



TEST REPORT

NUMBER: SHAH00185171

APPLICANT: LITEON SEMICONDUCTOR CORP.
28-1, WU SHIN STREET, TA WU LUNG,
KEELUNG 204, TAIWAN, R.O.C

DATE: APR 12, 2010

LITE-ON MICROELECTRONICS (WUXI) CO.,
LTD.
LAND LOT J7, J8WEPZ, NEW DISTRICT,
WUXI CITY, JIANGSU, CHINA
ATTN: CLORIS WEI

SAMPLE DESCRIPTION:

ONE (1) SUBMITTED SAMPLE SAID TO BE :

ITEM NAME : GPP BRIDGE: LEAD FREE PLATING.
(1) MIXED ALL PARTS OF BODY
(2) SILVER COLORED METAL PIN
(3) BLACK PLASTIC BODY WITHOUT SOLDER PASTE
& DIE

ITEM NO. : GBL PACKAGE FAMILY
(GBLXXX, GBLXXXL, GBLXXXM ETC)

TESTS CONDUCTED:

AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

TO BE CONTINUED

PREPARED AND CHECKED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

AUTHORIZED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

MYRA LV
CHEMICAL DIVISION MANAGER

STEPHEN TSANG
GENERAL MANAGER



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TESTS CONDUCTED

1. (A) TEST RESULT SUMMARY:

| TESTING ITEM | RESULT |
|---|--------|
| | (1) |
| CADMIUM (Cd) CONTENT (mg/kg) | ND |
| LEAD (Pb) CONTENT (mg/kg) | 189000 |
| MERCURY (Hg) CONTENT (mg/kg) | ND |
| CHROMIUM (VI) (Cr ⁶⁺) CONTENT (mg/kg) (FOR NON-METAL) | ND |
| POLYBROMINATED BIPHENYLS (PBBs) (mg/kg) | |
| MONOBROMO BIPHENYLS (MonoBB) | ND |
| DIBROMO BIPHENYLS (DiBB) | ND |
| TRIBROMO BIPHENYLS (TriBB) | ND |
| TETRABROMO BIPHENYLS (TetraBB) | ND |
| PENTABROMO BIPHENYLS (PentaBB) | ND |
| HEXABROMO BIPHENYLS (HexaBB) | ND |
| HEPTABROMO BIPHENYLS (HeptaBB) | ND |
| OCTABROMO BIPHENYLS (OctaBB) | ND |
| NONABROMO BIPHENYLS (NonaBB) | ND |
| DECABROMO BIPHENYL (DecaBB) | ND |
| POLYBROMINATED DIPHENYL ETHERS (PBDEs) (mg/kg) | |
| MONOBROMO DIPHENYL ETHERS (MonoBDE) | ND |
| DIBROMO DIPHENYL ETHERS (DiBDE) | ND |
| TRIBROMO DIPHENYL ETHERS (TriBDE) | ND |
| TETRABROMO DIPHENYL ETHERS (TetraBDE) | ND |
| PENTABROMO DIPHENYL ETHERS (PentaBDE) | ND |
| HEXABROMO DIPHENYL ETHERS (HexaBDE) | ND |
| HEPTABROMO DIPHENYL ETHERS (HeptaBDE) | ND |
| OCTABROMO DIPHENYL ETHERS (OctaBDE) | ND |
| NONABROMO DIPHENYL ETHERS (NonaBDE) | ND |
| DECABROMO DIPHENYL ETHER (DecaBDE) | ND |

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| TESTING ITEM | RESULT |
|---|--------|
| | |
| CADMIUM (Cd) CONTENT (mg/kg) | ND |
| LEAD (Pb) CONTENT (mg/kg) | 31 |
| MERCURY (Hg) CONTENT (mg/kg) | ND |
| CHROMIUM (VI) (Cr ⁶⁺) RESULT (BY BOILING WATER EXTRACTION ON METAL) (mg/kg WITH 50cm ²) | ND |

| TESTING ITEM | RESULT |
|---------------------------|--------|
| | |
| LEAD (Pb) CONTENT (mg/kg) | ND |

REMARK:

mg/kg = MILLIGRAM PER KILOGRAM = ppm

mg/kg WITH 50cm² = MILLIGRAM PER KILOGRAM WITH 50 SQUARE CENTIMETER

ND = NOT DETECTED

THE SUBMITTED SAMPLE (1) WAS NOT HOMOGENEOUS MATERIAL, SAMPLING RANDOMLY.

