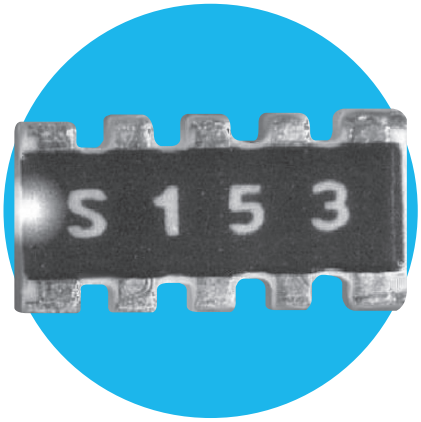
Thick Film Chip Arrays

BCN Series



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

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		0603 x 8	Bussed			■
	BCN168RB						■
BCN4D	BCN4D	3.1	1206 x 4	Isolated	2112	■	
BCN31	BCN318SB		1206 x 8	Bussed[1]	2512		■
	BCN318RB						■

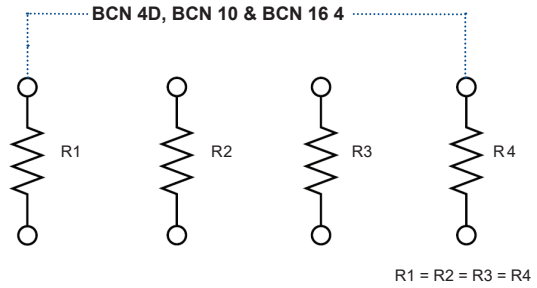
Note 1 – For R/2R ladder circuit see separate BCN31L datasheet

Electrical Data

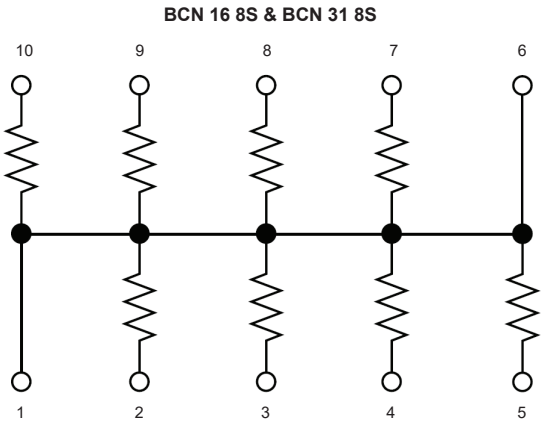
		BCN10	BCN164	BCN168	BCN4D	BCN31
Resistor power rating @70°C	mW	63		32	125	63
Package power rating @70°C	mW	250			500	
Limiting element voltage	V	25	50	25	75	50
Maximum overload voltage	V	63	125	63	188	125
Resistance range	ohms	10R – 1M0		100R – 1M0	10R – 1M0	22R – 1M0
Resistance tolerance	%	1, 5	1, 2, 5	5	1, 5	1, 2, 5
TCR	ppm/°C	±200				
Standard values		E24 preferred, E96 available				
Ambient temperature range	°C	-55 to +155				

Circuits

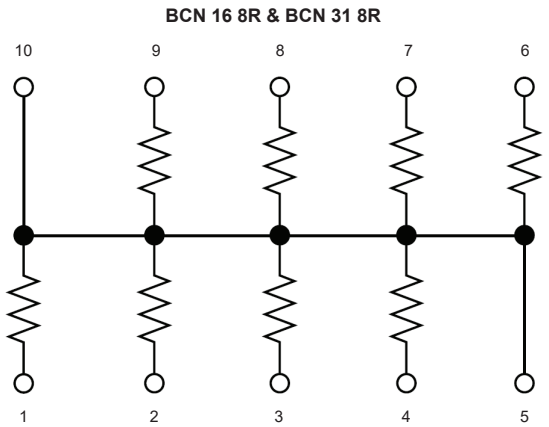
Isolated



Standard Bussed



Reverse Bussed



Environmental Data

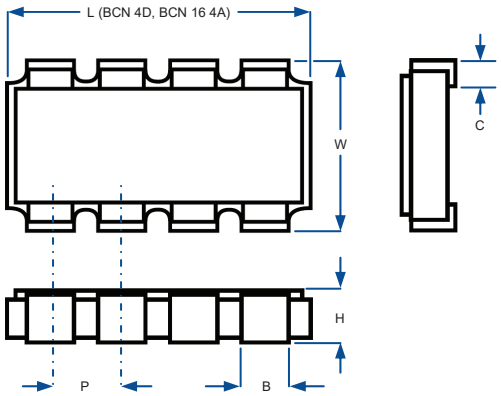
Test	Condition	ΔR% (+0.1Ω)
Load life	1000 hrs cyclic load @ 70°C	3
Short term overload	2.5 x rated voltage for 5s	2
High temperature operation	1000 hrs @ 155°C	3
Temperature cycling	5 cycles, -55 to +155°C	1
Moisture resistance	1000 hrs @ 40°C, 95% RH	3
Resistance to solder heat	260°C for 10s	1
Sulphur resistance[1]	1000 hrs @ 50°C, 92% RH, 3-5ppm H_2S	0.5

