

お客様各位

資料中の「ラピスセミコンダクタ」等名称の ラピステクノロジー株式会社への変更

2020年10月1日をもって、ラピスセミコンダクタ株式会社のLSI事業部門は、ラピステクノロジー株式会社に分割承継されました。従いまして、本資料中にあります「ラピスセミコンダクタ株式会社」、「ラピスセミ」、「ラピス」といった表記に関しましては、全て「ラピステクノロジー株式会社」に読み替えて適用するものとさせていただきます。なお、会社名、会社商標、ロゴ等以外の製品に関する内容については、変更はありません。以上、ご理解の程よろしくお願いたします。

2020年10月1日
ラピステクノロジー株式会社

Dear customer

LAPIS Semiconductor Co., Ltd. ("LAPIS Semiconductor"), on the 1st day of October, 2020, implemented the incorporation-type company split (shinsetsu-bunkatsu) in which LAPIS established a new company, LAPIS Technology Co., Ltd. ("LAPIS Technology") and LAPIS Technology succeeded LAPIS Semiconductor's LSI business.

Therefore, all references to "LAPIS Semiconductor Co., Ltd.", "LAPIS Semiconductor" and/or "LAPIS" in this document shall be replaced with "LAPIS Technology Co., Ltd."

Furthermore, there are no changes to the documents relating to our products other than the company name, the company trademark, logo, etc.

Thank you for your understanding.

LAPIS Technology Co., Ltd.
October 1, 2020

環境データ Environmental Data

製品名/Product name: ML5204-001TDZ07FL

本仕様は上記の商品についての仕様です、ラピスでは同等商品で細部の仕様に違いのある複数の商品が存在する場合があります、本仕様に基づきご発注、サンプルご要求等される場合は上記商品名を末尾まで全てご指定ください。This spec sheet is for product above name, LAPIS have more than 1 products name in case there are multi products which have different spec in detail. Please order by full name above, when you send purchase order or sample order.

構成/ Composition

本書は、下記の通りの構成になっています。/This document is composed of the following.

データの名称 Data Name
RoHS 適合保証書/RoHS Certificate of Compliance
Reach 適合保証書/Reach Certificate of Compliance
成分表/ List of ingredient substances
環境負荷物質測定結果報告書 / SOC Analysis Report

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ラピスセミコンダクタ株式会社/LAPIS Semiconductor Co., Ltd.

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Notes

- 1) The information contained herein is subject to change without notice.
- 2) This is product introduction sheet, before you use our products, please contact our sales representative and verify the latest specifications
- 3) Although LAPIS Semiconductor is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors. Therefore, in order to prevent personal injury or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures. LAPIS Semiconductor shall have no responsibility for any damages arising out of the use of our Products beyond the rating specified by LAPIS Semiconductor.
- 4) Examples of application circuits, circuit constants and any other information contained herein are provided only to illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.
- 5) The technical information specified herein is intended only to show the typical functions of the Products and examples of application circuits for the Products. No license, expressly or implied, is granted hereby under any intellectual property rights or other rights of LAPIS Semiconductor or any third party with respect to the information contained in this document; therefore LAPIS Semiconductor shall have no responsibility whatsoever for any dispute, concerning such rights owned by third parties, arising out of the use of such technical information.
- 6) The Products are intended for use in general electronic equipment (i.e. AV/OA devices, communication, consumer systems, gaming/entertainment sets) as well as the applications indicated in this document.
- 7) The Products specified in this document are not designed to be radiation tolerant.
- 8) For use of our Products in applications requiring a high degree of reliability (as exemplified below), please contact and consult with a LAPIS Semiconductor representative: transportation equipment (i.e. cars, ships, trains), primary communication equipment, traffic lights, fire/crime prevention, safety equipment, medical systems, servers, solar cells, and power transmission systems.
- 9) Do not use our Products in applications requiring extremely high reliability, such as aerospace equipment, nuclear power control systems, and submarine repeaters.
- 10) LAPIS Semiconductor shall have no responsibility for any damages or injury arising from non-compliance with the recommended usage conditions and specifications contained herein.
- 11) LAPIS Semiconductor has used reasonable care to ensure the accuracy of the information contained in this document. However, LAPIS Semiconductor does not warrant that such information is error-free and LAPIS Semiconductor shall have no responsibility for any damages arising from any inaccuracy or misprint of such information.
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[No18933] (1/1)
2018年4月17日

