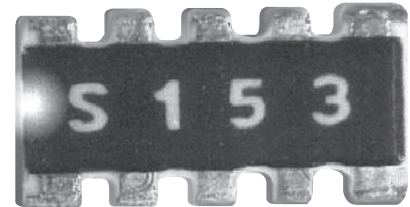


Thick Film Chip Arrays

BCN Series

- Sulphur resistant version available (Tested to ASTM-B809)
- AEC-Q200 (BCN10, BCN164AB and BCN4D)
- Convex terminations
- Isolated and bussed versions



Note - BCN4D will be End of Life in September 2021

 All parts are Pb-free and comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

Summary of Types

| Type | Part Number Start | Width (mm) | Resistor Elements | Circuit | Package Size | Scalloped Convex | Square Convex |
|--------|-------------------|------------|-------------------|----------|--------------|------------------|---------------|
| BCN10 | BCN104AB | 1.0 | 0402 x 4 | Isolated | 0804 | | |
| BCN164 | BCN164A | 1.6 | 0603 x 4 | | | 1206 | |
| | BCN164AB | | | | | | |
| BCN168 | BCN168SB | 1.6 | 0603 x 8 | Bussed | 1206 | | |
| | BCN168RB | | | | | | |
| BCN4D | BCN4D | 3.1 | 1206 x 4 | Isolated | 2112 | | |

Electrical Data

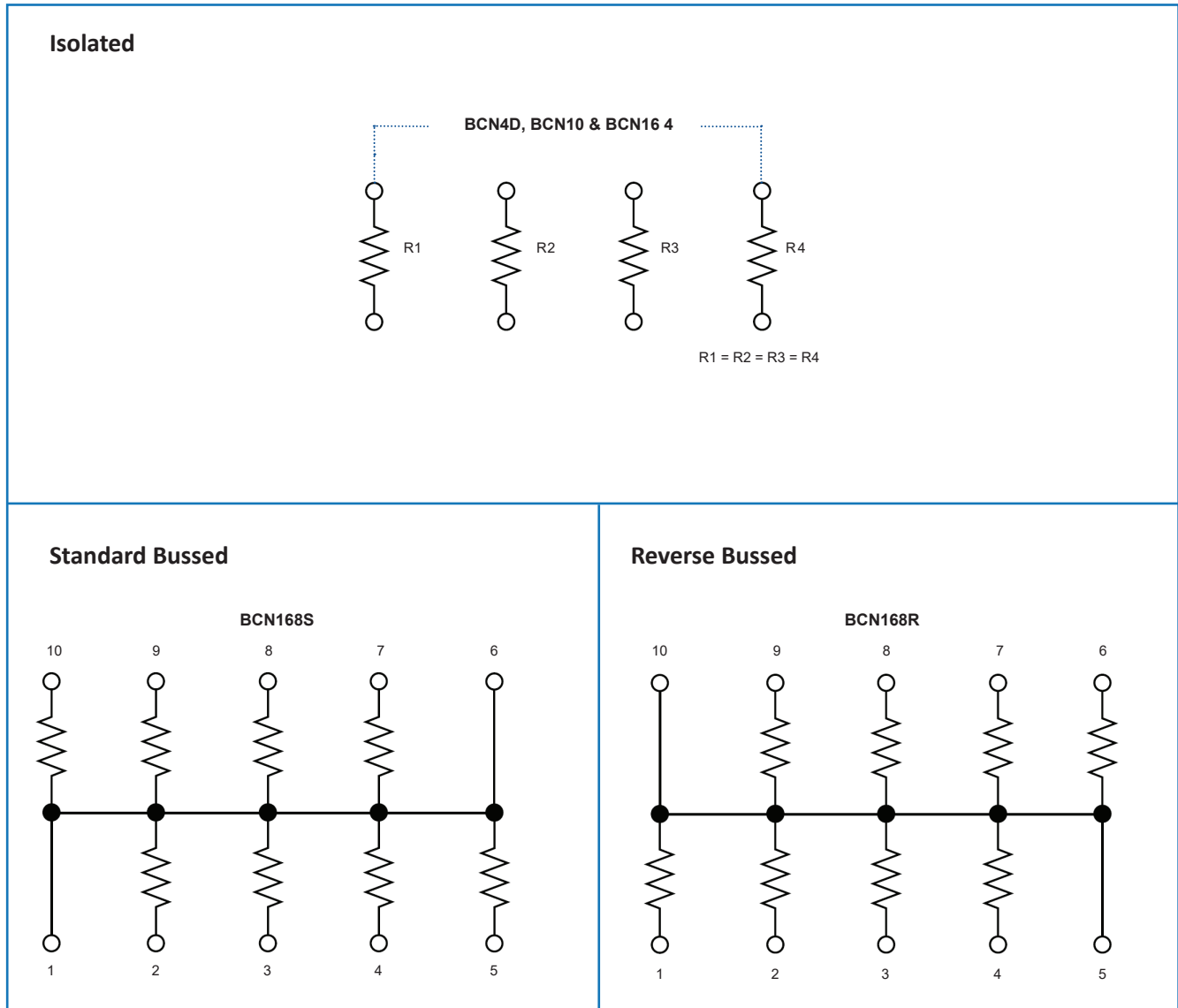
| | | BCN10 | BCN164 | BCN168 | BCN4D |
|-----------------------------|--------|------------------------------------------------------|---------|------------|-----------|
| Resistor power rating @70°C | mW | 63 | | 32 | 125 |
| Package power rating @70°C | mW | 250 | | | 500 |
| Limiting element voltage | V | 25 | 50 | 25 | 75 |
| Maximum overload voltage | V | 63 | 125 | 63 | 188 |
| Resistance range | ohms | 10R – 1M0 | | 100R – 1M0 | 10R – 1M0 |
| Resistance tolerance | % | 1, 5 | 1, 2, 5 | 5 | 1, 5 |
| TCR | ppm/°C | ±200 | | | |
| Standard values | | E24 (for 2% or 5% tolerance), E96 (for 1% tolerance) | | | |
| Ambient temperature range | °C | -55 to +155 | | | |

