



Material Content Data Sheet



| Sales Product Name | | IPA65R190CFD | | Issued | | 4. March 2019 | | |
|---------------------------|--------------------|----------------|--------------------|----------------|------------------|---------------|--------------------|-----------|
| MA# | | MA001039164 | | | | | | |
| Package | | PG-TO220-3-111 | | Weight* | | 2235.56 mg | | |
| Construction Element | Material Group | Substances | CAS# if applicable | Weight [mg] | Average Mass [%] | Sum [%] | Average Mass [ppm] | Sum [ppm] |
| chip | inorganic material | silicon | 7440-21-3 | 9.459 | 0.42 | 0.42 | 4231 | 4231 |
| leadframe | inorganic material | phosphorus | 7723-14-0 | 0.206 | 0.01 | | 92 | |
| | non noble metal | iron | 7439-89-6 | 0.687 | 0.03 | | 307 | |
| | non noble metal | copper | 7440-50-8 | 686.221 | 30.70 | 30.74 | 306958 | 307357 |
| | non noble metal | aluminium | 7429-90-5 | 2.563 | 0.11 | 0.11 | 1146 | 1146 |
| wire | non noble metal | aluminium | 7429-90-5 | 2.563 | 0.11 | 0.11 | 1146 | 1146 |
| encapsulation | organic material | carbon black | 1333-86-4 | 2.245 | 0.10 | | 1004 | |
| | plastics | epoxy resin | - | 205.792 | 9.21 | | 92054 | |
| | inorganic material | silicondioxide | 60676-86-0 | 883.043 | 39.49 | 48.80 | 394997 | 488055 |
| leadfinish | non noble metal | tin | 7440-31-5 | 7.942 | 0.36 | 0.36 | 3552 | 3552 |
| plating | inorganic material | phosphorus | 7723-14-0 | 0.001 | 0.00 | | 1 | |
| | non noble metal | nickel | 7440-02-0 | 0.305 | 0.01 | 0.01 | 136 | 137 |
| solder | non noble metal | antimony | 7440-36-0 | 0.442 | 0.02 | | 198 | |
| | noble metal | silver | 7440-22-4 | 1.106 | 0.05 | | 495 | |
| | non noble metal | tin | 7440-31-5 | 2.876 | 0.13 | 0.20 | 1287 | 1980 |
| heatspreader | inorganic material | phosphorus | 7723-14-0 | 0.130 | 0.01 | | 58 | |
| | non noble metal | iron | 7439-89-6 | 0.433 | 0.02 | | 194 | |
| | non noble metal | copper | 7440-50-8 | 432.110 | 19.33 | 19.36 | 193290 | 193542 |
| *deviation | < 10% | | Sum in total: | | | 100.00 | | 1000000 |

Important Remarks:

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3. All statements are based on our present knowledge, are provided 'as is' and may be subject to change at any time due to technical requirements and development without notification.

This product is in compliance with EU Directive 2015/863/EU amending Annex II to EU Directive 2011/65/EU (RoHS) and does not use any exemption

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