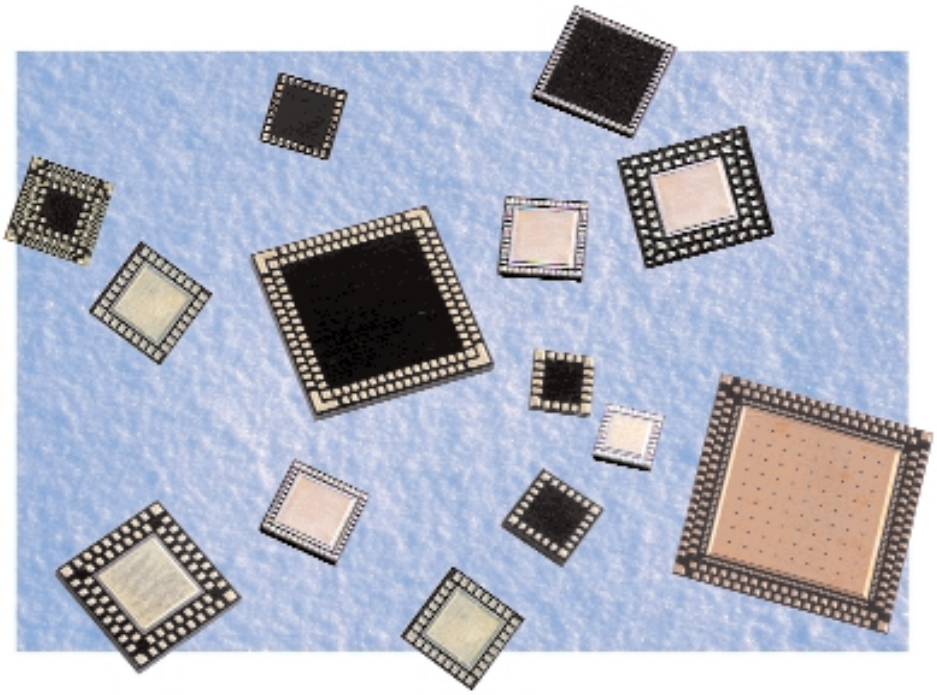
BCC and BCC++

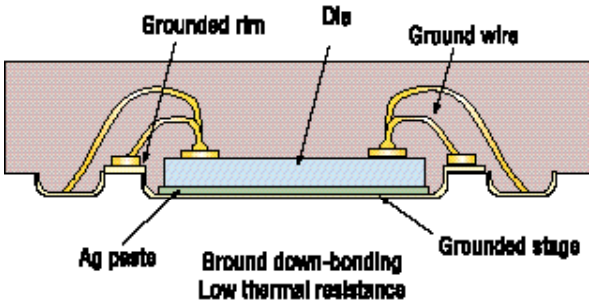
The size and performance characteristics of Bump Chip Carrier (BCC) package make it well suited for RF devices, wide area networks, and DWDM systems. BCC is a molded, wire-bonded, leadless Chip Scale Package, and has terminals that are thinly plated on top of the resin bumps. This technology results in a very thin package of only 0.6 mm in height. The die pads are directly connected to the bumped terminals via wire bonds. It does not require leadframes or interposers. The end result is the package area and mounting volumes are considerably less than comparable packages. There is 40% less mounting area and 67% less mounting volume compared to SSOP. A reduced signal path provides excellent electrical performance. BCC++ has a center pad, or separate ground plane, and uses conductive silver paste epoxy to add further improved electrical and thermal performance that can transmit up to 10 Gbps of data. BCC and BCC++ have very small form factors with body sizes ranging from 3.4 x 4.55 mm to 10.2 x 10.2 mm. They are lead-free and BCC is JEDEC MSL-1, and BCC++ is JEDEC MSL-2 compatible at 260°C. Multi-chip and stacked die configurations are available for a variety of devices such as Si, Si/Ge, and Ga/As.



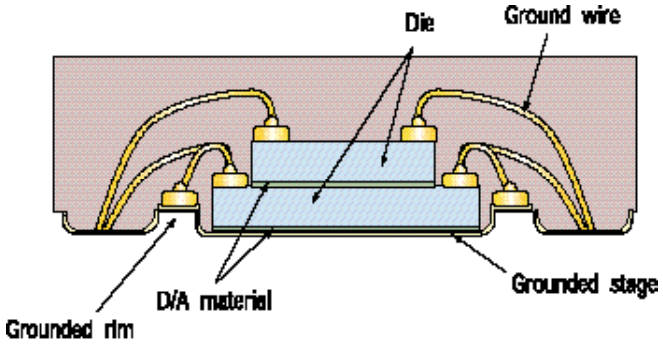
- Low profile near chip size
- Lead-free
- Optimum RF and high frequency signal integrity up to 10 Gbps
- Rugged, reliable, and ease of mountability
- Bundled ground connection allows for more features per I/O count
- Excellent thermal performance
- Available in many standard configurations
- Flexible for specific wireless applications
- Largest die to package ratio in available RF CSP