General Note

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BCN Series

Circuits



Environmental Data

| Test | Condition | $\Delta R\%$ (+0.1 Ω) |
|---------------------------------|--------------------------------------------------|-------------------------------|
| Load life | 1000 hrs cyclic load @ 70°C | 3 |
| Short term overload | 2.5 x rated voltage for 5s | 2 |
| High temperature operation | 1000 hrs @ 155°C | 3 |
| Temperature cycling | 5 cycles, -55 to +155°C | 1 |
| Moisture resistance | 1000 hrs @ 40°C, 95% RH | 3 |
| Resistance to solder heat | 260°C for 10s | 1 |
| Sulphur resistance ¹ | 1000 hrs @ 50°C, 92% RH, 3-5ppm H ₂ S | 0.5 |

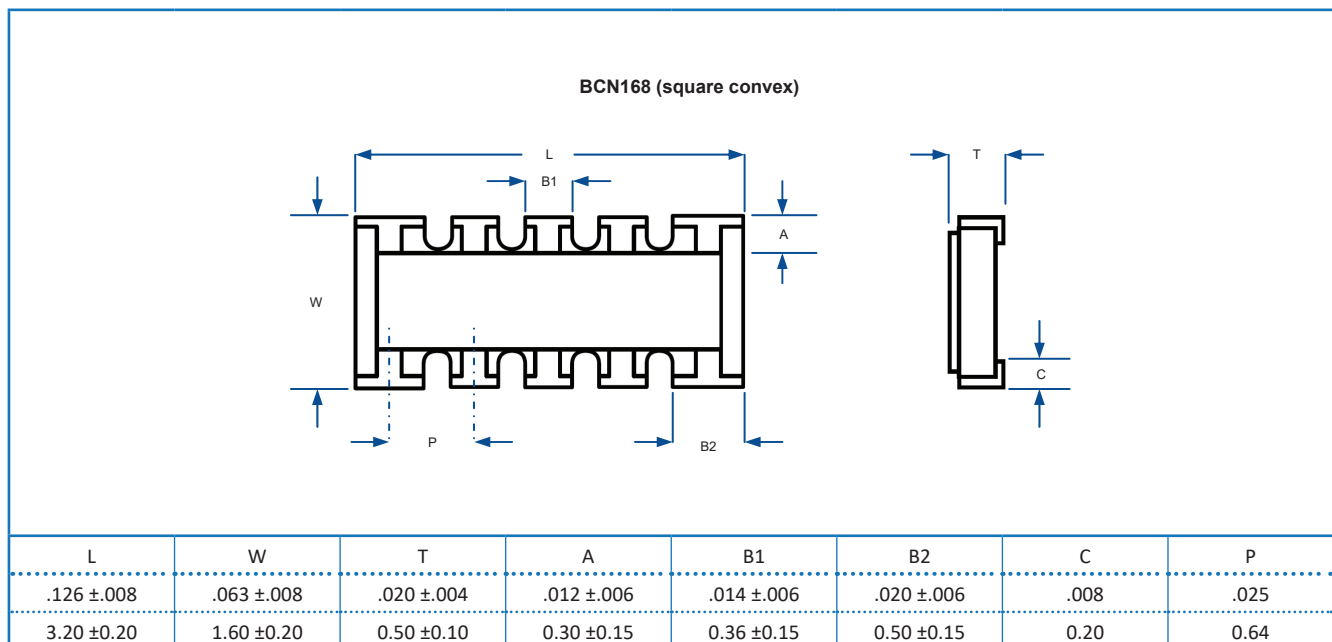
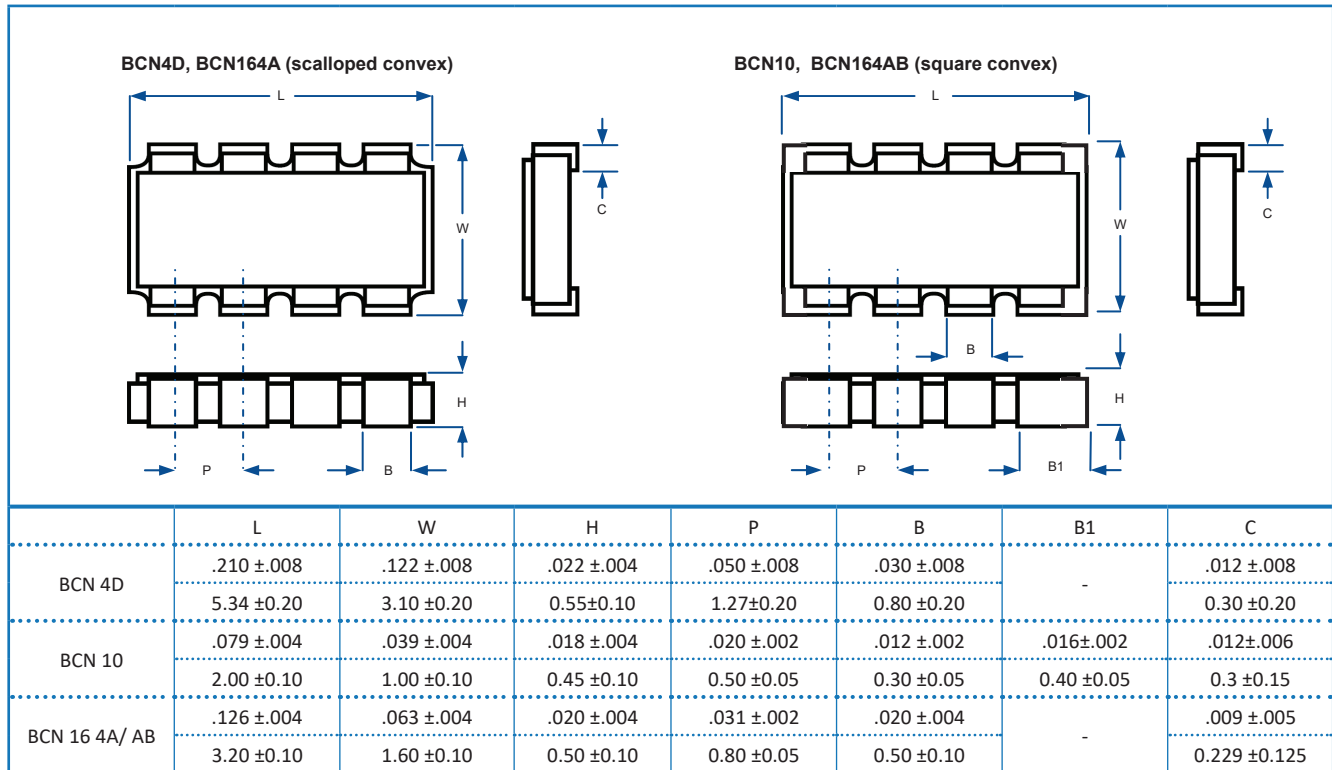
Note 1 – Anti-sulphur construction only

General Note

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BCN Series

Physical Data (Inch /mm)



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BCN Series

Solder pad layout (Inch / mm)

