




| Product         |               |   |           |                  |
|-----------------|---------------|---|-----------|------------------|
| Mfr Item Number | Mfr Item Name | Version   | Mfr Site  | Date             |
| STM32L052C8T7   | S45B*417XXXX  | A   | 998Z      | 2018-09-04       |
|                 | Amount        | UoM   | Unit type | ST ECOPACK Grade |
|                 | 190.98        | mg  | Each      | ECOPACK® 2       |
|                 | Comment       | ECOPACK® 2 is STMicroelectronics trade name for ROHS compliant device without Brominated and Chlorinated compound (900ppm) and without Antimony oxide flame retardant ( in each organic material) |           |                  |

| Manufacturing information              |                     |                      |         |   |
|--|---------------------|----------------------|---------|---|
| J-STD-020 MSL Rating                   | Classification Temp | Nbr of Reflow Cycles |         | <br>life.augmented |
| 3                                      | 260                 | 3                    |         |   |
| bulk Solder Termination                | Terminal Plating    | Terminal Base Alloy  | Comment |   |
| able; if coating is used or other bulk | Tin (Sn), matte     | Copper Alloy         |         |   |

| Package Designator | Size                                   | Nbr of instances | Shape  |  |
|--------------------|--|------------------|--------|--|
| QFP                | 7X7X1.4                                | 48               | L Bend |  |
| Comment            | Package : 5B LQFP 48 7x7x1.4 1 0110596 |                  |        |  |

| QueryList : RoHS Directive 2011/65/EU-July 2011 – Annex II amended by Directive 2015/863-April 2015  |             |
|--|-------------|
| Query  | Response    |
| 1 - Product(s) meets EU RoHS requirement without any exemptions  | TRUE        |
| 2 - Product(s) meets EU RoHS requirements except lead in solder and this usage may qualify under the lead in solder '7b' exemption (other selected exemptions may apply) | FALSE       |
| 3 - Product(s) meets EU RoHS requirements by application of the selected exemption(s)  | FALSE       |
| 4 - Product(s) does not meet EU RoHS requirements and is not under exemptions  | FALSE       |
| Exemption Id.  | Description |
|  |             |

| QueryList : REACH-12th January 2017  |                         |                        |             |                |
|--|-------------------------|------------------------|-------------|----------------|
| Query  |                         |                        |             | Response       |
| 1 - Product(s) does not contain REACH Substances Of Very High Concern above the limits per the definition within REACH |                         |                        |             | TRUE           |
| CategoryLevel_Name   | CategoryLevel_Threshold | amount in product (mg) | Application | ppm in product |
|  |                         |                        |             |                |

| Material Composition Declaration :   |                                 |         |     |          |                    | Mfr Item Name               | S45B*417XXX |        |        |     | 5999999.0                                   | 0.0                            |
|--|---------------------------------|---------|-----|----------|--------------------|-----------------------------|-------------|--------|--------|-----|---|--------------------------------|
| note : Substance present with less 0.001mg will not be declared in this document |                                 |         |     |          |                    |                             |             |        |        |     |   |                                |
| Homogeneous Material   | Material Group                  | Mass    | UoM | Level    | Substance Category | Substance                   | CAS         | Exempt | Mass   | UoM | Concentration in homogeneous material (ppm) | Concentration in product (ppm) |
| Die or dies  | M-011 Other inorganic materials | 4.860   | mg  | supplier | die                | Silicon (Si)                | 7440-21-3   |        | 4.709  | mg  | 968930                                      | 24657                          |
|  |                                 |         |     | supplier | metallization      | Aluminium (Al)              | 7429-90-5   |        | 0.013  | mg  | 2675  | 68                             |
|  |                                 |         |     | supplier | metallization      | Copper (Cu)                 | 7440-50-8   |        | 0.044  | mg  | 9053  | 230                            |
|  |                                 |         |     | supplier | metallization      | Tantalum (Ta)               | 7440-25-7   |        | 0.005  | mg  | 1029  | 26                             |
|  |                                 |         |     | supplier | metallization      | Titanium (Ti)               | 7440-32-6   |        | 0.007  | mg  | 1440  | 37                             |
|  |                                 |         |     | supplier | Passivation        | Silicon Nitride             | 12033-89-5  |        | 0.012  | mg  | 2469  | 63                             |
|  |                                 |         |     | supplier | Passivation        | Silicon Oxide               | 7631-86-9   |        | 0.070  | mg  | 14403                                       | 367                            |
| Die Attach Epoxy_ABLEBOND 3230_H   | M-011 Other inorganic materials | 1.278   | mg  | Supplier | Metals             | Silver                      | 7440-22-4   |        | 1.151  | mg  | 901000                                      | 6028                           |
|  |                                 |         |     | Supplier | Plastics/polymers  | Highly cross-linked polymer | Proprietary |        | 0.126  | mg  | 99000                                       | 662                            |
| Mold Compound_EME-G631SHQ_Surf   | M-011 Other inorganic materials | 120.458 | mg  | Supplier | Plastics/polymers  | Epoxy Resin A               | Proprietary |        | 2.434  | mg  | 21000                                       | 13406                          |
|  |                                 |         |     | Supplier | Plastics/polymers  | Epoxy Resin B               | Proprietary |        | 2.434  | mg  | 21000                                       | 13406                          |
|  |                                 |         |     | Supplier | Plastics/polymers  | Phenol Resin                | Proprietary |        | 6.492  | mg  | 56000                                       | 35750                          |
|  |                                 |         |     | Supplier | Glass              | Silica(Amorphous)A          | 60676-86-0  |        | 95.006 | mg  | 780450                                      | -526870                        |
|  |                                 |         |     | Supplier | Glass              | Silica(Amorphous)B          | 7631-86-9   |        | 13.369 | mg  | 115320                                      | 73619                          |
|  |                                 |         |     | Supplier | Non-metals         | Carbon Black                | 1333-86-4   |        | 0.722  | mg  | 6230  | 3977                           |
| Wire_Ag Si Type_MKE  | Bonding Wire                    | 0.309   | mg  | Supplier | Metals             | Silver                      | 7440-22-4   |        | 0.297  | mg  | 960000                                      | 1634                           |
|  |                                 |         |     | Supplier | Others             | Others                      | Proprietary |        | 0.012  | mg  | 40000                                       | 68                             |
| Plating anode_Pure Tin_Nuo Nengda  | M-011 Other inorganic materials | 1.078   | mg  | Supplier | Metals             | Tin                         | 7440-31-5   |        | 1.078  | mg  | 1000000                                     | 5939                           |
| Leadframe_C194+Ag_HDS  | Copper & its alloys             | 63.000  | mg  | Supplier | Metals             | Iron                        | 7439-89-6   |        | 1.377  | mg  | 21865                                       | 7586                           |
|  |                                 |         |     | Supplier | Non-metals         | Phosphorus                  | 7723-14-0   |        | 0.046  | mg  | 730   | 253                            |
|  |                                 |         |     | Supplier | Metals             | Zinc                        | 7440-66-6   |        | 0.071  | mg  | 1125  | 390                            |
|  |                                 |         |     | Supplier | Metals             | Copper                      | 7440-50-8   |        | 57.534 | mg  | 913235                                      | 316831                         |
|  |                                 |         |     | Supplier | Metals             | Silver                      | 7440-22-4   |        | 3.969  | mg  | 63000                                       | 21857                          |
|  |                                 |         |     | JIG-R    | Metals             | Lead                        | 7439-92-1   |        | 0.003  | mg  | 45  | 16                             |