お客様各位

ラピスセミコンダクタ株式会社
品質保証部 品質サービスグループ
(扱 い 大友)



RoHS 委員会委任指令適合保証書 (2015/863/EU)

本製品は、RoHS 指令に適合しており、以下に記載する化学物質が、規制値未満であることを保証いたします。

1) カドミウムおよびその化合物	: 許容限度 0.01wt% (100ppm)
2) 鉛およびその化合物	: 許容限度 0.1wt% (1000ppm)
3) 水銀およびその化合物	: 許容限度 0.1wt% (1000ppm)
4) 六価クロム化合物	: 許容限度 0.1wt% (1000ppm)
5) ポリ臭化ビフェニール類	: 許容限度 0.1wt% (1000ppm)
6) ポリ臭化ジフェニルエーテル類	: 許容限度 0.1wt% (1000ppm)
7) フタル酸ビス(2-エチルヘキシル)	: 許容限度 0.1wt% (1000ppm)
8) ジブチルフタレート	: 許容限度 0.1wt% (1000ppm)
9) ベンジルブチルフタレート	: 許容限度 0.1wt% (1000ppm)
10) ジイソブチルフタレート	: 許容限度 0.1wt% (1000ppm)

以上、宜しくご査収の程お願い致します。

To: Customers.

**Certificate of Compliance
RoHS (Restriction of Hazardous Substances)**

This document certifies that this product is in compliance with:

*Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EU RoHS Directive)

**Commission Delegated Directive 2015/863/EU of 31 March 2015 amending Annex II to 2011/65/EU (shown above) as regards the list of restricted substances

***Management Methods for Controlling Pollution Caused by Electronic Information Products (China RoHS)

The stated components are deemed as compliant as accord to definitions given in the directives.

The hazardous Substances are:

1. Cadmium (Cd)	< 100ppm
2. Lead (Pb)	< 1000ppm
3. Mercury (Hg)	< 1000ppm
4. Hexavalent Chromium (Cr VI)	< 1000ppm
5. Polybrominated Biphenyls (PBBs)	< 1000ppm
6. Polybrominated Diphenyl Ethers (PBDEs)	< 1000ppm
7. Bis (2-ethylhexyl) phthalate (DEHP)	< 1000ppm
8. Dibutyl phthalate (DBP)	< 1000ppm
9. Benzyl butyl phthalate (BBP)	< 1000ppm
10. Diisobutyl phthalate (DIBP)	< 1000ppm

LAPIS Semiconductor Co., Ltd.

Quality Service Group, Quality Assurance Division

Authorized Person: Masato Umetani Manager

Signature: M. Umetani

Date: Apr 17, 2018

(No. 18933)

To: Customer

Certification of REACH Compliance on SVHC in the Products

We hereby guarantee that this products do not contain the SVHC substances that are defined by EU REACH regulation shown in Appendix 1 exceed the restricted threshold.

In addition, this guarantee is set within our knowledge as far as we can be acknowledged; in case that the products were found as containing SVHC substances exceed the restricted threshold in the future, we will report our findings immediately.

Sincerely,

LAPIS Semiconductor Co., Ltd.

Quality Service Group, Quality Assurance Division

Authorized Person: Masato Umetani Manager

Signature: *M. Umetani*

Date: April 17, 2018

[No.20807]