BCN4D, BCN164

| | Wave Solder Process | | | | | | Re-flow Solder Process | | | | |
|---------------|---------------------|------|------|------|------|------|------------------------|------|------|------|------|
| | P | A | B | C | X | Y | A | B | C | X | Y |
| BCN 4D | .050 | .087 | .169 | .022 | .028 | .041 | .087 | .154 | .022 | .028 | .034 |
| | 1.27 | 2.20 | 4.30 | 0.57 | 0.70 | 1.05 | 2.20 | 3.90 | 0.57 | 0.70 | 0.85 |
| BCN 16 4A, AB | .032 | .039 | .118 | .014 | .018 | .039 | .039 | .118 | .014 | .018 | .039 |
| | 0.80 | 1.00 | 3.00 | 0.35 | 0.45 | 1.00 | 1.00 | 3.00 | 0.35 | 0.45 | 1.00 |

BCN168

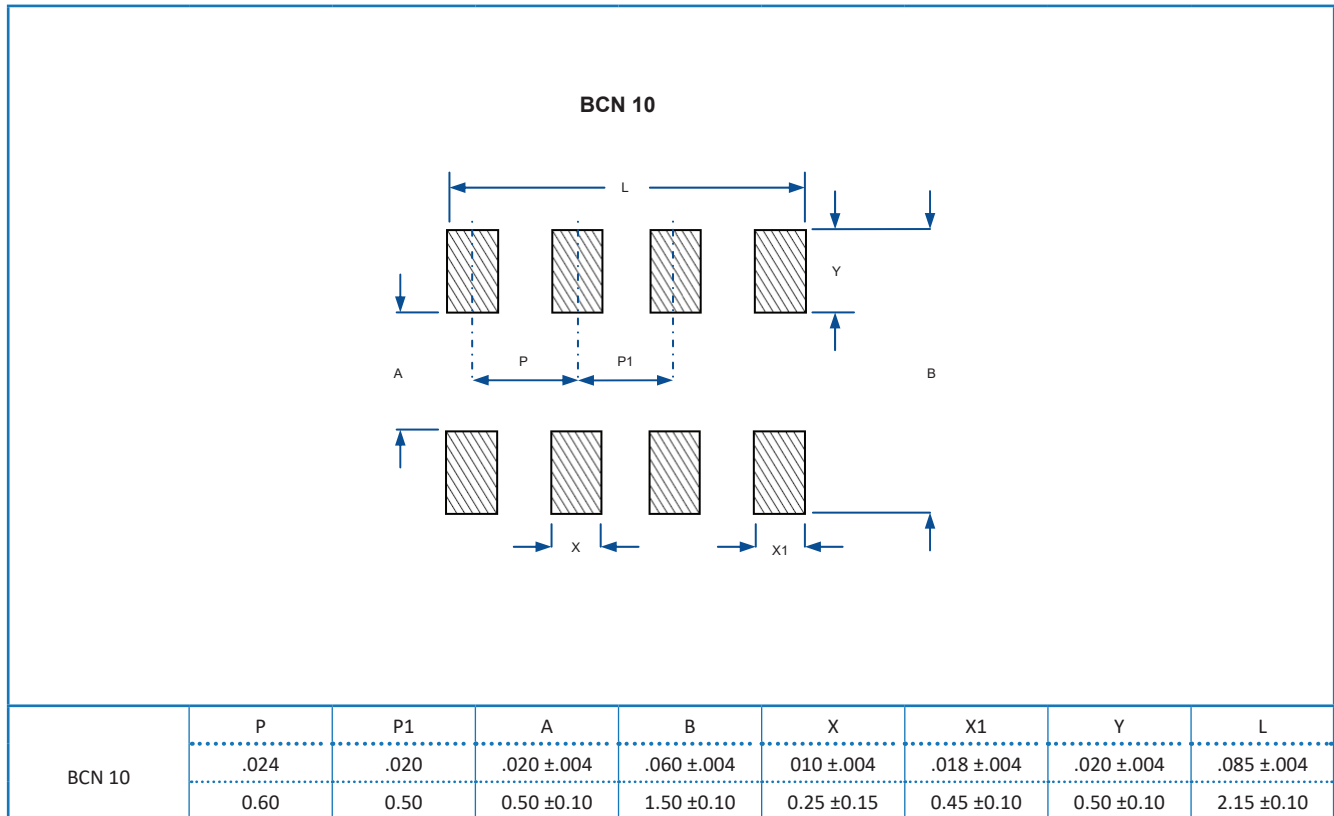
| | Wave Solder Process | | | | | | Re-flow Solder Process | | | | |
|------------------|---------------------|------|------|------|------|------|------------------------|------|------|------|------|
| | P | A | B | X | X1 | Y | A | B | X | X1 | Y |
| BCN 16 8RB / 8SB | .025 | .048 | .096 | .012 | .018 | .024 | .048 | .096 | .012 | .018 | .024 |
| | 0.64 | 1.20 | 2.40 | 0.30 | 0.45 | 0.60 | 1.20 | 2.40 | 0.30 | 0.45 | 0.60 |

