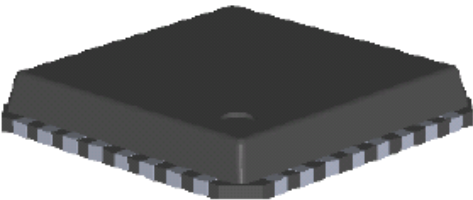
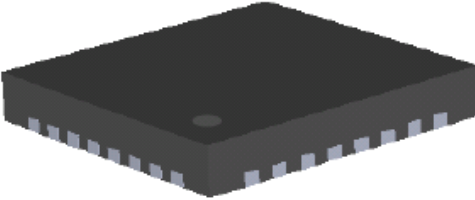


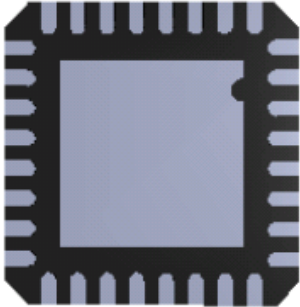
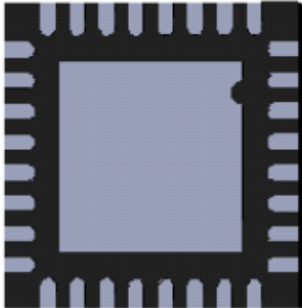


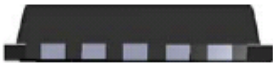
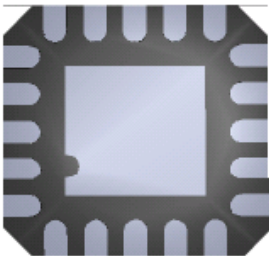
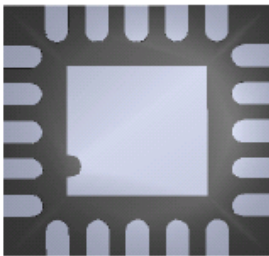
Bill of Materials

| Package | Body Size | Material | Amkor | ASE-Korea | Remarks |
|---------|-----------|---------------|---------------|-------------------|---------|
| LFCSP | 7x7 mm | Die Attach | Ablestik 8290 | Hitachi EN-4900GC | |
| | | Wire | 1.0 mil | 0.8/1.0 mil | |
| | 5x5 mm | Mold Compound | Sumitomo G700 | Sumitomo G700 | Same |
| | | Leadframe | C194 | C194 | Same |
| | 4x4 mm | Die Attach | Ablestik 8290 | Ablestik 8290 | Same |
| | | Wire | 1.0 mil | 0.8/1.0 mil | |
| | | Mold Compound | Sumitomo G700 | Sumitomo G700 | Same |
| | | Leadframe | C194 | C194 | Same |

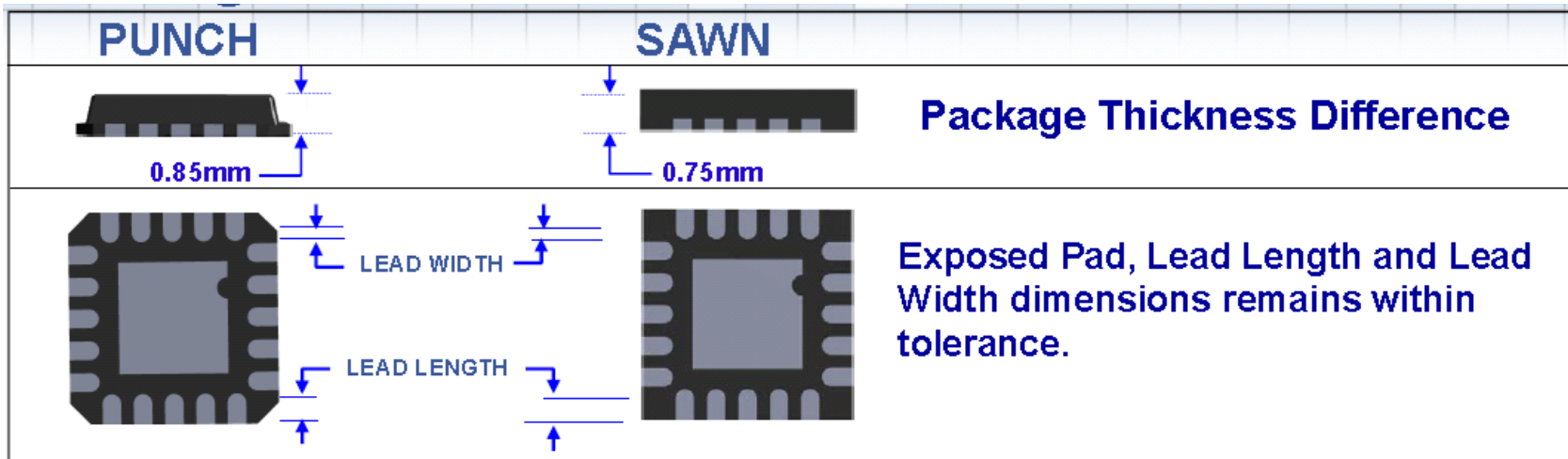
Package Outline (Punch and Sawn LFCSP)

