

# VSC7155VU/XVU-02 First Level Product Qualification Report

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**Manufacturer:** Vitesse  
**Device Type:** VSC7155-02 Rev A  
**Fab:** TSMC  
**Assembler:** AMKOR, ATK4  
**Test Location:** Camarillo, CA  
**Process:** 0.13 $\mu$ m LV-OD  
**Package Type:** TEPBGA

## 1.0 Package

|                                 |  |
|---------------------------------|--|
| 1.1 Package Type                | TEPBGA                                     |
| 1.2 Body Size                   | 23x23x2.33 mm                              |
| 1.3 Ball Pitch                  | 1.00 mm                                    |
| 1.4 Pin/Lead Count              | 448  |
| 1.5 Cavity Up/Down              | Up   |
| 1.6 Substrate P/N               | SID # 101338732                            |
| 1.7 Heat Spreader Epoxy         | Ablestik 2000T                             |
| 1.8 Heat Spreader P/N           | Sid #101322984                             |
| 1.9 Die Attach Epoxy            | Ablestik 2300, Conductive                  |
| 1.10 Bond Wire Material         | Au   |
| 1.11 Bond Wire Dia.             | 1.0 mil                                    |
| 1.12 Fill Material              | Sumitomo G770                              |
| 1.13 Solder Ball Material       | 96.5Sn/3Ag/0.5Cu for XVU, 63Sn/37Pb for VU |
| 1.14 Solder Ball Diameter       | 0.63+0.07/-0.13 mm                         |
| 1.15 Moisture Sensitivity Level | MSL3                                       |

## 2.0 Wafer/Die

|                            |                      |
|----------------------------|----------------------|
| 2.1 Technology             | 0.13 $\mu$ m LV-OD   |
| 2.2 Die Dimensions         | 1121.6x733.6 $\mu$ m |
| 2.3 Metallization Material | Cu                   |
| 2.4 Metallization Layers   | 9                    |
| 2.5 Dielectric Material    | FSG                  |
| 2.6 Passivation Material   | Dual Passivation     |

## 3.0 Qualification Results

| <u>Test</u>                         | <u>Conditions</u>                        | <u>Quantity</u> | <u>Results</u> | <u>Notes</u> |
|-------------------------------------|--|-----------------|----------------|--------------|
| 3.1 ESD HBM                         | JESD22-A114, +/-1500V                    | 3               | All Pass       | A            |
| 3.2 ESD CDM                         | JESD22-C101, +/-100V                     | 2               | All Pass       | A            |
| 3.3 Latch-up                        | JESD78                                   | 6               | All Pass       | A            |
| 3.4 High Temperature Operating Life | MS883, Method 1005, Tj=140°C, 1000 hours | 45              | All Pass       | A            |

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|                               |                                       |    |          |   |
|-------------------------------|---------------------------------------|----|----------|---|
| 3.5 Temperature Cycle         | JESD22-A104, Cond B, 1000 cycles      | 45 | All Pass | B |
| 3.6 Temperature Humidity Bias | JESD22-A101, 85°C/85%R.H., 1008 hours | 45 | All Pass | B |
| 3.7 High Temperature Storage  | JESD22-A10, 150°C, 1008 hours         | 45 | All Pass | B |

Notes:

A Qual by similarity to VSC7153SS-02

B Qual by similarity to VSC7280XVS

#### 4.0 Reliability Data

The reliability results are documented in "*TSMC 0.13 μm LVOD Process Reliability Report*", Report Number: VQUR-00242