Appendix 1
List of SVHC Candidates

No.	Substance name	CAS number	EC number
1	Anthracene	120-12-7	204-371-1
2	4,4'- Diaminodiphenylmethane (MDA)	101-77-9	202-974-4
3	Dibutyl phthalate (DBP)	84-74-2	201-557-4
4	Cobalt dichloride	7646-79-9	231-589-4
5	Diarsenic pentaoxide	1303-28-2	215-116-9
6	Diarsenic trioxide	1327-53-3	215-481-4
7	Sodium dichromate	7789-12-0 10588-01-9	234-190-3
8	5- <i>tert</i> -butyl-2,4,6-trinitro- <i>m</i> -xylene (musk xylene)	81-15-2	201-329-4
9	Bis (2-ethyl(hexyl)phthalate) (DEHP)	117-81-7	204-211-0
10	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α – HBCDD, β -HBCDD, γ -HBCDD)	25637-99-4 3194-55-6 (134237-50-6 134237-51-7 134237-52-8)	247-148-4 221-695-9
11	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	287-476-5
12	Bis(tributyltin)oxide (TBTO)	56-35-9	200-268-0
13	Lead hydrogen arsenate	7784-40-9	232-064-2
14	Benzyl butyl phthalate (BBP)	85-68-7	201-622-7
15	Triethyl arsenate	15606-95-8	427-700-2
16	Anthracene oil	90640-80-5	292-602-7
17	Anthracene oil, anthracene paste, distn.Lights	91995-17-4	295-278-5
18	Anthracene oil, anthracene paste, anthracene fraction	91995-15-2	295-275-9
19	Anthracene oil, anthracene-low	90640-82-7	292-604-8
20	Anthracene oil, anthracene paste	90640-81-6	292-603-2
21	Diisobutyl Phthalate (DIBP)	84-69-5	201-553-2
22	2,4-Dinitrotoluene	121-14-2	204-450-0
23	Coal tar pitch, high temperature	65996-93-2	266-028-2
24	Tris(2-chloroethyl)phosphate (TCEP)	115-96-8	204-118-5
25	Aluminosilicate, Refractory Ceramic Fibres	(JAMP-SN0007)	- Index No. 650-017-00-8

[No.20807]

No.	Substance name	CAS number	EC number
26	Zirconia Aluminosilicate, Refractory Ceramic Fibres	(JAMP-SN0055)	- Index No. 650-017-00-8
27	Lead sulfochromate yellow (C.I. Pigment yellow 34)	1344-37-2	34215-693-7
28	Lead chromate molybdate sulfate red (C.I. Pigment Red 104)	12656-85-8	104235-759-9
29	Lead Chromate	7758-97-6	231-846-0
30	Acrylamide	79-06-1	201-173-7
31	Trichloroethylene	79-01-6	201-167-4
32	Boric acid	10043-35-3 11113-50-1	233-139-2 234-343-4
33	Disodium tetraborate, anhydrous	1330-43-4 12179-04-3 1303-96-4	215-540-4
34	Tetraboron disodium heptaoxide, hydrate	12267-73-1	235-541-3
35	Sodium chromate	7775-11-3	231-889-5
36	Potassium chromate	7789-00-6	232-140-5
37	Ammonium dichromate	7789-09-5	232-143-1
38	Potassium dichromate	7778-50-9	231-906-6
39	Cobalt(II) sulphate	10124-43-3	233-334-2
40	Cobalt(II) dinitrate	10141-05-6	233-402-1
41	Cobalt(II) carbonate	513-79-1	208-169-4
42	Cobalt(II) diacetate	71-48-7	200-755-8
43	2-Methoxyethanol	109-86-4	203-713-7
44	2-Ethoxyethanol	110-80-5	203-804-1
45	Chromium trioxide	1333-82-0	215-607-8
46	Acids generated from chromium trioxide and their oligomers: Chromic acid, Dichromic acid, Oligomers of chromic acid and dichromic acid	7738-94-5 13530-68-2 (JAMP-SN0071)	231-801-5 236-881-5 -
47	2-Ethoxyethyl acetate (2-EEA)	111-15-9	203-839-2
48	Strontium chromate	7789-06-2	232-142-6
49	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich(DIHP)	71888-89-6	276-158-1

[No.20807]

