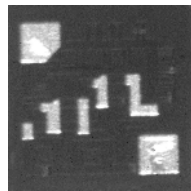
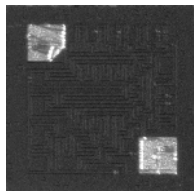


Thin Film, Back-Contact Resistor



Product may not
be to scale

The Back Contact Resistor (BCR) series single-value back-contact resistor chip is one of the smallest chips available. The BCR requires only one wire bond thus saving hybrid space. The BCRs are manufactured using Vishay Electro-Films (EFI) sophisticated thin film equipment and manufacturing technology. The BCRs are 100% electrically tested and visually inspected to MIL-STD-883.

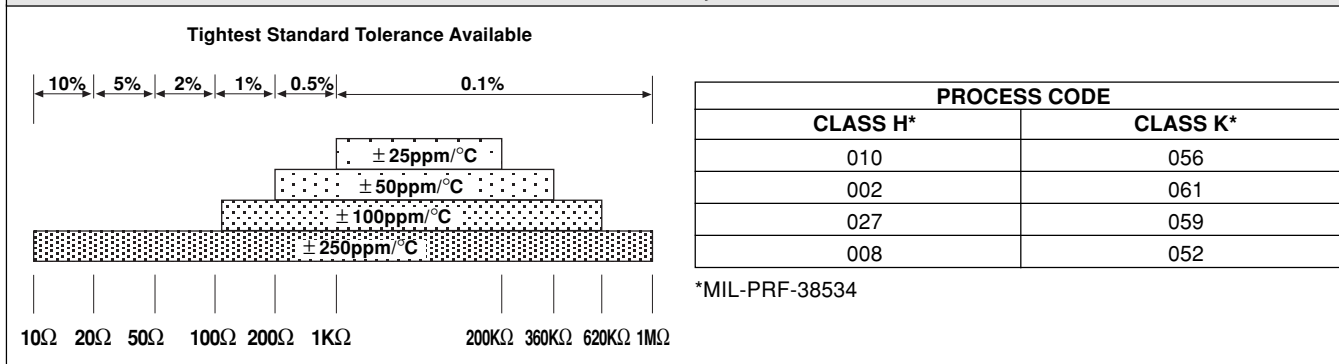
APPLICATIONS

Vishay EFI BCR resistor chips are widely used in hybrid packages where space is limited. The bottom connection is made by attaching the back of the chip to the substrate either eutectically or with conductive epoxy. The single wire bond is made to the notched pad on the top of the chip. (The other rectangular pad on the top of the chip is a via hole, a low-ohmic contact connecting the resistor to the bottom of the chip.)

FEATURES

- Only one wire bond required
- Small size: 0.020 inches square.
- Resistance range: 10Ω to 1MΩ
- Oxidized silicon substrate for good power dissipation
- Resistor material: tantalum nitride, self-passivating
- Moisture resistant

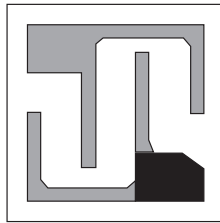
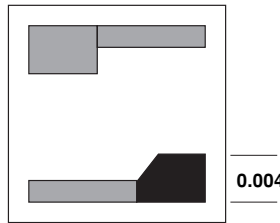
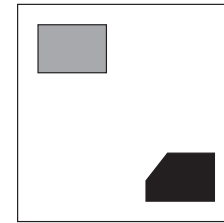
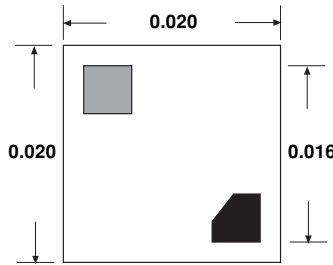
TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES AND TOLERANCES



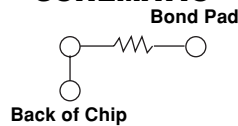
STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	
Noise, MIL-STD-202, Method 308 100Ω - 250kΩ < 100Ω or > 251kΩ	- 35dB typical. - 20dB typical.
Moisture resistance, MIL-STD-202 Method 106	± 0.5% maximum ΔR/R
Stability, 1000 hours, + 125°C, 125mW	± 1.0% maximum ΔR/R
Operating temperature range	- 55°C to + 125°C
Thermal shock, MIL-STD-202, Method 107, Test condition F	± 0.25% maximum ΔR/R
High temperature exposure, + 150°C, 100 hours	± 0.5% maximum ΔR/R
Dielectric voltage breakdown	200V
Insulation resistance	10 ¹² minimum
Operating voltage	75V maximum
DC power rating at + 70°C (derated to zero at + 175°C)	250mW
5 x rated power short-time overload, + 25°C, 5 seconds	± 0.25% maximum ΔR/R

VISHAY ELECTRO-FILMS • FRANCE +33.4.93.37.28.24 FAX: +33.4.93.37.27.31 • GERMANY +49.9287.710 FAX: +49.9287.70435 • ISRAEL +972.3.557.0945 FAX: +972.3.558.9121
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DIMENSIONS in inches

TYPICAL RANGE
 10Ω - 23Ω

TYPICAL RANGE
 24Ω - 220Ω

TYPICAL RANGE
 180Ω - 2.2KΩ

TYPICAL RANGE
 1.6KΩ - 1MΩ

NOTE: Notched Shaded area represents Top Bonding Pad. The backside of the chip constitutes the Second Resistor Connection.

SCHEMATIC

MECHANICAL SPECIFICATIONS in inches

PARAMETER	
Chip size	0.020 x 0.020 ± 0.002 (0.50 x 0.50 ± 0.05mm)
Chip thickness	0.010 ± 0.003 (0.253 ± 0.05mm)
Chip substrate material	Oxidized silicon, 10kÅ minimum SiO ₂
Resistor material	Tantalum nitride, self-passivating
Bonding pad size	0.004 x 0.004 (0.100 x 0.100mm)
Number of pads	1
Pad material	10kÅ minimum aluminum
Backing	3kÅ minimum gold
Recommended attachment method	Eutectic or conductive epoxy

OPTION: Gold bonding pads, 15kÅ minimum thickness.
 Consult Applications Engineer

ORDERING INFORMATION

Example: 100% visualled, 16kΩ, ± 1%, ± 250ppm/°C TCR, Aluminum Pads, Class H

P/N:	W	BCR	008	1600	1	F
	INSPECTION /PACKAGING	PRODUCT FAMILY	PROCESS CODE	RESISTANCE VALUE	MULTIPLIER CODE	TOLERANCE CODE
	W = 100% visually inspected parts in matrix trays per MIL-STD-883		See Process Code table	Use first 4 significant digits of resistance	B = 0.01 A = 0.1 0 = 1 1 = 10 2 = 100 3 = 1000	B = 0.1% C = 0.2% D = 0.5% F = 1.0% G = 2.0% H = 2.5% J = 5.0% K = 10% M = 20% L = 25% N = 50%
	X = Sample, visually inspected loaded in matrix trays (4% AQL)					

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