Note 1 – Anti-sulphur construction only

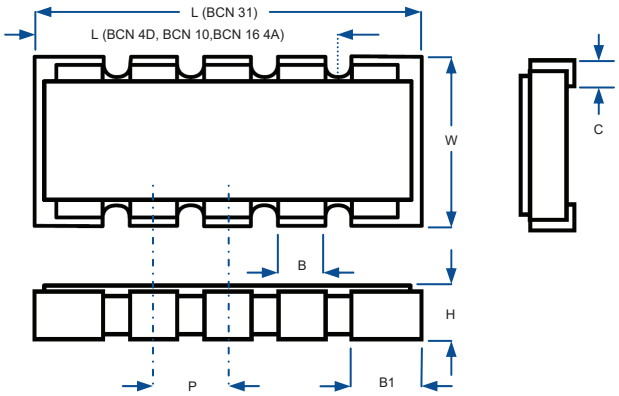
Physical Data (Inch /mm)

Exterior Termination (Convex)

Scalloped Edge: Models BCN 4D, 16 4A



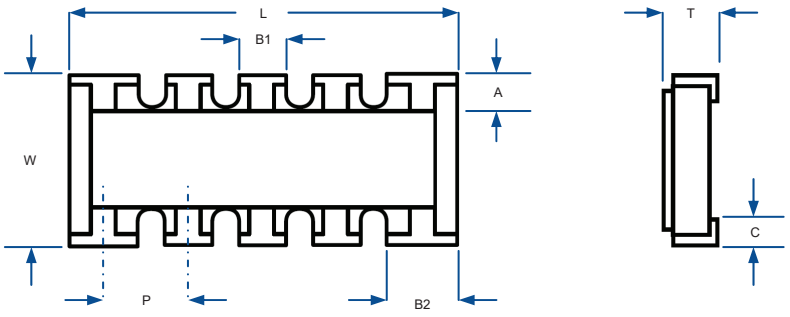
Square Edge: Models BCN 16 4AB, 31



	L	W	H	P	B	B1	C
BCN 4D	.210 ±.008	.122 ±.008	.022 ±.004	.050 ±.008	.030 ±.008	-	.012 ±.008
	5.34 ±0.20	3.10 ±0.20	0.55±0.10	1.27±0.20	0.80 ±0.20		0.30 ±0.20
BCN 10	.079 ±.004	.039 ±.004	.018 ±.004	.020 ±.002	.012 ±.002	.016±.002	.012±.006
	2.00 ±0.10	1.00 ±0.10	0.45 ±0.10	0.50 ±0.05	0.30 ±0.05	0.40 ±0.05	0.3 ±0.15
BCN 16 4A/ AB	.126 ±.004	.063 ±.004	.020 ±.004	.031 ±.002	.020 ±.004	-	.009 ±.005
	3.20 ±0.10	1.60 ±0.10	0.50 ±0.10	0.80 ±0.05	0.50 ±0.10		0.229 ±0.125
BCN 31	.252 ±.008	.122+.012,-.008	.022 ±.004	.050 ±.002	.032 ±.004	.041±.004	.012 ±.004
	6.40 ±0.20	3.1 +0.3, -0.2	0.55 ±0.10	1.27 ±0.051	0.80 ±0.10	1.05±0.10	0.30 ±0.10

Exterior Termination (Convex)