No.	Substance name	CAS number	EC number
50	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4	271-084-6
51	Hydrazine	302-01-2 7803-57-8	206-114-9
52	1-Methyl-2-pyrrolidone (NMP)	872-50-4	212-828-1
53	1,2,3-Trichloropropane	96-18-4	202-486-1
54	Dichromium tris (chromate)	24613-89-6	246-356-2
55	Potassium hydroxyoctaoxidizincatedi-chromate	11103-86-9	234-329-8
56	Pentazinc chromate octahydroxide	49663-84-5	256-418-0
57	Formaldehyde, oligomeric reaction products with aniline (technical MDA)	25214-70-4	500-036-1
58	Bis(2-methoxyethyl) phthalate (DMEP)	117-82-8	204-212-6
59	2-Methoxyaniline; <i>o</i> -Anisidine	90-04-0	201-963-1
60	4-(1,1,3,3-tetramethylbutyl)phenol, (4- <i>tert</i> -Octylphenol)	140-66-9	205-426-2
61	1,2-Dichloroethane	107-06-2	203-458-1
62	Bis(2-methoxyethyl)ether	111-96-6	203-924-4
63	Arsenic acid	7778-39-4	231-901-9
64	Calcium arsenate	7778-44-1	231-904-5
65	Trilead diarsenate	3687-31-8	222-979-5
66	N,N-dimethylacetamide (DMAC)	127-19-5	204-826-4
67	2,2'-dichloro-4,4'-methylenedianiline (MOCA)	101-14-4	202-918-9
68	Phenolphthalein	77-09-8	201-004-7
69	Lead diazide	13424-46-9	236-542-1
70	Lead styphnate	15245-44-0	239-290-0
71	Lead dipicrate	6477-64-1	229-335-2
72	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	203-977-3
73	1,2-dimethoxyethane;ethylene glycol dimethyl ether (EGDME)	110-71-4	203-794-9
74	Diboron trioxide	1303-86-2	215-125-8
75	Formamide	75-12-7	200-842-0

[No.20807]

No.	Substance name	CAS number	EC number
76	Lead(II)bis(methanesulfonate)	17570-76-2	401-750-5
77	TGIC(1,3,5-tris(oxiran-2-ylmethyl)-1,3,5-triazine-2,4,6-trione)	2451-62-9	219-514-3
78	β -TGIC(1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	423-400-0
79	4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	90-94-8	202-027-5
80	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	202-959-2
81	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride(C.I. Basic Blue 26) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	2580-56-5	219-943-6
82	α,α -Bis[4-(dimethylamino)phenyl]-4(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	6786-83-0	229-851-8
83	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	561-41-1	209-218-2
84	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride(C.I. Basic Violet 3) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	548-62-9	208-953-6
85	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	214-604-9
86	Pentacosafuorotridecanoic acid	72629-94-8	276-745-2
87	Tricosafuorododecanoic acid	307-55-1	206-203-2
88	Henicosafuoroundecanoic acid	2058-94-8	218-165-4
89	Heptacosafuorotetradecanoic acid	376-06-7	206-803-4

[No.20807]

No.	Substance name	CAS number	EC number
90	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated - covering well-defined substances and UVCB substances, polymers and homologues	(JAMP-SN0081)	-
91	4-Nonylphenol, branched and linear - substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof	(JAMP-SN0082)	-
92	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	204-650-8
93	Cyclohexane-1,2-dicarboxylic anhydride (Hexahydrophthalic anhydride - HHPA)	85-42-7	201-604-9
94	Hexahydromethylphthalic anhydride, Hexahydro-4-methylphthalic anhydride, Hexahydro-1-methylphthalic anhydride, Hexahydro-3-methylphthalic anhydride	25550-51-0 19438-60-9 48122-14-1 57110-29-9	247-094-1 243-072-0 256-356-4 260-566-1
95	Methoxy acetic acid	625-45-6	210-894-6
96	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	284-032-2
97	Diisopentylphthalate (DIPP)	605-50-5	210-088-4
98	N-pentyl-isopentylphthalate	776297-69-9	-
99	1,2-Diethoxyethane	629-14-1	211-076-1
100	N,N-dimethylformamide; dimethyl formamide	68-12-2	200-679-5
101	Dibutyltin dichloride (DBTC)	683-18-1	211-670-0
102	Acetic acid, lead salt, basic	51404-69-4	257-175-3
103	Basic lead carbonate (trilead bis(carbonate)dihydroxide)	1319-46-6	215-290-6
104	Lead oxide sulfate (basic lead sulfate)	12036-76-9	234-853-7
105	[Phthalato(2-)]dioxotrilead (dibasic lead phthalate)	69011-06-9	273-688-5
106	Dioxobis(stearato)trilead	12578-12-0	235-702-8
107	Fatty acids, C16-18, lead salts	91031-62-8	292-966-7

[No.20807]

