

**Bump Site Transfer and Qualification of Select 6L and 8L SOT23
Flip Chip on Lead Packages**

**Automotive Qualification Plan Summary for
6-SOT_23 at CARSEM**

| TEST | SPECIFICATION | SAMPLE SIZE | EXPECTED COMPLETION DATE |
|--|-------------------------------|-------------|--------------------------|
| Temperature Cycle (TC)* | JEDEC <i>JESD22-A104</i> | 3 x 77 | Sept 2018 |
| Solder Heat Resistance (SHR)* | JEDEC/IPC <i>J-STD-020</i> | 3 x 11 | Sept 2018 |
| High Temperature Storage Test (HTS) | JEDEC <i>JESD22-A103</i> | 1 x 77 | Sept 2018 |
| Temperature, Humidity and Bias Test (THB)* | JEDEC <i>JESD22-A101</i> | 3 x 77 | Sept 2018 |
| Unbiased Highly Accelerated Stress Test (UHAST)* | JEDEC <i>JESD22-A118</i> | 3 x 77 | Sept 2018 |
| Electrostatic Discharge <i>Field Induced Charge Device Model</i> | ANSI/ESDA/JEDEC <i>JS-002</i> | 3/voltage | Sept 2018 |

* These samples will be subjected to preconditioning (per J-STD-020 Level 3) prior to the start of the stress test. Level 3 preconditioning consists of the following: 1. Bake – 24 hours at 125°C; 2. Soak – unbiased soak for 192 hours at 30°C, 60%RH; 3. Reflow – three passes through a reflow oven with a peak temperature of 260°C. TC samples will be subjected to wire-pull test after 500 cycles where results should be within specification limits.

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| Temperature, Humidity and Bias Test (THB)* | JEDEC <i>JESD22-A101</i> | 3 x 77 | Sept 2018 |
| High Temperature Storage (HTS) | JEDEC <i>JESD22-A103</i> | 1 x 77 | Sept 2018 |
| Electrostatic Discharge <i>Field Induced Charge Device Model</i> | ANSI/ESDA/JEDEC <i>JS-002-2014</i> | 3/voltage | Sept 2018 |

* Preconditioned per JEDEEC/IPC J-STD0020.

**Bump Change from High Lead at Amkor Taiwan to Cu Pillar at Chip Bond and
Qual of SOT23 Flip Chip on Lead using Cu Pillar at Carsem**

**Qualification Results Summary for
SOT at CARSEM**

| TEST | SPECIFICATION | SAMPLE SIZE | RESULT |
|--|---|----------------|-----------------|
| Temperature Cycle (TC)* | JEDEC <i>JESD22-A104</i> | 3 x 77 | PASS |
| Solder Heat Resistance (SHR)* | JEDEC/IPC <i>J-STD-020</i> | 3 x 11 | PASS |
| Temperature, Humidity and Bias Test (THB)* | JEDEC <i>JESD22-A101</i> | 3 x 77 | PASS |
| High Temperature Storage (HTS) | JEDEC <i>JESD22-A103</i> | 1 x 77 | PASS |
| Electrostatic Discharge <i>Field Induced Charge Device Model</i> | ANSI/ESDA/JEDEC <i>JS- 002-2014</i> | 3/voltage | PASS +/1250V |

* Preconditioned per JEDEEC/IPC J-STD0020.