Square Edge: Models BCN 16 8R, 8S

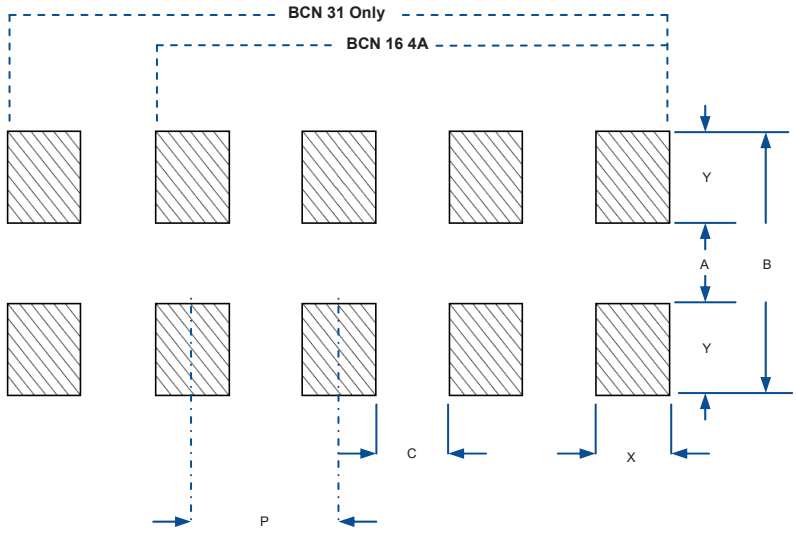


L	W	T	A	B1	B2	C	P
.126 ±.008	.063 ±.008	.020 ±.004	.012 ±.006	.014 ±.006	.020 ±.006	.008	.025
3.20 ±0.20	1.60 ±0.20	0.50 ±0.10	0.30 ±0.15	0.36 ±0.15	0.50 ±0.15	0.20	0.64

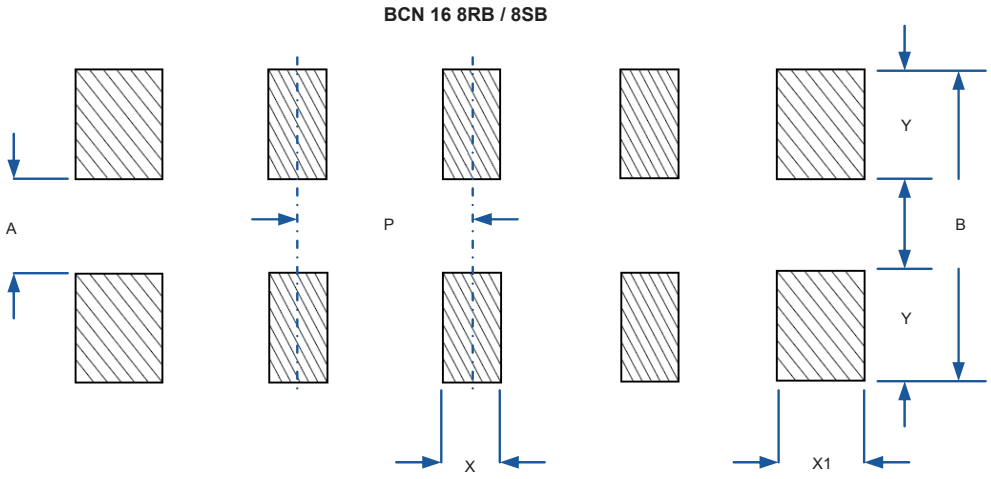
General Note

TT Electronics reserves the right to make changes in product specification without notice or liability.
All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

Solder pad layout (Inch / mm)



		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
BCN 31 8R, 8S	.050	.084	.148	.014	.036	.032	.084	.148	.014	.036	.032
	1.27	2.10	3.70	0.35	0.90	0.80	2.10	3.70	0.35	0.90	0.80



		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

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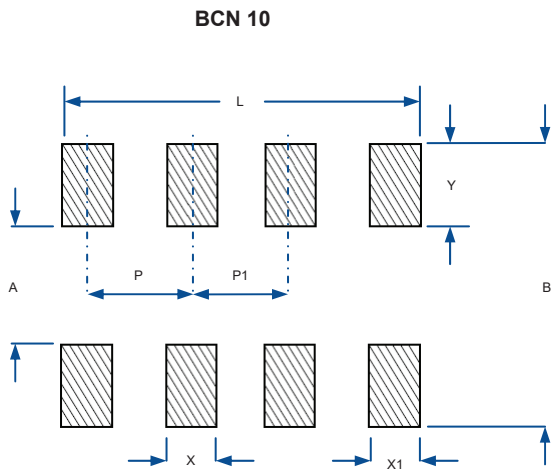
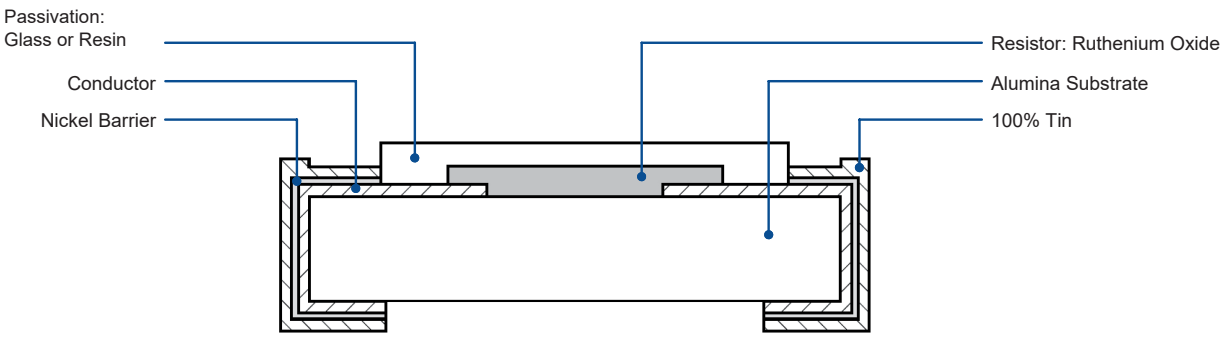