TESTED COMPONENTS:

- (1) MIXED ALL PARTS OF BODY.
- (2) SILVER COLORED METAL PIN.
- (3) BLACK PLASTIC BODY WITHOUT SOLDER PASTE & DIE.

(B) RoHS REQUIREMENT:

| RESTRICTED SUBSTANCES | LIMITS |
|--|-------------------|
| CADMIUM (Cd) | 0.01% (100 mg/kg) |
| LEAD (Pb) | 0.1% (1000 mg/kg) |
| MERCURY (Hg) | 0.1% (1000 mg/kg) |
| CHROMIUM (VI) (Cr ⁶⁺) | 0.1% (1000 mg/kg) |
| POLYBROMINATED BIPHENYLS (PBBs) | 0.1% (1000 mg/kg) |
| POLYBROMINATED DIPHENYL ETHERS (PBDEs) | 0.1% (1000 mg/kg) |

THE ABOVE LIMITS WERE QUOTED FROM 2002/95/EC AND AMENDMENT 2005/618/EC FOR HOMOGENEOUS MATERIAL.

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TESTS CONDUCTED
(C) TEST METHOD:

| <u>TESTING ITEM</u> | <u>TESTING METHOD</u> | <u>REPORTING LIMIT</u> |
|---|--|---|
| CADMIUM (Cd) CONTENT | WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION UNTIL THE TESTED SAMPLE WAS TOTALLY DISSOLVED AND DETERMINED BY ICP-OES | 2 mg/kg |
| LEAD (Pb) CONTENT | WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION UNTIL THE TESTED SAMPLE WAS TOTALLY DISSOLVED AND DETERMINED BY ICP-OES | 2 mg/kg |
| MERCURY (Hg) CONTENT | WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ACID DIGESTION UNTIL THE TESTED SAMPLE WAS TOTALLY DISSOLVED AND DETERMINED BY ICP-OES | 2 mg/kg |
| CHROMIUM (VI) (Cr ⁶⁺) CONTENT | WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY ALKALINE DIGESTION AND DETERMINED BY UV- VIS SPECTROPHOTOMETER | 1 mg/kg |
| CHROMIUM (VI) (Cr ⁶⁺) CONTENT (FOR METAL) | WITH REFERENCE TO IEC 62321 EDITION 1.0: 2008, BY BOILING WATER EXTRACTION AND DETERMINED BY UV-VIS SPECTROPHOTOMETER | 0.02mg/kg WITH 50cm ² (IN TESTING SOLUTION) |
| POLYBROMINATED BIPHENYLS (PBBs) & POLYBROMINATED DIPHENYL ETHERS (PBDEs) | WITH REFERENCE TO IEC IEC 62321 EDITION 1.0: 2008, BY SOLVENT EXTRACTION AND DETERMINED BY GC/MS AND FURTHER HPLC CONFIRMATION WHEN NECESSARY. | 5 mg/kg |