General Note

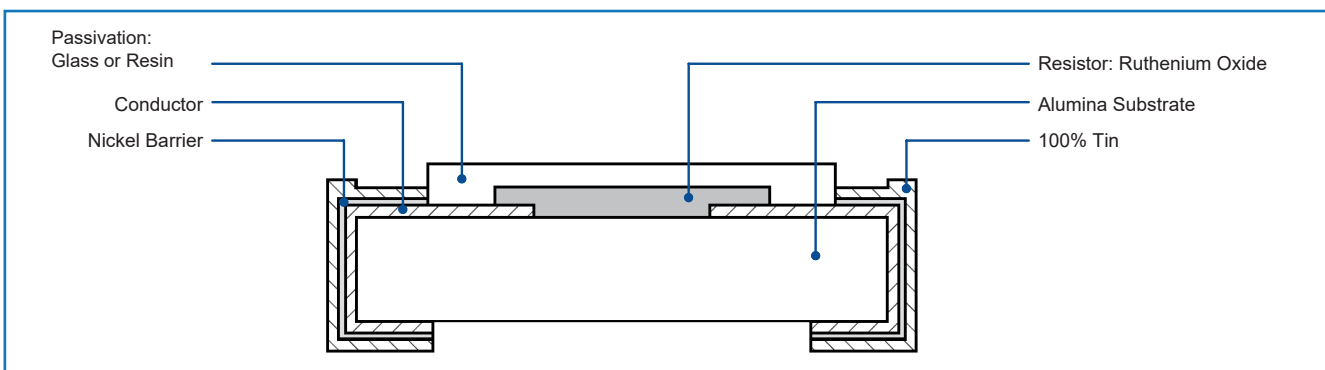
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BCN Series

Solder pad layout (Inch / mm)



Construction



General Note

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BCN Series

Ordering Procedure

Example: BCN164AB102J7S (BCN 1.6mm wide, 4 resistors, isolated circuit, square edge, convex terminations at 1 kilohm $\pm 5\%$, on a 7" reel, anti-sulphur construction, Pb-free).

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | C | N | 1 | 6 | 4 | A | B | 1 | 0 | 2 | J | 7 | S |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|----------|-------------|---------------------|-------------------|-----------------|----------------------------------------------------|--------------------|--------------|----------------|
| Series | Width | Number of Resistors | Circuit | Edge | Value | Tolerance | Packaging | Construction |
| BCN | Blank=3.1mm | 4 | A=Isolated | Blank=Scalloped | 3 digits for E24 at 2% or 5% | F= $\pm 1\%$ | 7=7" reel | Blank=Standard |
| | | 8 | D=Isolated | | | | G= $\pm 2\%$ | |
| | 10=1.0mm | | S=Standard bussed | B=Square | 4 digits for uniquely E96 and for all values at 1% | J= $\pm 5\%$ | | S=Anti-sulphur |
| | 16=1.6mm | | R=Reverse bussed | | | (Blank for jumper) | | |
| 21=2.1mm | | | | | | | | |
| | | | | | JP=Jumper | | | |

| Valid Options (1 - 5) | | | | | | | Valid Options (6 & 9) | | | | | Packaging Quantity & Tape (8) | | |
|-----------------------|---|---|---|---|---|---|-----------------------|---------------------------|--|--|--|-------------------------------|-------------------------------------------|--|
| B | C | N | 1 | 0 | 4 | A | B | JP=Jumper, S=Anti-sulphur | | | | | 7=10,000/reel, 13=40,000/reel, Paper tape | |
| B | C | N | 1 | 6 | 4 | A | | JP=Jumper, S=Anti-sulphur | | | | | 7=5000/reel, 13=20,000/reel, Paper tape | |
| B | C | N | 1 | 6 | 4 | A | B | JP=Jumper, S=Anti-sulphur | | | | | | |
| B | C | N | 1 | 6 | 8 | S | B | | | | | | | |
| B | C | N | 1 | 6 | 8 | R | B | S=Anti-sulphur | | | | | | |
| B | C | N | | | 4 | D | | JP=Jumper, S=Anti-sulphur | | | | | 7=4000/reel, 13=16,000/reel, Plastic tape | |

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