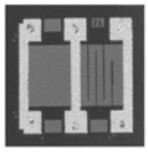
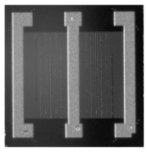
Thin Film Resistors on Alumina, User Trimmable





Product may not be to scale

The CC7 and CCB series resistor chips offer the combination of user trimmability, low shunt capacitance and excellent stability. The CC7 and CCB can be specified as either a single R_T value resistor, as two resistors with a center tap feature (1:1 ratio or custom) ratio or user trimmable.

The CC7 and CCBs a six bonding pads allows the user increased layout flexibility. The CC7 and CCBs are manufactured using Vishay Electro-Films (EFI) sophisticated thin film equipment and manufacturing technology. They are 100 % electrically tested and visually inspected to MIL-STD-883.

FEATURES

- Wire bondable
- Small single chip size
  CC7 - 0.030 inches square
  CCB - 0.050 inches square
- Alumina substrate
- Low stray capacitance: < 0.2 pF
- Resistance range R_T: 100 Ω to 20 kΩ for CC7
  Resistance range R_T: 100 Ω to 50 kΩ for CCB
- Resistor material: Nichrome
- User trimmable

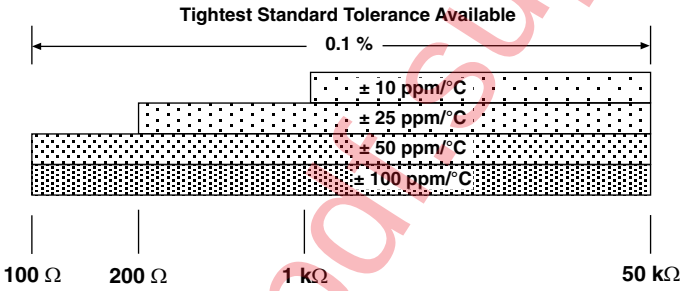
APPLICATIONS

Vishay EFI CC7 and CCB chip resistors provide excellent high frequency response and are ideally suited for prototyping. Typical application areas are:

- Amplifiers
- Oscillators
- Attenuators
- Couplers
- Filters

Recommended for hermetic environments where die is not exposed to moisture

TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES AND TOLERANCES



PROCESS CODE			
CC7		CCB	
CLASS H*	CLASS K*	CLASS H*	CLASS K*
219	223	219	223
220	224	220	224
221	225	221	225
222	226	222	226

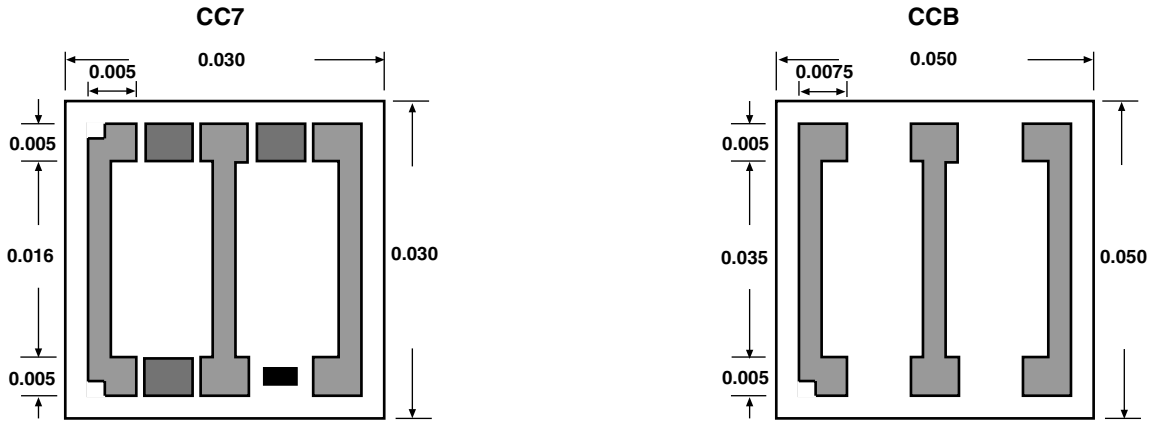
*MIL-PRF-38534 inspection criteria
R_A user trimmable 50 % above
R_T value specified in P/N

STANDARD ELECTRICAL SPECIFICATIONS

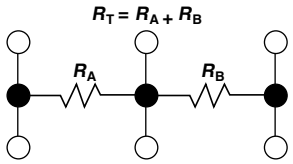
PARAMETER	
Noise, MIL-STD-202, Method 308	- 20 dB typ.
Stability, 1000 h, + 125 °C at Rated Power	+ 0.1 % max. $\Delta R/R$
Operating Temperature Range	- 55 °C to + 125 °C
Thermal shock, MIL-STD-202, Method 107, Test Condition F	+ 0.25 % max. $\Delta R/R$
High Temperature Exposure, + 150 °C, 100 h	+ 0.25 % max. $\Delta R/R$
Dielectric Voltage Breakdown	400 V
Insulation Resistance	10^{12} min.
Operating Voltage	100 V max.
DC Power Rating at 125 °C	50 mW max. (30 mil) 100 mW max. (50 mil)
5 x Rated Power Short-Time Overload, + 25 °C, 5 s	+ 0.25 % max. $\Delta R/R$

Note: Performance characteristics are not guaranteed once user trimmed

DIMENSIONS in inches



SCHEMATIC



MECHANICAL SPECIFICATIONS in inches	
PARAMETER	
Chip Size	0.030 x 0.030 ± 0.003 (0.76 x 0.76 ± 0.08 mm) 0.050 x 0.050 ± 0.003 (1.27 x 1.27 ± 0.08 mm)
Chip Thickness	0.010 ± 0.002 (0.25 ± 0.03 mm)
Chip Substrate Material	99.6 % alumina, 2 - 4 microinch finish
Resistor Material	Nichrome
Bonding Pad Size	0.005 x 0.005 (0.12 x 0.12 mm) minimum
Number of Pads	6
Pad Material	25 kÅ minimum gold standard
Backing	None

Options: Gold back for solder die attach
Consult Application Engineer

ORDERING INFORMATION

Example: 100 % visualled, R_T = 500, ± 10 %, ± 50 ppm/°C TCR, gold pads, class H vixual inspection, 30 mil size, R_A user trim.
Standard user trim versions will be supplied with R_A untrimmed
For custom R_A, R_B combinations consult Application Engineer

W	**CC7**	**221**	**5000**	**A**	**K**
INSPECTION/ PACKAGING	PRODUCT FAMILY	PROCESS CODE	RESISTANCE VALUE	MULTIPLIER CODE	TOLERANCE CODE
W = 100 % visually inspected parts X = Sample, visually inspected parts loaded in matrix trays (4 % AQL)	CC7 CCB	See Process Code table	Use first 4 digits significant digits of the resistance (R_T)	**B** = 0.01 **A** = 0.1 **0** = 1 **1** = 10	**B** = 0.1 % **D** = 0.5 % **F** = 1.0 % **G** = 2.0 % **H** = 2.5 % **J** = 5.0 % **K** = 10 %

Disclaimer

All product specifications and data are subject to change without notice.

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