TO BE CONTINUED

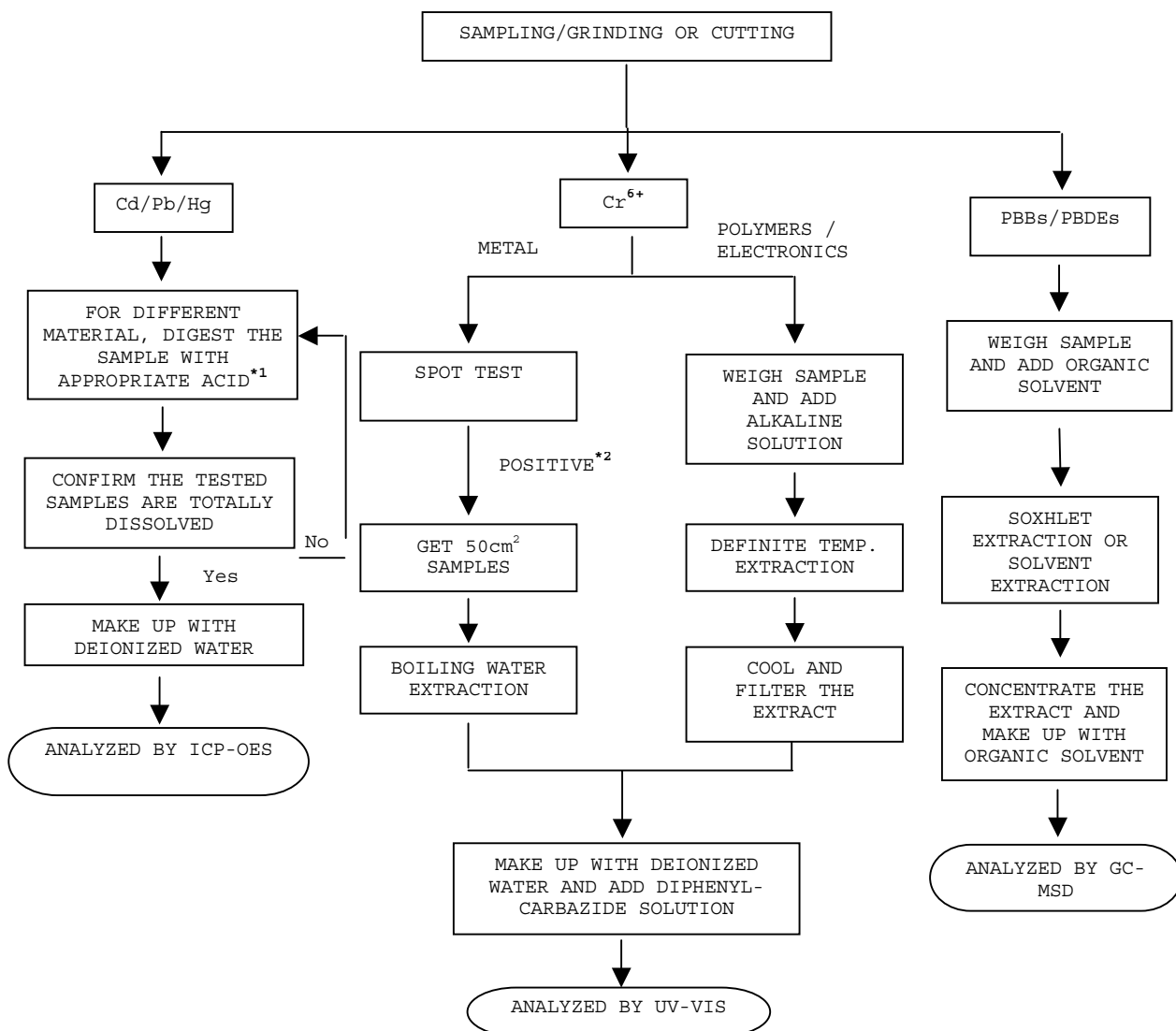
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TESTS CONDUCTED

(D) MEASUREMENT FLOWCHART:

TEST FOR Cd/Pb/Hg/Cr (VI)/PBBs/PBDEs CONTENTS
REFERENCE STANDARD: IEC 62321 EDITION 1.0: 2008



TO BE CONTINUED



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TESTS CONDUCTED

REMARKS:

*1: LIST OF APPROPRIATE ACID:

| <u>MATERIAL</u> | <u>ACID ADDED FOR DIGESTION</u> |
|-----------------|--|
| POLYMERS | HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃ |
| METALS | HNO ₃ , HCl, HF |
| ELECTRONICS | HNO ₃ , HCl, H ₂ O ₂ , HBF ₄ |

*2: IF THE RESULT OF SPOT TEST IS POSITIVE, CHROMIUM VI WOULD BE DETERMINED AS DETECTED.