BCC and BCC++

BCC++



BCC++ Stacked



Standard Package Line-up

Package Type	Body Size (mm)	Pin Count
BCC16N	3.4 x 4.55 x 0.8	16
BCC16W	4.2 x 4.55 x 0.8	16
BCC20	3.4 x 3.6 x 0.8	20
BCC20	3.4 x 3.6 x 0.6	20
BCC24	4.0 x 4.0 x 0.8	24
BCC24++	4.0 x 4.0 x 0.8	24
BCC32	5.0 x 5.0 x 0.8	32
BC32++	5.0 x 5.0 x 0.8	32
BCC48	7.0 x 7.0 x 0.8	48
BCC48++	7.0 x 7.0 x 0.8	48
BCC64	9.0 x 9.0 x 0.8	64
BCC64++	9.0 x 9.0 x 0.8	64
BCC64s++	7.0 x 7.0 x 0.8	64
BCC80s	8.0 x 8.0 x 0.5	80
BCC92s	9.0 x 9.0 x 0.8	92
BCC100s	10.0 x 10.0 x 0.8	100
BCC128s	12.0 x 12.0 x 0.8	128
BCC148s	14.0 x 14.0 x 0.8	148
BCC148++s	14.0 x 14.0 x 0.8	148

Custom configurations are available upon request.

BCC and BCC++

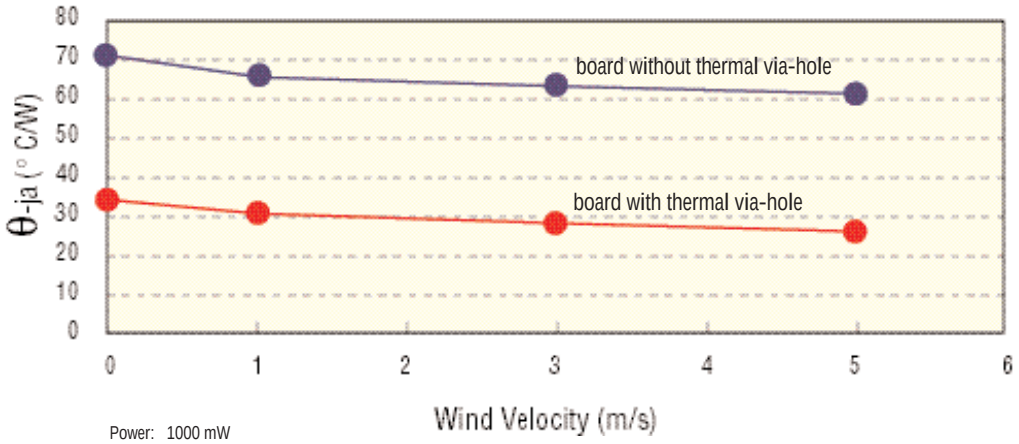
Package Reliability (BCC 32++)

Test Item	Condition	Criteria	Result
Temperature cycle*	-65° ~ 150°C	1000 cycles	Pass
HTS	150°C	3000 hours	Pass
HTSB	100°C, 3.6V*	1000 hours	Pass
THB	85°C/85%RH, AC3.6V, 1 MHz/2 MHz	3000 hours	Pass
TS	0 ~ 100°C	500 cycles	Pass
PCT	121°C, 100%RH, 2 atm*	504 hours	Pass
PCTB	121°C, 100%RH, 2 atm, 3.6V	144 hours	Pass

JEDEC Level 1 Classified: BCC16 (N), BCC16 (W), BCC20 (N2), BCC32, BCC48
* Pre-conditioning: Pre-bake @ (125°C/24 hours) +85°C/85%RH 168 hours + 3 x IR reflow (245°C peak)

JEDEC Level 2 Classified: BCC32++
* Pre-conditioning: Pre-bake @ (125°C/24 hours) +85°C/60%RH 168 hours + 3 x IR reflow (245°C peak)

Thermal Performance (BCC32++)



Power: 1000 mW
PCB: FR-4 (117 X 84 X t0.8 mm)
Via hole: 16 points - 0.25 mmD

Electrical Characteristics (BCC 32++)

	Min	Max
Self inductance (nH)	0.8	1.30
Mutual inductance (nH)	0.11	0.17
Capacitance (pF)	0.11	0.13
Mutual capacitance (fF)	0.20	0.14
Resistance (Ω)	0.21	0.40

Signal wire length: 0.958-1.566 mm Ground wire length: 0.4 mm Frequency: 3 GHz