Registered in Sweden: No SE556024059901, Registered office: As address

IEC 60384-14			
Clause	Requirement – Test	Result – Remark	Verdict
	TEST FOR GROUP 3		
4.13.2	Pulse test for Class X-capacitors:		P
	- Rated capacitance, lowest value (F) .....	4,7 x 10 <sup>-9</sup>	—
	- Rated capacitance, highest value (F) .....	2,2 x 10 <sup>-6</sup>	—

No.	Capacitance	Pulse voltage (kV)	Applied pulses	Result
17	Lowest	2,5	3	P
18	Lowest	2,5	3	P
19	Lowest	2,5	3	P
20	Lowest	2,5	3	P
21	Lowest	2,5	3	P
22	Lowest	2,5	3	P
23	Highest	1,68	3	P
24	Highest	1,68	3	P
25	Highest	1,68	3	P
26	Highest	1,68	3	P
27	Highest	1,68	3	P
28	Highest	1,68	3	P

4.14.3	Endurance test for Class X-capacitors:		P
	- Test for 1000 h; test temperature (°C); beginning; end .....	110; 2003-11-24; 2004-01-12	P
	- Test voltage (V); 1,25 x rated voltage .....	344; 1,25 x 275	—

4.13.2	Pulse test for Class Y-capacitors:		N
	- Rated capacitance, lowest value (F) .....		—
	- Rated capacitance, highest value (F) .....		—
	- Test temperature (°C) .....		—



TRF No.: IEC60384\_14C

Intertek Semko AB

TRF originator: SGS Fimko

Torshamnsgatan 43, Box 1103, SE-164 22 Kista, Sweden

Telephone +46 8 750 00 00, Fax +46 8 750 60 30, www.sweden.intertek-etlsemko.com

Registered in Sweden: No SE556024059901, Registered office: As address

IEC 60384-14			
Clause	Requirement – Test	Result – Remark	Verdict

No.	Capacitance	Pulse voltage (kV)	Applied pulses	Result
29	Lowest			N
30	Lowest			N
31	Lowest			N
32	Lowest			N
33	Lowest			N
34	Lowest			N
35	Highest			N
36	Highest			N
37	Highest			N
38	Highest			N
39	Highest			N
40	Highest			N

4.14.4	Endurance test for Class Y-capacitors:		N
	- Test for 1000 h; test temperature (°C); beginning; end .....		
	- Test voltage (V); 1,7 x rated voltage .....		—

4.14.5	Endurance test for lead-through arrangements:		N
	- Test for 1000 h; test temperature (°C); beginning; end .....		—
	- Test current (A); 1,1 x rated current .....		—
	- Maximum temperature of case (°C) .....		N

4.14.7	Final inspection: visual examination		P
	Final measurements: capacitance and resistance:		P
	- Rated capacitance, lowest value: X-capacitors (F); Y-capacitors (F) .....	4,7 x 10 <sup>-9</sup>	—
	- Rated capacitance, highest value: X-capacitors (F); Y-capacitors (F) .....	2,2 x 10 <sup>-6</sup>	—
	- Test temperature (°C) .....	23	—



