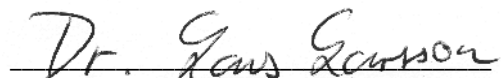


Statement concerning RoHS compliance of TRINAMIC ICs

We refer to the Directive 2011/65/EU of the European Parliament and the Council on the Restriction of the use of certain Hazardous Substances (RoHS) in electrical and electronic equipment and taking into account delegated directive (EU) 2015/868 of March 31, 2015.

That means, electrical and electronic equipment put on the market does not contain lead, mercury, cadmium, hexavalent chromium, polybromiated biphenyls (PBB) or polybromiated diphenyl ethers (PBDE), bis(2-ethylhexyl)phthalate (DEHP), benzylbutylphthalat (BBP), dibutylphthalat (DBP), diisobutylphthalat (DIBP) in terms of the RoHS Directive (2011/65/EU and (EU) 2015/868).

Hamburg, Feb. 11, 2019


Dr. Lars Larsson, COO



Supplier's Confirmation - Directive 2011/65/EU - IC

Version 3.4

11.02.2019

Please contact green@trinamic.com for further information

| Device | all date codes RoHS compliant | RoHS compliant since date code | mold compound | IPC/JEDEC J-STD-020 | Version | MSL | max. reflow temp. | Plating |
|-------------|-------------------------------|--------------------------------|---------------|---------------------|---------|--------|-------------------|---------------|
| TMC211-SA | No | 0517 (yyww) | Yes | Yes | B | 2 | 260°C * | Matte pure Sn |
| TMC222-LI | Yes | | Yes | Yes | B | 2 | 260°C * | Matte pure Sn |
| TMC222-SI | No | 0517 (yyww) | Yes | Yes | B | 2 | 260°C * | Matte pure Sn |
| TMC223-LI | Yes | | Yes | Yes | B | 2 | 260°C * | Matte pure Sn |
| TMC223-SI | Yes | | Yes | Yes | B | 2 | 260°C * | Matte pure Sn |
| TMC236A-PA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC236B-PA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC236-PA | No | 2105 (wwyy) | Yes | Yes | C | 3 | 240°C * | Matte pure Sn |
| TMC239A-LA | Yes | | Yes | Yes | C | 2/3 ** | 260°C | Matte pure Sn |
| TMC239A-SA | Yes | | Yes | Yes | C | 2 | 260°C | Matte pure Sn |
| TMC239-SA | No | 0505 (wwyy) | Yes | Yes | C | 2 | 260°C * | Matte pure Sn |
| TMC246A-PA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC246B-PA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC246-PA | No | 3004 (wwyy) | Yes | Yes | C | 3 | 240°C * | Matte pure Sn |
| TMC249A-LA | Yes | | Yes | Yes | C | 2/3 ** | 260°C | Matte pure Sn |
| TMC249A-SA | Yes | | Yes | Yes | C | 2 | 260°C | Matte pure Sn |
| TMC249-SA | No | 0505 (wwyy) | Yes | Yes | C | 2 | 260°C * | Matte pure Sn |
| TMC260-PA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC260A-PA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC261-PA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC262-LA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC331A-PC | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC389-LA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC401-PI | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC406 | No | discontinued | Yes | Yes | C | 3 | 225°C | |
| TMC406A | Yes | | Yes | Yes | B | 3 | 260°C | Matte pure Sn |
| TMC423 | No | 0610 (yyww) | Yes | Yes | B | 3 | 260°C * | Matte pure Sn |
| TMC424 | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC428-DI20 | No | 0518 (yyww) | Yes | Yes | C | 3 | 245°C * | Matte pure Sn |
| TMC428-I | No | 0424 (yyww) | Yes | Yes | C | 3 | 260°C * | Matte pure Sn |
| TMC428-PI24 | No | 0518 (yyww) | Yes | Yes | C | 3 | 250°C * | Matte pure Sn |
| TMC429-I | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC429-LI | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC429-PI | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC453 | No | discontinued | Yes | Yes | C | 3 | 225°C | |



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| | | | | | | | | |
|-----------|-----|--|-----|-----|---|---|-------|---------------|
| TMC454-BC | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC457-BC | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |

| Device | all date codes RoHS compliant | RoHS compliant since date code | mold compound | IPC/JEDEC J-STD-020 | Version | MSL | max. reflow temp. | Plating |
|-------------|-------------------------------|--------------------------------|---------------|---------------------|---------|-----|-------------------|---------------|
| TMC603-LA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC603A-LA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC2041-LA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC2100-LA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC2100-TA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC2130-LA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC2130-TA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC2160-TA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC2660-PA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC2208-LA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC2202-WA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC2224-LA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC4210-LA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC4361-LA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC4670-BI | Yes | | Yes | Yes | D | 3 | 260°C | - |
| TMC4671-ES | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC5062-LA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC5130A-TA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC5160-TA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC5160-WA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC5161-AA | Yes | | Yes | Yes | C | 3 | 260°C | Ni, Pd, Au |
| TMC5031-LA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC5041-LA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC5062-LA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC5072-LA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC6130-LA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC6200-TA | Yes | | Yes | Yes | C | 3 | 260°C | Matte pure Sn |
| TMC8460-BI | Yes | | Yes | Yes | C | 3 | 260°C | - |
| TMC8461-BA | Yes | | Yes | Yes | C | 3 | 260°C | - |
| TMC8462-BA | Yes | | Yes | Yes | C | 3 | 260°C | - |
| TMCC160-LC | Yes | | Yes | Yes | C | 3 | 260°C | NiAu |

*only valid to RoHS compliant devices

**since date code 1808 MSL3 => prior date codes MSL2