**B1xx-p-F B2xxA-p-F B3xxA-p-F SMAZxxx**

Part Number: **SMA OJ Devices**
Weight (mg): 64

p = package designator
DATE CODE LIMITED
See Data Sheet

| Element | Material Group | Materials | CAS (if applicable) | Average mass homogeneous Materal(%) | Percent of whole (%) | Mass (mg) | ppm Homogeneous Material | ppm overall |
|---|---|---|---|---|---|---|---|---|
| Chip | Silicon w/Metal | Doped Silicon* | 7440-21-3 | 98.90% | 2.97 | 1.9 | 989000 | 29361 |
| | | Ni | 7440-02-0 | 1.10% | | | 11000 | 327 |
| Solder Paste | RoHS Exempt High Temperature | Pb | 7439-92-1 | 92.50% | 4.00 | 2.56 | 925000 | 37000 |
| | | Sn | 7440-31-5 | 5.00% | | | 50000 | 2000 |
| | | Ag | 7440-22-4 | 2.50% | | | 25000 | 1000 |
| Leadframe & Clip | Copper Alloy | Cu (99.95%) | 7440-50-8 | 99.95% | 41.56 | 26.6 | 999500 | 415417 |
| | | Zn (0.004%) | 7440-66-6 | 0.01% | | | 60 | 25 |
| | | Fe (0.01%) | 7439-89-6 | 0.01% | | | 100 | 42 |
| | | P (0.034%) | 7723-14-0 | 0.03% | | | 340 | 141 |
| Encapsulation | KL-G100S | Silica Fused (10% ~30%) | 60676-86-0 | 30.00% | 50.47 | 32.3 | 300000 | 151406 |
| | | Silicon dioxide(40%~60%) | 7631-86-9 | 52.50% | | | 525000 | 264961 |
| | | Epoxy resin.(2% ~10%) | N/A | 6.00% | | | 60000 | 30281 |
| | | Phenolic Resin(2% ~10%) | N/A | 6.00% | | | 60000 | 30281 |
| | | Carbon black(0.1%-1%) | 1333-86-4 | 0.50% | | | 5000 | 2523 |
| | | Flame Retardant(<5%) | N/A | 5.00% | | | 50000 | 25234 |
| Lead Plating Finish | Matte Tin | Tin | 7440-31-5 | 100.00% | 1.00 | 0.64 | 1000000 | 10000 |
| | | | | Total | 100.00 | 64.00 | | 1000000 |

Tolerance ±10%

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* The Silicon Chip is doped at atomic levels with trace amounts of elements that may include Phosphorus, Boron, Arsenic, and other elements. Metalization may include Titanium, Nickel, Aluminum, Silver or Gold These substances are not reported where their concentration is less than the minimum reportable level per the guidelines specified in the Tables o EIA JIG-101, *Material Composition Declaration for Electronic Products*.

This product or product family does not contain any of the following substances except as **CURRENTLY** exempted by ELV II and RoHS and reported above:

- Asbestos
- Antimony Compounds
- Azo compounds
- Cadmium and cadmium compounds
- Certain Shortchain Chlorinated Paraffins
- Chlorinated organic compounds
- Halogens
- Hexavalent chromium compounds
- Lead and lead compounds
- Mercury and mercury compounds
- Organic tin compounds
- Ozone Depleting Substances - Class I (CFCs, HBFCs, etc.)
- Ozone Depleting Substances - Class II (HCFCs)
- Perfluorooctane Sulphonate (PFOS) or related compounds
- Polybrominated biphenyls (PBB) and Polybrominated diphenyl ethers (PBDE) including DecaBDE
- Polychlorinated Biphenyls (PCBs)
- Polychlorinated Naphthalenes ( > 3 chlorine atoms)
- Radioactive Substances
- Tributyl Tin (TBT) and Triphenyl Tin (TPT)
- Tributyl Tin Oxide (TBTO)

REACH SVHCs:

- Anthracene
- 4,4'- Diaminodiphenylmethane
- Dibutyl phthalate
- Cyclododecane
- Cobalt dichloride
- Diarsenic pentaoxide
- Diarsenic trioxide
- Sodium dichromate, dihydrate
- 5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)
- Bis (2-ethyl(hexyl)phthalate) (DEHP)
- Hexabromocyclododecane (HBCDD)
- Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)
- Bis(tributyltin)oxide
- Lead hydrogen arsenate
- Triethyl arsenate
- Benzyl butyl phthalate