	P	P1	A	B	X	X1	Y	L
BCN 10	.024	.020	.020 ±.004	.060 ±.004	010 ±.004	.018 ±.004	.020 ±.004	.085 ±.004
	0.60	0.50	0.50 ±0.10	1.50 ±0.10	0.25 ±0.15	0.45 ±0.10	0.50 ±0.10	2.15 ±0.10

Construction



Ordering Procedure

Example: BCN164AB102J7S (BCN 1.6mm wide, 4 resistors, isolated circuit, square edge, convex terminations at 1 kilohm ±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 Series	2 Width	3 Number of Resistors	4 Circuit	5 Edge	6 Value	7 Tolerance	8 Packaging	9 Construction
BCN	Blank= 3.1mm	4	A=Isolated	Blank= Scalloped	3 digits for E24 at 2% or 5%	F=±1%	7=7" reel	Blank= Standard
		8	D=Isolated			G=±2%	13=13" reel	
	10=1.0mm		S=Standard bussed	B=Square	4 digits for uniquely E96 and for all values at 1%	J=±5%		S=Anti-sulphur
	16=1.6mm					(Blank for jumper)		
	21=2.1mm		R=Reverse bussed					
	31=3.1mm							
					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
B	C	N	3	1	8	S	B		
B	C	N	3	1	8	R	B		

Mouser Electronics

Authorized Distributor

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TT Electronics:

BCN164A100J13 BCN164A102J7 BCN164A103J13 BCN164A103J7 BCN164A121J7 BCN164A151J7 BCN164A220J7 BCN164A223J7 BCN164A272J7 BCN164A330J13 BCN164A330J7 BCN164A390J13 BCN164A472J13 BCN164A473J7 BCN164A562J7 BCN164A822J13 BCN164AB102J7 BCN164AB103J7 BCN164AB104J7 BCN164AB274J7 BCN164AB3090F7 BCN164AB330J7 BCN164AB470J7 BCN164AB472J7 BCN164AB473J7 BCN164AB4992F7 BCN164ABI102J7 BCN164ABI103J7 BCN164ABI104J7 BCN164ABI224J7 BCN164ABI330J7 BCN164ABI683J7 BCN168RB103J7 BCN318RB331J7 BCN4D220J7 BCN4D470J7 BCN4D560J7 BCN164AB101J7 BCN164AB220J7 BCN104AB330J7 BCN164ABJP7 BCN168RB102J7 BCN164A100J7 BCN164A101J13 BCN164A101J7 BCN164A102J13 BCN164A104J7 BCN164A105J7 BCN164A111J7 BCN164A120J7 BCN164A122J7 BCN164A150J7 BCN164A151J13 BCN164A152J7 BCN164A153J7 BCN164A161J7 BCN164A180J7 BCN164A181J7 BCN164A183J7 BCN164A200J7 BCN164A202J7 BCN164A203J7 BCN164A220J13 BCN164A221J13 BCN164A221J7 BCN164A222J13 BCN164A222J7 BCN164A224J7 BCN164A240J7 BCN164A241J7 BCN164A243J7 BCN164A271J7 BCN164A272J13 BCN164A273J7 BCN164A274J13 BCN164A274J7 BCN164A300J7 BCN164A301J7 BCN164A331J13 BCN164A331J7 BCN164A332J7 BCN164A333J7 BCN164A334J7 BCN164A360J7 BCN164A390J7 BCN164A391J7 BCN164A392J7 BCN164A430J7 BCN164A470J13 BCN164A470J7 BCN164A471J7 BCN164A472J7 BCN164A473J13 BCN164A474J7 BCN164A510J7 BCN164A511J7 BCN164A512J7 BCN164A513J7 BCN164A560J13 BCN164A560J7