# SEMICONDUCTOR MARKET SOLUTIONS

## BGA/CSP

### DIE ATTACH: NON-CONDUCTIVE

| PRODUCT | DESCRIPTION | MRT | ELECTRICAL CONDUCTIVITY | DISPENSABILITY | CURE SCHEDULE | THERMAL CONDUCTIVITY, W/mK |
|---|---|---|---|---|---|---|
| QMI536NB™ | High JEDEC performance for first die and die-to-die bonding. Non-conductive and non-damaging to the die face. Can be cured as low as 80°C. No bleed. | L1 - 260 | 1 x $10^{13}$ | Excellent | ≥10 sec @ 150°C (*Skip*Cure™) 30 min @ 150°C (Oven) | 0.3 |
| QMI5200™ (Film) | Non-conductive 2-in-1 dicing die attach film with good bondline thickness control. Will not bleed and does not require cure prior to wirebonding. Film thickness is 20 microns. | L2 - 260 | Non-Conductive | NA | NA | <0.2 |
| 2025Dsi™ | Non-conductive low bleed adhesive. | L2 - 260 | NA | Good | 30 min ramp to 175°C + 15 min @ 175°C | 0.4 |
| 2053S™ | Low stress adhesive for die-to-substrate applications. | L2 - 260 | NA | Good | 30 min ramp to 175°C + 15 min @ 175°C | NA |
| AAA-3320™ | Self-filleting™ adhesive for same die stacking applications that require 100% coverage. | NA | 1 x $10^{13}$ | Fair | 30 min @ 150°C | 0.3 |
| AAA-3300™ | Self-filleting™ low modulus adhesive for attaching large thin die on thin organic substrates. | NA | 1 x $10^{13}$ | Fair | 30 min @ 150°C | 0.3 |
| ATB-S100™ (Film) | Single layer adhesive film for mother/daughter die stacking applications. Co-curable with molding process. | L2 - 260 | NA | NA | 30 min @ 100°C + 30 min @ 125°C | NA |
| ATB-120T™ (Film) | Single layer adhesive film for die to die or die to substrate stacking applications. | L2 - 260 | NA | NA | 1 hour @ 100°C + 1 hour @ 150°C | NA |

### ENCAPSULANTS: DAM

| PRODUCT | DESCRIPTION | RECOMMENDED CURE | VISCOSITY, cPs | Tg, °C | $CTE_{a1}$, ppm/°C | % FILLER |
|---|---|---|---|---|---|---|
| FP4451™ | Industry standard damming material for BGAs. | 30 min @ 125°C + 90 min @ 165°C | 900,000 | 145 | 24 | 72 |
| FP4451TD™ | Tall dam version of FP4451™ for applications requiring a taller, narrower dam. Ionically cleaner also. | 30 min @ 125°C + 90 min @ 165°C | 300,000 | 150 | 21 | 73 |

### ENCAPSULANTS: FILL

| PRODUCT | DESCRIPTION | RECOMMENDED CURE | FLOW SPEED | VISCOSITY @ 25°C, cPs | Tg, °C | $CTE_{a1}$, ppm/°C | % FILLER |
|---|---|---|---|---|---|---|---|
| CB0260™ | High adhesion version of FP4450™ for 260°C L3 JEDEC performance. | 1 hr @ 110°C + 2 hrs @ 160°C | High | 40,000 | 145 | 18 | 74 |
| CB0260-1™ | High adhesion version of FP4450™ for 260°C L2A JEDEC performance. | 30 min @ 125°C + 90 min @ 165°C | High | 40,000 | 149 | 18 | 74 |
| FP4450™ | Industry standard fill material for dam and fill or cavity down BGAs. | 30 min @ 125°C + 90 min @ 165°C | Medium | 50,000 | 155 | 22 | 73 |
| FP4450HF™ | High flow version of FP4450LV™ using synthetic filler for use in fine wire and low alpha application. | 30 min @ 125°C + 90 min @ 165°C | Very High | 32,000 | 160 | 19 | 73 |
| FP4450LV™ | Low viscosity version of FP4450™ incorporating cleaner resins. | 30 min @ 125°C + 90 min @ 165°C | High | 35,000 | 155 | 22 | 72 |
| FP4470™ | High adhesion version of FP4450™ for 260°C L3 JEDEC performance. | 30 min @ 125°C + 90 min @ 165°C | High | 48,000 | 148 | 18 | 75 |