No.	Substance name	CAS number	EC number
108	Lead bis(tetrafluoroborate)	13814-96-5	237-486-0
109	Lead cyanamidate	20837-86-9	244-073-9
110	Lead dinitrate	10099-74-8	233-245-9
111	Lead oxide (lead monoxide)	1317-36-8	215-267-0
112	Lead tetroxide (orange lead)	1314-41-6	215-235-6
113	Lead titanium trioxide	12060-00-3	235-038-9
114	Lead Titanium Zirconium Oxide	12626-81-2	235-727-4
115	Pentalead tetraoxide sulphate	12065-90-6	235-067-7
116	Pyrochlore, antimony lead yellow	8012-00-8	232-382-1
117	Silicic acid, barium salt, lead-doped	68784-75-8	272-271-5
118	Silicic acid, lead salt	11120-22-2	234-363-3
119	Sulfurous acid, lead salt, dibasic	62229-08-7	263-467-1
120	Tetraethyllead	78-00-2	201-075-4
121	Tetralead trioxide sulphate	12202-17-4	235-380-9
122	Trilead dioxide phosphonate	12141-20-7	235-252-2
123	Furan	110-00-9	203-727-3
124	Propylene oxide; 1,2-epoxypropane; methyloxirane	75-56-9	200-879-2
125	Diethyl sulphate	64-67-5	200-589-6
126	Dimethyl sulphate	77-78-1	201-058-1
127	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxaz olidine	143860-04-2	421-150-7
128	Dinoseb	88-85-7	201-861-7
129	4,4'-methylenedi-o-toluidine	838-88-0	212-658-8
130	4,4'-oxydianiline and its salts	101-80-4	202-977-0
131	4-Aminoazobenzene; 4-Phenylazoaniline	60-09-3	200-453-6
132	4-methyl- <i>m</i> -phenylenediamine (2,4-toluene-diamine)	95-80-7	202-453-1
133	6-methoxy- <i>m</i> -toluidine (<i>p</i> -cresidine)	120-71-8	204-419-1
134	Biphenyl-4-ylamine	92-67-1	202-177-1
135	<i>o</i> -aminoazotoluene	97-56-3	202-591-2
136	<i>o</i> -Toluidine; 2-Aminotoluene	95-53-4	202-429-0

[No.20807]

No.	Substance name	CAS number	EC number
137	N-methylacetamide	79-16-3	201-182-6
138	1-bromopropane; <i>n</i> -propyl bromide	106-94-5	203-445-0
139	Pentadecafluorooctanoic acid (PFOA)	335-67-1	206-397-9
140	Cadmium oxide	1306-19-0	215-146-2
141	Ammonium pentadecafluorooctaboate (APFO)	3825-26-1	223-320-4
142	Cadmium	7440-43-9	231-152-8
143	4-Nonylphenol, branched and linear, ethoxylated	(JAMP-SN0064)	-
144	Dipentyl phthalate (DPP)	131-18-0	205-017-9
145	Cadmium sulphide	1306-23-6	215-147-8
146	Dihexyl phthalate	84-75-3	201-559-5
147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	209-358-4
148	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	217-710-3
149	Imidazolidine-2-thione; 2-imidazoline-2-thiol	96-45-7	202-506-9
150	Lead di(acetate)	301-04-2	206-104-4
151	Trixylyl phosphate	25155-23-1	246-677-8
152	Cadmium chloride	10108-64-2	233-296-7
153	1,2-Benzenedicarboxylic acid, dihexylester, branched and linear	68515-50-4	271-093-5
154	Sodium peroxometaborate	7632-04-4	231-556-4
155	Sodium perborate; perboric acid, sodium salt	15120-21-5 13517-20-9 11138-47-9 37244-98-7 12040-72-1 -	239-172-9 - - 234-390-0 - -
156	Cadmium fluoride	7790-79-6	232-222-0

[No.20807]

No.	Substance name	CAS number	EC number
157	Cadmium sulphate	10124-36-4 31119-53-6	233-331-6
158	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	223-346-6
159	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	247-384-8
160	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1	239-622-4
161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)	(JAMP-SN0084)	-
162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate (EC No. 201-559-5)	68515-51-5 68648-93-1	271-094-0 272-013-1
163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual stereoisomers of [1] and [2] or any combination thereof]	(JAMP-SN0085)	-
164	Nitrobenzene	98-95-3	202-716-0
165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	223-383-8
166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	253-037-1
167	1,3-propanesultone	1120-71-4	214-317-9
168	Perfluorononan-1-oic acid (2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-heptafluorooxanonanoic acid) and its sodium and ammonium salts	375-95-1 21049-39-8 4149-60-4	206-801-3
169	Benzo[def]chrysene (Benzo[a]pyrene)	50-32-8	200-028-5
170	4,4'-isopropylidenediphenol (bisphenol A)	80-05-7	201-245-8