| COMPARISON | CURRENT | NEW | REMARKS |
|-------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| Package | Punch | Sawn | |
| Figure |  |  | Punch has flange edges. Sawn has sharp square edges. |
| Thickness | 0.85 mm (Nom.)  | 0.75 mm (Nom.)  | Sawn is Thinner |
| Foot Print |  |  | Lead width and length dimensions and tolerances are the same. |

Bill of Material and Package Configuration

| Material | FROM | TO | Remarks |
|----------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------|
| | Amkor - Korea | Amkor - Philippines | |
| Die Attach | Ablestik 8290 | Ablestik 8290 | Same |
| Wire | Au | Au | Same |
| Mold Compound | Sumitomo G700 | Sumitomo G700 | Same |
| Leadframe | C194 | C194 | Same |
| Package: Side |  |  | Punch: Flange Sawn: Square |
| Top |  |  | Sawn: • Pin 1 is Laser Marked • Square Edge |
| Bottom |  |  | Same Foot Print |

Package Dimensions



| Body Size (mm) | Lead Count | Lead Pitch (mm) | Punch LFCSP POD | Sawn LFCSP POD | Exposed Pad Size (mm) |
|----------------|------------|-----------------|---------------------|----------------|-----------------------|
| 4 x 4 | 16 | 0.65 | CP 16-16 | CP 16-34 | 1.8 x 1.8 |
| | | | CP 16-4 | CP 16-23 | 2.3 x 2.3 |
| | | | CP 16-10 | CP 16-20 | 2.35 x 2.35 |
| | | | CP 16-13 | CP 16-26 | 2.5 x 2.5 |
| | 20 | 0.5 | CP 20-1 | CP 20-6 | 2.1 x 2.1 |
| | | | CP 20-3 | CP 20-7 | 2.3 x 2.3 |
| | | | CP 20-4 | CP 20-10 | 2.5 x 2.5 |
| | 24 | 0.5 | CP 24-1 | CP 24-10 | 2.1 x 2.1 |
| | | | CP 24-13 CP 24-2 | CP 24-14 | 2.3 x 2.3 |
| | | | CP 24-3 | CP 24-7 | 2.5 x 2.5 |

Reliability Qualification Results of 4x4 sawn LFCSP package at ATP

| QUALIFICATION RESULTS | | | |
|----------------------------------------|----------------------------|-------------|---------|
| TEST | CONDITIONS | SAMPLE SIZE | RESULTS |
| Highly Accelerated Stress Test (HAST)* | JEDEC <i>JESD22-A110</i> | 3 x 77 | Pass |
| Temperature Cycle (TC)* | JEDEC <i>JESD22-A104</i> | 3 x 77 | Pass |
| Autoclave (AC)* | JEDEC <i>JESD22-A102</i> | 3 x 77 | Pass |
| Solder Heat Resistance (SHR)* | <i>JEDEC/IPC J-STD-020</i> | 3 x 11 | Pass |

*These samples were subjected to preconditioning (per J-STD-020 Level 3) prior to the start of the stress test. Level 1 preconditioning consists of the following: Bake: 24 hrs @ 125°C, Soak: Unbiased Soak: 192 hrs @ 30°C, 60%RH, Reflow: 3 passes through an oven with a peak temperature of 260°C.