TO BE CONTINUED



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TESTS CONDUCTED

2 POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) FOR GS CERTIFICATION

AS PER THE DOCUMENT ZEK 01.2-08 ISSUED BY THE CENTRAL EXPERIENCE EXCHANGE OFFICE (ZEK), BY SOLVENT EXTRACTION AND DETERMINED BY GC-MSD.

(I) TEST RESULT

| <u>TESTING ITEM</u> | <u>RESULT (ppm)</u> |
|---|---------------------|
| | (1) |
| NAPHTHALENE | ND |
| ACENAPHTHYLENE | ND |
| ACENAPHTHENE | ND |
| FLUORENE | ND |
| PHENANTHRENE | ND |
| ANTHRACENE | ND |
| FLUORANTHENE | ND |
| PYRENE | ND |
| CHRYSENE | ND |
| BENZO [a] ANTHRACENE | ND |
| BENZO [b] FLUORANTHENE | ND |
| BENZO [k] FLUORANTHENE | ND |
| BENZO [a] PYRENE | ND |
| DIBENZO [a, h] ANTHRACENE | ND |
| INDENO [1, 2, 3 -cd] PYRENE | ND |
| BENZO [g, h, i] PERYLENE | ND |
| SUM OF PAHs | ND |
| CLASSIFICATION OF SAMPLE: CATEGORY | II |
| CONCLUSION | P |

REMARKS: ppm = PARTS PER MILLION = mg/kg

ND = NOT DETECTED

P = PASS

DETECTION LIMIT = 0.2 ppm

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TESTS CONDUCTED

(II) LIMITS FOR PAHs IN PRODUCTS

| PARAMETER | PRODUCT | BENZO [a] PYRENE | SUM 16 PAHs (EPA) |
|--------------|--|---|---|
| CATEGORY I | MATERIALS INTENDED TO BE PUT IN THE MOUTH, OR MATERIALS OF TOYS FOR CHILDREN AGED < 36 MONTHS WITH INTENDED SKIN CONTACT ²⁾ | NOT DETECTED (<0.2 mg/kg) ¹⁾ | NOT DETECTED (<0.2 mg/kg) ¹⁾ |
| CATEGORY II | MATERIALS NOT COVERED BY CATEGORY I, WITH FORESEEABLE SKIN CONTACT FOR LONGER THAN 30 SECONDS (LONG-TERM SKIN CONTACT) | 1 mg/kg | 10 mg/kg |
| CATEGORY III | MATERIALS NOT COVERED BY CATEGORY I OR II, WITH FORESEEABLE SKIN CONTACT UP TO 30 SECONDS (SHORT TERM SKIN CONTACT) | 20 mg/kg | 200 mg/kg |

REMARK:

1) IF THE LIMITS OF CATEGORY I ARE SURPASSED BUT THE LIMITS OF CATEGORY II STILL MET, THE CONFIRMATION OF SUITABILITY OF CONTACT WITH FOODSTUFF OR THE ORAL MUCOSA CAN BE VERIFIED BY AN ADDITIONAL MIGRATION TEST OF THE PAHs COMPONENTS ACCORDING TO EN 1186 AND §64 LFGB B80.30-1. THE RESULTS OF THE MIGRATION TEST SHALL BE EVALUATED ACCORDING TO LAW CRITERIA FOR FOODSTUFF.

2) ACCORDING TO THE STIPULATIONS OF THE EK2.