[No.20807]

No.	Substance name	CAS number	EC number
171	4-Heptylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 7 covalently bound predominantly in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]	(JAMP-SN0089)	-
172	<i>p</i> -(1,1-dimethylpropyl)phenol	80-46-6	201-280-9
173	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	3108-42-7 335-76-2 3830-45-3	- 206-400-3 221-470-5
174	Perfluorohexane-1-sulphonic acid and its salts (PFHxS)	355-46-4 (JAMP-SN0090)	206-587-1 -
175	Chrysene	218-01-9 1719-03-5	205-923-4
176	Benz[a]anthracene	56-55-3 1718-53-2	200-280-6
177	Cadmium nitrate	10022-68-1 10325-94-7	233-710-6
178	Cadmium hydroxide	21041-95-2	244-168-5
179	Cadmium carbonate	513-78-0	208-168-9
180	Dodecachloropentacyclo[12.2.1.1 ^{6,9} .0 ^{2,13} .0 ^{5,1}] ⁰ octadeca-7,15-diene ("Dechlorane Plus" TM) covering any of its individual anti- and syn-isomers or any combination thereof	13560-89-9 135821-74-8 135821-03-3	236-948-9
181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with $\geq 0.1\%$ w/w 4-heptylphenol, branched and linear(4-HPb)]	93925-00-9	300-298-5

[No.20807]

List of ingredient substances in product

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Quality Service Group
Quality Assurance Division

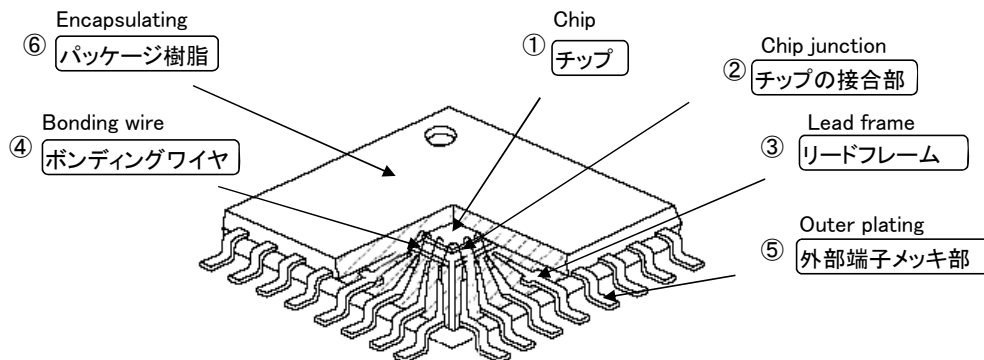
Doc. No. 18933
Prepared 2018/4/17
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TEL +81-45-476-9219