IEC 60384-14						
Clause	Requirement – Test				Result – Remark	Verdict
No.	Capacitance, X-capacitors		Capacitance, Y-capacitors		Resistance	
	initial (F)	final (F)	initial (F)	final (F)	initial (Ω)	final (Ω)
17	4,62 x 10 <sup>-9</sup>	4,34 x 10 <sup>-9</sup>	N	N	N	N
18	4,64 x 10 <sup>-9</sup>	4,34 x 10 <sup>-9</sup>	N	N	N	N
19	4,64 x 10 <sup>-9</sup>	4,37 x 10 <sup>-9</sup>	N	N	N	N
20	4,6 x 10 <sup>-9</sup>	4,42 x 10 <sup>-9</sup>	N	N	N	N
21	4,58 x 10 <sup>-9</sup>	4,48 x 10 <sup>-9</sup>	N	N	N	N
22	4,62 x 10 <sup>-9</sup>	4,48 x 10 <sup>-9</sup>	N	N	N	N
23	2,22 x 10 <sup>-6</sup>	2,19 x 10 <sup>-6</sup>	N	N	N	N
24	2,2 x 10 <sup>-6</sup>	2,16 x 10 <sup>-6</sup>	N	N	N	N
25	2,19 x 10 <sup>-6</sup>	2,14 x 10 <sup>-6</sup>	N	N	N	N
26	2,16 x 10 <sup>-6</sup>	2,13 x 10 <sup>-6</sup>	N	N	N	N
27	2,2 x 10 <sup>-6</sup>	2,15 x 10 <sup>-6</sup>	N	N	N	N
28	2,17 x 10 <sup>-6</sup>	2,12 x 10 <sup>-6</sup>	N	N	N	N
29	N	N	N	N	N	N
30	N	N	N	N	N	N
31	N	N	N	N	N	N
32	N	N	N	N	N	N
33	N	N	N	N	N	N
34	N	N	N	N	N	N
35	N	N	N	N	N	N
36	N	N	N	N	N	N
37	N	N	N	N	N	N
38	N	N	N	N	N	N
39	N	N	N	N	N	N
40	N	N	N	N	N	N
	- Initial capacitance (Group 0) within tolerance given in detail specification or printed on capacitor .....				Maximum difference % ± 20	P
	- The difference between the capacitance value measured finally and in Group 0 shall not exceed 10 %, for ceramic capacitors the difference shall not exceed 20 % .....				Maximum difference % ± 10	P
	Final measurements: voltage proof and insulation resistance at 100 V:					P
	- Test temperature (°C) .....				23	



IEC 60384-14			
Clause	Requirement – Test	Result – Remark	Verdict

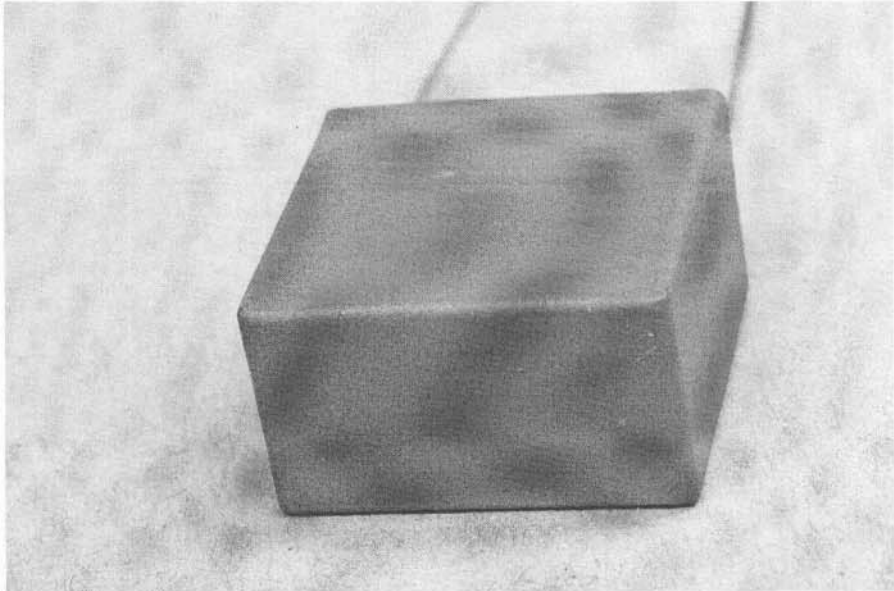
No.	X-capacitors				Y-capacitors			
	Test A		Test B or C		Test A		Test B or C	
	U (V d.c.)	R (MΩ) or RC (s)	U (V a.c.)	R (MΩ)	U (V a.c.)	R (MΩ)	U (V a.c.)	R (MΩ)
17	1182	> 20000	2050	> 20000	N	N	N	N
18	1182	> 20000	2050	> 20000	N	N	N	N
19	1182	> 20000	2050	> 20000	N	N	N	N
20	1182	> 20000	2050	> 20000	N	N	N	N
21	1182	> 20000	2050	> 20000	N	N	N	N
22	1182	> 20000	2050	> 20000	N	N	N	N
23	1182	> 20000	2050	> 20000	N	N	N	N
24	1182	> 20000	2050	> 20000	N	N	N	N
25	1182	> 20000	2050	> 20000	N	N	N	N
26	1182	> 20000	2050	> 20000	N	N	N	N
27	1182	> 20000	2050	> 20000	N	N	N	N
28	1182	> 20000	2050	> 20000	N	N	N	N
29	N	N	N	N	N	N	N	N
30	N	N	N	N	N	N	N	N
31	N	N	N	N	N	N	N	N
32	N	N	N	N	N	N	N	N
33	N	N	N	N	N	N	N	N
34	N	N	N	N	N	N	N	N
35	N	N	N	N	N	N	N	N
36	N	N	N	N	N	N	N	N
37	N	N	N	N	N	N	N	N
38	N	N	N	N	N	N	N	N
39	N	N	N	N	N	N	N	N
40	N	N	N	N	N	N	N	N