TO BE CONTINUED

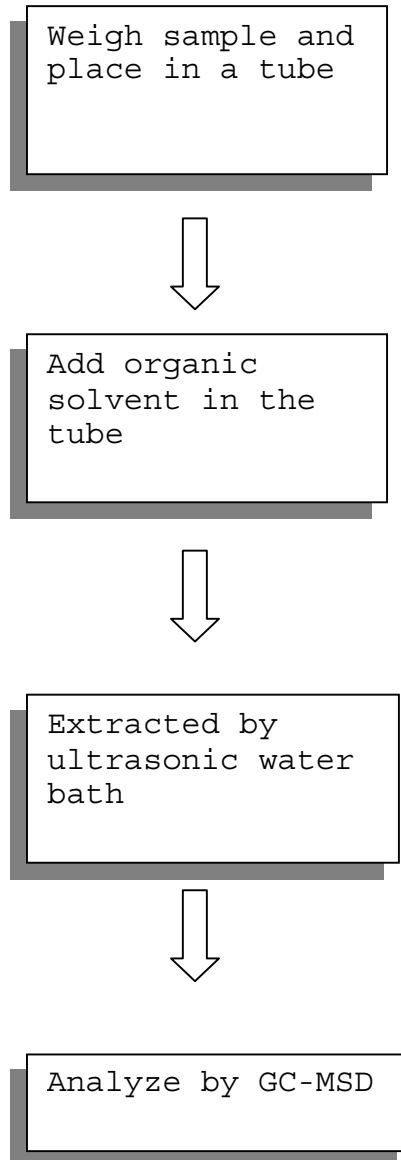
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TESTS CONDUCTED

MEASUREMENT FLOWCHART:

TEST FOR **PAHs** CONTENT



TO BE CONTINUED



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TESTS CONDUCTED

3 PERFLUOROOCTANE SULFONATES (PFOS) AND PERFLUOROOCTANOIC ACID
(PFOA) CONTENT

BY SOLVENT EXTRACTION AND FOLLOWED BY LIQUID CHROMATOGRAPHY-MASS
SPECTROMETRIC (LC-MS) ANALYSIS.

| <u>COMPOUND</u> | <u>RESULT (ppm)</u> | <u>RESULT (ug/m²)</u> |
|----------------------------|---------------------|----------------------------------|
| | (1) | (2) |
| PERFLUOROOCTANE SULFONATES | <1.0 | <1.0 |
| PERFLUOROOCTANOIC ACID | <1.0 | <1.0 |

REMARK : < = LESS THAN
ppm = PARTS PER MILLION = mg/kg
DETECTION LIMIT = 1.0 ppm / ug/m²

DATE SAMPLE RECEIVED : MAR.29, 2010
TESTING PERIOD : MAR.29, 2010 TO APR.7, 2010

TO BE CONTINUED

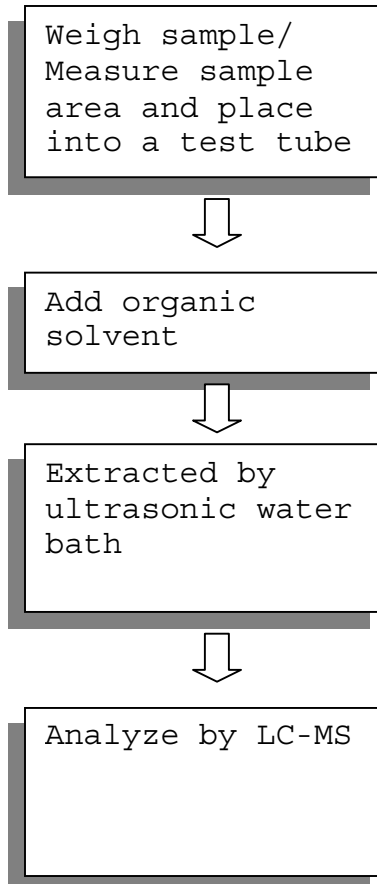
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MEASUREMENT FLOWCHART:

