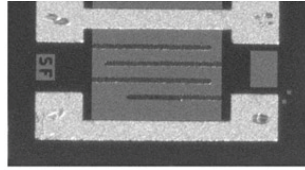
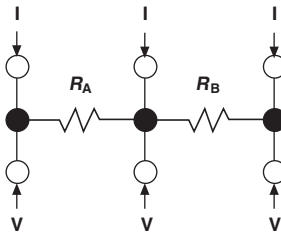


## Thin Film, Center-Tapped Resistor Divider Network



Product may not be to scale

The CTA series resistor chips combine the best tolerances, stability and low shunt capacitance. The CTA offers the designer flexibility in use as either a single value resistor or as two resistors with a center tap feature. The CTAs six bonding pads allows the user increased layout flexibility. The CTAs are manufactured using Vishay Electro-Films (EFI) sophisticated thin film equipment and manufacturing technology. The CTAs are 100 % electrically tested and visually inspected to MIL-STD-883, method 2032 class H or K.



### FEATURES

- Wire bondable
- Center tap feature
- Tight ratio tolerances to:  $\pm 0.1\%$
- Chip size: 0.030" x 0.030"
- Case: 0303
- Resistance range total: 25  $\Omega$  to 35 k $\Omega$
- Alumina substrate, low shunt capacitance: < 0.2 pF
- Resistor material nichrome
- Excellent stability:  $\pm 0.025\%$  maximum  $\Delta R/R$
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
**GREEN**  
(5-2008)

### APPLICATIONS

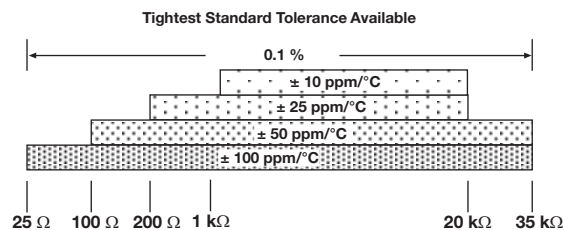
The CTA center-tapped resistor chips are used mainly in feedback circuits of amplifiers where ratio matching, low shunt capacitance and tracking between two resistors is critical.

Recommended for hermetic environments where chip is not exposed to moisture.

For lower values, the resistance of the six bonding-pad configurations can vary, depending on the method of measurement used. Vishay EFI measures low-value resistors by the four-wire Kelvin technique. The measuring method is illustrated in the diagram to the right.

### TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES, AND TOLERANCES

PARAMETER	VALUE	UNIT
Total Resistance Range	25 to 35K	$\Omega$
Standard Tolerances	$\pm 0.1$	%
TCR	$\pm 10, \pm 25, \pm 50, \pm 100$	ppm/ $^{\circ}\text{C}$

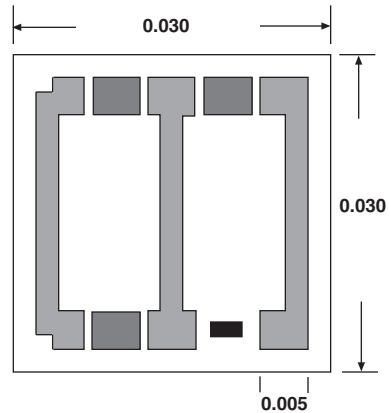


### STANDARD ELECTRICAL SPECIFICATIONS

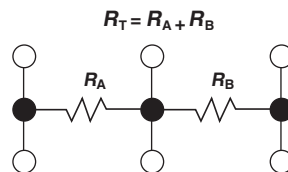
PARAMETER	VALUE	UNIT
TCR Tracking Between Halves ( $R_A/R_B$ )	$\pm 2$ (1)	ppm/ $^{\circ}\text{C}$
Center Tap Ratio, $R_A/R_B$ : Tolerance	$1 \pm 1$ standard	%
Noise, MIL-STD-202, Method 308	- 35 typ.	dB
Moisture Resistance, MIL-STD-202, Method 106, (passivated only)	$\pm 0.5$ max. $\Delta R/R$	%
Stability, 1000 h, + 125 $^{\circ}\text{C}$ , 62 mW	$\pm 0.025$ max. $\Delta R/R$	%
Operating Temperature Range	- 55 to + 125	$^{\circ}\text{C}$
Thermal Shock, MIL-STD-202, Method 107, Test Condition F	$\pm 0.1$ max. $\Delta R/R$	%
High Temperature Exposure, + 150 $^{\circ}\text{C}$ , 100 h	$\pm 0.1$ max. $\Delta R/R$	%
Insulation Resistance	$10^{12}$ min.	$\Omega$
Operating Voltage	100 max.	V
DC Power Rating at + 70 $^{\circ}\text{C}$ (derated to zero at + 150 $^{\circ}\text{C}$ )	0.125 max.	W
5 x Rated Power Short-Time Overload, + 25 $^{\circ}\text{C}$ , 5 s	+ 0.25 max. $\Delta R/R$	%

#### Note

(1) 10 ppm/ $^{\circ}\text{C}$  for  $R < 100$

**DIMENSIONS** in inches


**STANDARD CONFIGURATION**  
 \*Six locations. All pads 0.005 x 0.005

**SCHEMATIC**


MECHANICAL SPECIFICATIONS	
PARAMETER	VALUE
Chip Size	0.030" x 0.030" ± 0.002" (0.762 mm x 0.762 mm ± 0.050 mm)
Chip Thickness	0.010" ± 0.002" (0.254 mm ± 0.05 mm)
Chip Substrate Material	99.6 % alumina
Resistor Material	Nichrome
Bonding Pad Size	0.005" x 0.005" (0.127 mm x 0.127 mm)
Number of Pads	6
Pad Material	25 kÅ minimum gold
Backing	None (Au optional)

GLOBAL PART NUMBER INFORMATION																
Global Part Number: <b>CTA50000BBKKNHWS</b>																
Global Part Number Description: <b>CTA 5K 0.1 % RT 0.1 % ± 100 ppm/°C ± 10 ppm/°C Au None H WS</b>																
<b>C</b>	<b>T</b>	<b>A</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>B</b>	<b>B</b>	<b>K</b>	<b>K</b>	<b>G</b>	<b>N</b>	<b>H</b>	<b>W</b>	<b>S</b>
MODEL	RESISTANCE (R TOTAL)	RESISTANCE MULTIPLIER CODE	TOL. CODE (%)	RATIO TOL. (%)	TCR (ppm/°C)	TCR TRACK (ppm/°C)	TERMINATION	BACK METAL	VISUAL CLASS	PACKAGING CODE						
<b>CTA</b>	First 4 digits are significant figures of resistance	<b>B</b> = 0.01 <b>A</b> = 0.1 <b>0</b> = 1 <b>1</b> = 10	<b>B</b> = 0.1 <b>C</b> = 0.25 <b>D</b> = 0.5 <b>F</b> = 1.0 <b>G</b> = 2.0 <b>J</b> = 5.0 <b>K</b> = 10.0	<b>B</b> = 0.1 <b>C</b> = 0.25 <b>D</b> = 0.5 <b>F</b> = 1.0 <b>G</b> = 2.0 <b>U</b> = User <b>N</b> = No	<b>E</b> = ± 25 <b>C</b> = ± 50 <b>K</b> = ± 100	<b>G</b> = ± 2 <b>J</b> = ± 5 <b>K</b> = ± 10 <b>N</b> = No	<b>G</b> = Au <b>A</b> = Al	<b>G</b> = Au <b>N</b> = None	<b>H</b> = Class H <b>K</b> = Class K	<b>WS</b> = Waffle pack 100 min., 1 mult						



## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.