**RoHS Exemption 7a for Pb in High Temperature, High %Pb in Solder is applied**

**B2xx-p-F B3xxB-p-F**

**B2xx-p-F   B3xxB-p-F**

Part Number: **SMB OJ Devices**
Weight (mg): 93

p = package designator
DATE CODE LIMITED
See Data Sheet

| Element | Material Group | Materials | CAS (if applicable) | Average mass homogeneous Materal(%) | Percent of whole (%) | Mass (mg) | ppm Homogeneous Material | ppm overall |
|---|---|---|---|---|---|---|---|---|
| Chip | Silicon w/Metal | Doped Silicon* | 7440-21-3 | 98.90% | 4.95 | 4.6 | 989000 | 48918 |
| | | Ni | 7440-02-0 | 1.10% | | | 11000 | 544 |
| Solder Paste | RoHS Exempt High Temperature | Pb | 7439-92-1 | 92.50% | 2.51 | 2.33 | 925000 | 23175 |
| | | Sn | 7440-31-5 | 5.00% | | | 50000 | 1253 |
| | | Ag | 7440-22-4 | 2.50% | | | 25000 | 626 |
| Leadframe & Clip | Copper Alloy | Cu (99.95%) | 7440-50-8 | 99.95% | 43.53 | 40.48 | 999500 | 435051 |
| | | Zn (0.004%) | 7440-66-6 | 0.01% | | | 60 | 26 |
| | | Fe (0.01%) | 7439-89-6 | 0.01% | | | 100 | 44 |
| | | P (0.034%) | 7723-14-0 | 0.03% | | | 340 | 148 |
| Encapsulation | KL-G100S | Silica Fused (10% ~30%) | 60676-86-0 | 30.00% | 48.02 | 44.66 | 300000 | 144065 |
| | | Silicon dioxide(40%~60%) | 7631-86-9 | 52.50% | | | 525000 | 252113 |
| | | Epoxy resin.(2% ~10%) | N/A | 6.00% | | | 60000 | 28813 |
| | | Phenolic Resin(2% ~10%) | N/A | 6.00% | | | 60000 | 28813 |
| | | Carbon black(0.1%-1%) | 1333-86-4 | 0.50% | | | 5000 | 2401 |
| | | Flame Retardant(<5%) | N/A | 5.00% | | | 50000 | 24011 |
| Lead Plating Finish | Matte Tin | Tin | 7440-31-5 | 100.00% | 1.00 | 0.93 | 1000000 | 10000 |
| | | | | Total | 100.00 | 93.00 | | 1000000 |

Tolerance ±10%

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This product or product family does not contain any of the following substances except as **CURRENTLY** exempted by ELV II and RoHS and reported above:

Asbestos
Antimony Compounds
Azo compounds
Cadmium and cadmium compounds
Certain Shortchain Chlorinated Paraffins
Chlorinated organic compounds
Halogens
Hexavalent chromium compounds
Lead and lead compounds
Mercury and mercury compounds
Organic tin compounds
Ozone Depleting Substances - Class I (CFCs, HBFCs, etc.)
Ozone Depleting Substances - Class II (HCFCs)
Perfluorooctane Sulphonate (PFOS) or related compounds
Polybrominated biphenyls (PBB) and Polybrominated diphenyl ethers (PBDE) including DecaBDE
Polychlorinated Biphenyls (PCBs)
Polychlorinated Naphthalenes ( > 3 chlorine atoms)
Radioactive Substances
Tributyl Tin (TBT) and Triphenyl Tin (TPT)
Tributyl Tin Oxide (TBTO)

REACH SVHCs:
Anthracene
4,4'- Diaminodiphenylmethane
Dibutyl phthalate
Cyclododecane
Cobalt dichloride
Diarsenic pentaoxide
Diarsenic trioxide
Sodium dichromate, dihydrate
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)
Bis (2-ethyl(hexyl)phthalate) (DEHP)
Hexabromocyclododecane (HBCDD)
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)
Bis(tributyltin)oxide
Lead hydrogen arsenate
Triethyl arsenate
Benzyl butyl phthalate

**RoHS Exemption 7a for Pb in High Temperature, High %Pb in Solder is applied**

**B3xx-p-F   B5xxC-p-F**

Part Number: **SMC OJ Devices** p = package designator
Weight (mg): 210 DATE CODE LIMITED
See Data Sheet

| Element | Material Group | Materials | CAS (if applicable) | Average mass homogeneous Materal(%) | Percent of whole (%) | Mass (mg) | ppm Homogeneous Material | ppm overall |
|---|---|---|---|---|---|---|---|---|
| Chip | Silicon w/Metal | Doped Silicon* | 7440-21-3 | 98.90% | 4.95 | 10.4 | 989000 | 48979 |
| | | Ni | 7440-02-0 | 1.10% | | | 11000 | 545 |
| Solder Paste | RoHS Exempt High Temperature | Pb | 7439-92-1 | 92.50% | 2.00 | 4.2 | 925000 | 18500 |
| | | Sn | 7440-31-5 | 5.00% | | | 50000 | 1000 |
| | | Ag | 7440-22-4 | 2.50% | | | 25000 | 500 |
| Leadframe & Clip | Copper Alloy | Cu (99.95%) | 7440-50-8 | 99.95% | 42.05 | 88.3 | 999500 | 420266 |
| | | Zn (0.004%) | 7440-66-6 | 0.01% | | | 60 | 25 |
| | | Fe (0.01%) | 7439-89-6 | 0.01% | | | 100 | 42 |
| | | P (0.034%) | 7723-14-0 | 0.03% | | | 340 | 143 |
| Encapsulation | KL-G100S | Silica Fused (10% ~30%) | 60676-86-0 | 30.00% | 50.00 | 105 | 300000 | 150000 |
| | | Silicon dioxide(40%~60%) | 7631-86-9 | 52.50% | | | 525000 | 262500 |
| | | Epoxy resin.(2% ~10%) | N/A | 6.00% | | | 60000 | 30000 |
| | | Phenolic Resin(2% ~10%) | N/A | 6.00% | | | 60000 | 30000 |
| | | Carbon black(0.1%-1%) | 1333-86-4 | 0.50% | | | 5000 | 2500 |
| | | Flame Retardant(<5%) | N/A | 5.00% | | | 50000 | 25000 |
| Lead Plating Finish | Matte Tin | Tin | 7440-31-5 | 100.00% | 1.00 | 2.1 | 1000000 | 10000 |
| | | | | Total | 100.00 | 210.00 | | 1000000 |

Tolerance ±10%

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- 5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)
- Bis (2-ethyl(hexyl)phthalate) (DEHP)
- Hexabromocyclododecane (HBCDD)
- Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)
- Bis(tributyltin)oxide
- Lead hydrogen arsenate
- Triethyl arsenate
- Benzyl butyl phthalate

**RoHS Exemption 7a for Pb in High Temperature, High %Pb in Solder is applied**