

**ON Semiconductor** 10/15/2019

|                       |                                |                          |                |
|-----------------------|--------------------------------|--------------------------|----------------|
| <b>Base Part</b>      | <b>ASX340AT</b>                | <b>HF</b>                | <b>Pb-free</b> |
| <b>Orderable Part</b> | <b>ASX340AT2C00XPED0-DRBR1</b> | <b>Total weight (mg)</b> | <b>108.93</b>  |

| Homogenous Material              | Weight (mg) | Substance in Mat.  | CAS #       | % Avg. Weight |
|----------------------------------|-------------|--|-------------|---------------|
| <b>Die</b>                       | 23.9        | Misc.  | n/a         | 0.38          |
|                                  |             | Silicon (Si)   | 7440-21-3   | 98.63         |
|                                  |             | Aluminum (Al)  | 7429-90-5   | 0.99          |
| <b>Die Attach</b>                | 2.2         | Bisphenol A_Epichlorohydrin polymer                                | 25068-38-6  | 37.5          |
|                                  |             | Ethylene Glycol  | 107-21-1    | 1             |
|                                  |             | Sulfonium (Thiodi-4,1-phenylene)                                   | 89452-37-9  | 3             |
|                                  |             | Modified Silicon Dioxide (SiO2)                                    | 67762-90-7  | 21            |
|                                  |             | Formaldehyde Polymer   | 9003-36-5   | 37.5          |
|                                  |             |  |             |               |
| <b>Imaging Lens</b>              | 29.31       | Titanium Dioxide (TiO2)  | 13463-67-7  | 5.263         |
|                                  |             | Sodium Monoxide (Na2O)   | 1313-59-3   | 5.263         |
|                                  |             | Zinc Monoxide (ZnO)  | 1314-13-2   | 5.263         |
|                                  |             | Antimony Trioxide (Sb2O3)  | 1309-64-4   | 0.527         |
|                                  |             | Aluminum Trioxide (Al2O3)  | 1344-28-1   | 5.263         |
|                                  |             | Potassium Monoxide (K2O)   | 12136-45-7  | 5.263         |
|                                  |             | Silica Crystalline (SiO2)  | 14808-60-7  | 73.158        |
|                                  |             |  |             |               |
| <b>Lid Attach</b>                | 1.52        | 2-phenoxy ethyl acrylat  | 48145-04-6  | 45            |
|                                  |             | Bisphenol A_Epichlorohydrin polymer                                | 25068-38-6  | 20            |
|                                  |             | Epoxy Prepolymer   | n/a         | 12.5          |
|                                  |             | Acrylate Oligomer  | n/a         | 0.5           |
|                                  |             | Curative   | n/a         | 2             |
|                                  |             | Formaldehyde Polymer   | 9003-36-5   | 20            |
| <b>Mold Compound-Black</b>       | 8.1         | Phenolic Resin   | n/a         | 15            |
|                                  |             | Oxirane  | 39817-09-09 | 15            |
|                                  |             | 1,4-Butanediol Diglycidyl Ether (DGE)                              | 2425-79-8   | 3             |
|                                  |             | Carbon Black (C)   | 1333-86-4   | 1             |
|                                  |             | Fused Silica (SiO2)  | 60676-86-0  | 64            |
|                                  |             | Silica Crystalline (SiO2)  | 14808-60-7  | 2             |
| <b>Solder Ball</b>               | 24.55       | Silver (Ag)  | 7440-22-4   | 3             |
|                                  |             | Tin (Sn)   | 7440-31-5   | 96.5          |
|                                  |             | Copper (Cu)  | 7440-50-8   | 0.5           |
| <b>Substrate and Solder Mask</b> | 19.1        | Bis(3-ethyl-5-methyl-4-maleimidophenyl)methane                     | 105391-33-1 | 1.12          |
|                                  |             | Fiber Glass (SiO2)   | 65997-17-3  | 12.96         |
|                                  |             | Zinc (Zn)  | 7440-66-6   | 0.15          |
|                                  |             | Inorganic Filler of Solder Mask_Talc (Mg3Si4O10(OH)2)              | 14807-96-6  | 2.33          |
|                                  |             | Cyanic acid (1-methylethylidene)di-4,1-phenylene ester homopolymer | 25722-66-1  | 1.12          |
|                                  |             | Silica Amorphous (SiO2)  | 7631-86-9   | 0.58          |
|                                  |             | Chromium (Cr)  | 7440-47-3   | 0.01          |
|                                  |             | Acetophenone Derivative  | n/a         | 3.49          |
|                                  |             | Carbon Black (C)   | 1333-86-4   | 0.58          |
|                                  |             | 2,4-Diethyl-9H-thioxanthen-9-one (DETX)                            | 82799-44-8  | 0.58          |
|                                  |             | Aluminum Hydroxide (Al(OH)3)                                       | 21645-51-2  | 12            |
|                                  |             | Nickel (Ni)  | 7440-02-0   | 1.41          |
|                                  |             | Gold (Au)  | 7440-57-5   | 0.05          |
|                                  |             | Solvent Naphtha (Solvent oil)                                      | 64742-94-5  | 6.99          |
|                                  |             | Formaldehyde Polymer   | 9003-36-5   | 1.12          |
|                                  |             | Copper (Cu)  | 7440-50-8   | 37.46         |
|                                  |             | Barium Sulfate (BaSO4)   | 7727-43-7   | 18.05         |
|                                  |             | <b>Wire Bond - Au</b>  | <b>0.25</b> | Gold (Au)     |

**Materials Disclosure Disclaimer:** Even though all possible efforts have been made to provide you with the most accurate information, we cannot guarantee to its accuracy since the data has been compiled based on the ranges provided, and some information provided by the subcontractors and raw material suppliers may have been withheld to protect their business proprietary information. Thus this information is provided only as estimates, and do not include trace levels fo dopants and metal materials contained within silicon devices in the finished products. There is no intentional use of Mercury, Hexavalent Chromium, Cadmium, PBB or PBDE (5 of the 6 RoHS banned substances) in this or any of our other products. For further explanation on material composition calculations, please view our Product Chemical Content Brochure at:

<http://www.onsemi.com/pub/Collateral/BRD8022-D.PDF>