TEST FOR **PERFLUOROCTANE SULFONATES (PFOS) AND
PERFLUOROCTANOIC ACID (PFOA) CONTENT:**

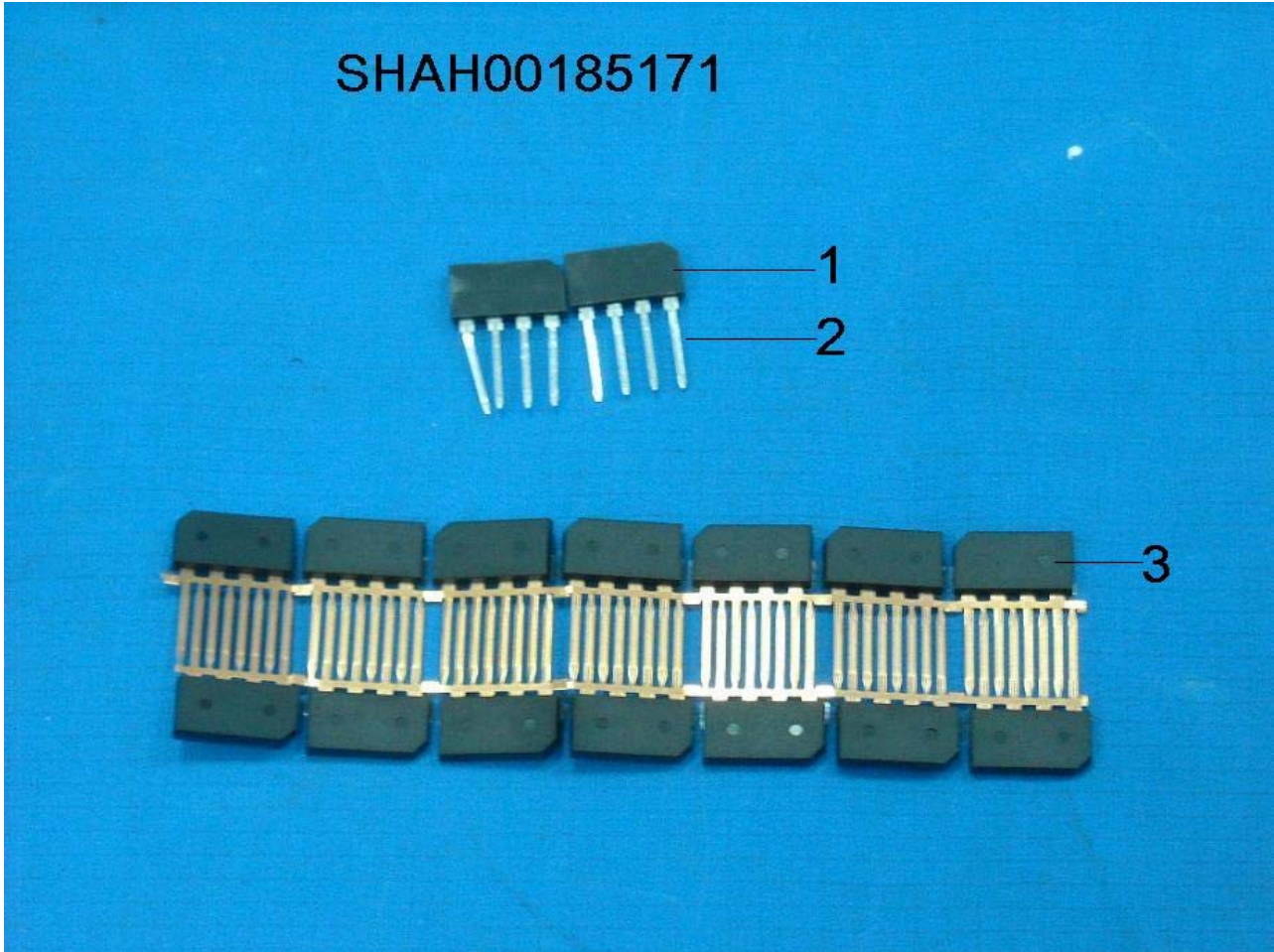


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END OF REPORT