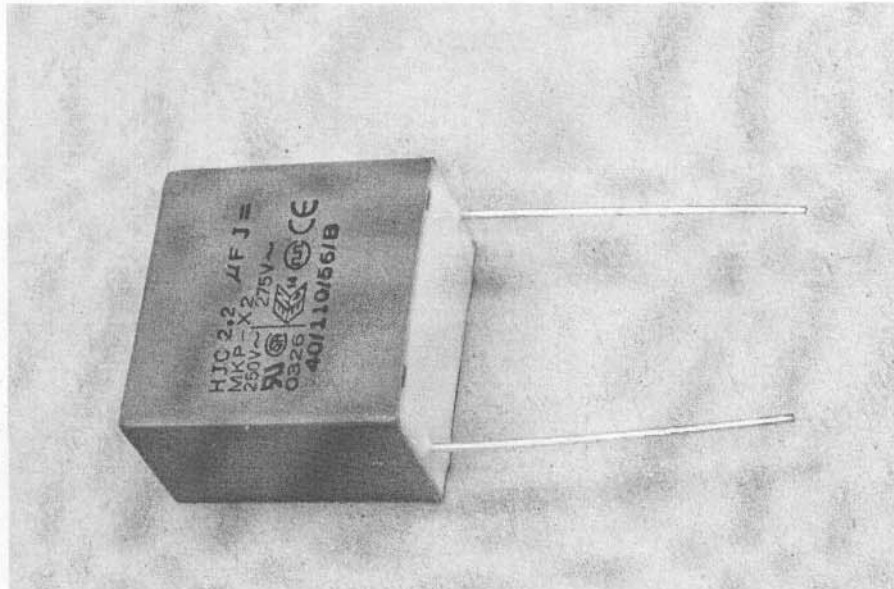
TRF No.: IEC60384\_14C

Intertek Semko AB

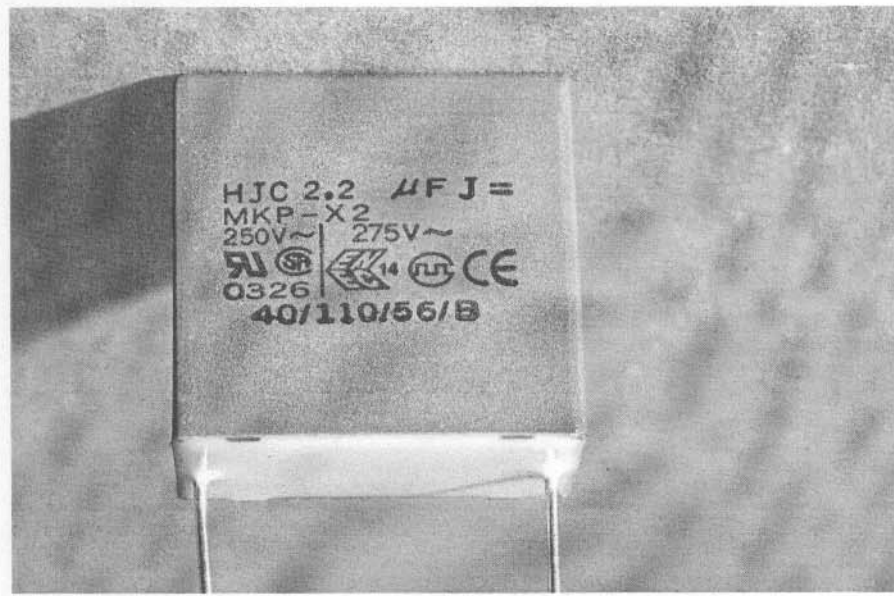
TRF originator: SGS Fimko



309083



309083



309083  
Intertek Semko AB