Product name :	ML5204(P-TSSOP20-0225-0.65-TK6)	Weight of product(mg)	80.00
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Composition part	Mass(mg)	Substance Group	Substance	CAS No.	Purposes of use	Content(mg)	Composition Percentage(%)	Whole Percentage(%)
Chip	1.53	Silicon and inorganic compound	Silicon (Si)	7440-21-3	Main material of Chip	1.5048	98.3550	1.8810
		Arsenic and its inorganic compounds	Arsenic (As)	7440-38-2	Dopant	0.0000	0.0026	0.0001
		Boron and its compounds	Boron (B)	7440-42-8	Dopant	0.0001	0.0039	0.0001
		Phosphorous and its compounds	Phosphorous (P)	7723-14-0	Dopant	0.0002	0.0131	0.0003
		Titanium and its compounds	Titanium (Ti)	7440-32-6	Circuit forming	0.0034	0.2222	0.0043
		Tungsten and its compounds	Tungsten (W)	7440-33-7	Circuit forming	0.0092	0.5980	0.0114
		Copper and its compounds	Copper (Cu)	7440-50-8	Circuit forming	0.0000	0.0026	0.0001
		Aluminum and its compounds	Aluminum (Al)	7429-90-5	Circuit forming	0.0123	0.8026	0.0154
Chip junction	0.25	Silver and its compounds	Silver (Ag)	7440-22-4	Chip bonding (Main material)	0.1910	77.0015	0.2388
		Resin	Acrylic resin	—	Chip bonding (Main material)	0.0496	19.9992	0.0620
		Resin	Epoxy resin etc.	—	Chip bonding (Main material)	0.0074	2.9993	0.0093
Lead frame	39.09	Copper and its compounds	Copper (Cu)	7440-50-8	Material of alloy	37.4286	95.7592	46.7857
		Iron and its compounds	Iron (Fe)	7439-89-6	Material of alloy	0.8811	2.2543	1.1014
		Silver and its compounds	Silver (Ag)	7440-22-4	Material of alloy	0.7764	1.9865	0.9706
Bonding wire	0.14	Gold and its compounds	Gold (Au)	7440-57-5	Chip and outer terminal wiring	0.1407	100.0000	0.1759
Outer plating	2.25	Tin and its compounds	Tin (Sn)	7440-31-5	Material of terminal plating	2.2541	100.0000	2.8176
Encapsulating	36.74	Resin	Epoxy resin etc.	—	Sealant	3.8211	10.4000	4.7760
		Phosphorous and its compounds	Organic phosphorous compound	—	Curing catalyst for resin	0.5144	1.4000	0.6430
		Silica	Silica(SiO2)	60676-86-0	Main material	32.3321	88.0000	40.4152
		Carbon	Carbon black(C)	1333-86-4	Coloring agent	0.0735	0.2000	0.0919
		Others				0.0000		
Summation of ingredient						80.0000		100.00
Weight of product - Summation of ingredient						0.00		

環境負荷物質測定結果報告書 / SOC Analysis Report

No.18933-C



作成日 Date	2018/4/17
社名 Company Name	ラピスセミコンダクタ株式会社 LAPIS Semiconductor Co., Ltd.
部署名 Division	品質保証部 品質サービスG Quality Service G, Quality Assurance Div.
責任者 Approved by	課長 梅谷 正人 Manager, Masato Umetani
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上記製品を構成する各部位に含まれる環境負荷物質の測定結果は、以下の通りであることを報告致します。
We report that the measurement of the containing of SOC in parts of product above are stated follows.

	部位名称 Component Parts		材質 Main Element	測定結果 Analysis Result (ppm)						測定方法 Analysis Method						分析機関 Analysis Party
				Cd	Pb	Hg	Cr6+	PBB	PBDE	Cd	Pb	Hg	Cr6+	PBB	PBDE	
構成部位 Materials	①	チップ Chip	シリコン Silicon	<2	<2	<2	<2	<5	<5	ICP-AES	ICP-AES	ICP-AES	UV-VIS	GC/MS	GC/MS	第三者分析機関 3rd Analysis Party
	②	チップの接合部 Chip junction	銀ペースト Silver Paste	<2	<2	<2	<2	<5	<5	ICP-AES	ICP-AES	ICP-AES	UV-VIS	GC/MS	GC/MS	第三者分析機関 3rd Analysis Party
	③	リードフレーム Lead frame	銅合金 Cu-Alloy	<2	<2	<2	<2	<5	<5	ICP-AES	ICP-AES	ICP-AES	UV-VIS	GC/MS	GC/MS	第三者分析機関 3rd Analysis Party
	④	ボンディングワイヤ Bonding wire	金線 Au-wire	<2	<2	<2	<2	<5	<5	ICP-AES	ICP-AES	ICP-AES	UV-VIS	GC/MS	GC/MS	第三者分析機関 3rd Analysis Party
	⑤	外部端子メッキ部 Outer plating	鉛フリーメッキ Sn-Plating	<2	6.79 ^{*im}	<2	<2	<5	<5	ICP-AES	ICP-AES	ICP-AES	UV-VIS	GC/MS	GC/MS	第三者分析機関 3rd Analysis Party
	⑥	パッケージ樹脂 Encapsulating	エポキシ系樹脂 Epoxy-Resin	<2	<2	<2	<2	<5	<5	ICP-AES	ICP-AES	ICP-AES	UV-VIS	GC/MS	GC/MS	第三者分析機関 3rd Analysis Party

*im 不純物 Impurities