

## ATC WBR1 Series Wire Bond Resistors (Top Contact/Bottom Isolated)

### Features:

- Resistance Range: 2 K $\Omega$  to 330 K $\Omega$ \*
- Outline Size: 20 x 20 mils (0.51 x 0.51 mm)
- Passivated SiCr Resistor Material
- Gold Wire Bondable\*\*
- Ultra-High Stability
- Extremely Low TCR available ( $\pm 25$  ppm/ $^{\circ}$ C)
- Laser Trim for Tight Tolerances
- Top Contact / Bottom Isolated
- Unique A-Face Value Marking
- Ideal for Hybrid Circuit Applications

Please contact factory for the following:

\* Custom designs up to 10 M $\Omega$  are available

\*\* Aluminum bond pads are available

American Technical Ceramics offers the WBR1 Series precision Wire Bondable Resistors. These resistors are designed specifically for applications that require stable thermo-compression, ultrasonic or epoxy die attachment. This device is built in an 0202 chip outline and is ideal for but not limited to hybrid circuit applications.

The WBR1 utilizes our proprietary SiCr thin film resistor. This results in extremely tight tolerances and superior Temperature Coefficient of Resistance (TCR). Tolerance of  $\pm 0.1\%$ , with absolute TCR of  $\pm 25$  ppm/ $^{\circ}$ C is available. The WBR1 offers excellent stability and reliability and is suitable for the most demanding applications.



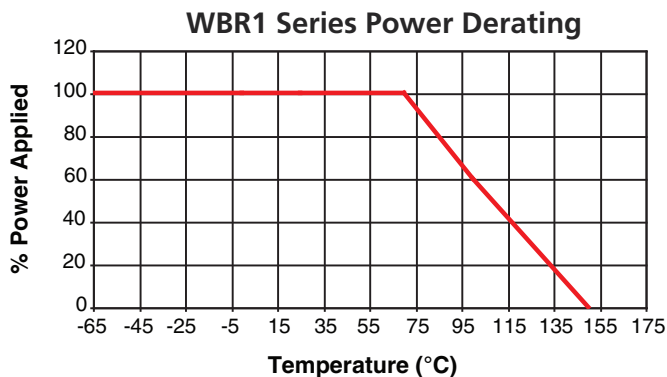
### Applications:

- Hybrid Chip on Board Circuits
- Multi Chip Module (MCM)
- Bias Networks
- Test and Measurement Equipment
- Aerospace
- Medical
- Automotive

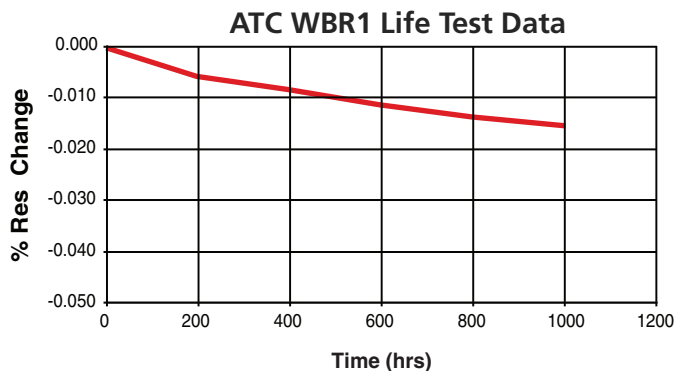
EIA resistance values with 1% tolerance are available for sampling. Please contact Factory.

STANDARD RESISTANCE VALUES (K $\Omega$ )					
2.7	6.8	15	33	68	150
3.3	8.2	18	39	82	180
4.7	10	22	47	100	
5.6	12	27	56	120	

NOTE: Values listed are for TCR <100 ppm/ $^{\circ}$ C



250 mW (70 $^{\circ}$ C, derated to 0 at 150 $^{\circ}$ C) on alumina



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# ATC WIRE BONDABLE RESISTIVE PRODUCTS

## Resistor Materials

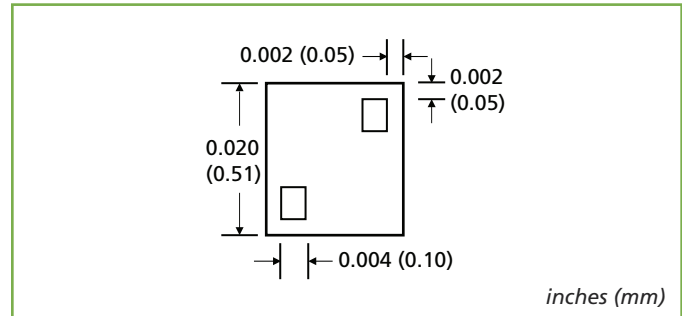
Substrate Material	Oxidized Silicon
Resistor Material	Silicon Chrome (SiCr)
Backing	None, Lapped Silicon
Bonding Pad Material	Gold

## Mechanical Configurations

inches (mm)

Size	Length (L)	Width (W)	Thickness (T)	Bond Pad
0202	.020 ±.004 (0.51 ±0.10)	.020 ±.004 (0.51 ±0.10)	.010 ±.002 (0.25 ±0.05)	.0038 x .0038 (0.09 x 0.09)

## Outline Dimensions



## General Specifications

Resistor	Detail
Package Outline	0202
Resistance Range	2 KΩ to 330 KΩ *
Power Rating	250 mW (70°C, derated to 0 at 150°C) on alumina
Termination	Gold Wire Bond
Tolerances	0.1, 0.5, 1%
Operating Temperature	-55°C +125°C
Temperature Coefficient of Resistance	±25, ±50, ±100 ppm/°C
Maximum Rated Voltage	125 volts
Insulation Resistance	10 <sup>6</sup> MΩ

\*Custom Designs up to 10 MΩ available

## Environmental Tests

Test	Limit	Condition
Life Test	±0.25% max	1000 hrs., 125°C @ 50 mW
Thermal Shock	±0.25% max.	IAW MIL-STD-202, condition B
High Temperature Exposure	±0.25% max.	100 hrs. @ 150°C
Moisture Resistance	±0.25% max.	IAW MIL-PRF-55342
Wire Bond Test	4 grams min. (1.25 mil wire)	IAW MIL-PRF-55342
Short-Time Overload	±0.25% max.	IAW MIL-PRF-55342

## ATC Part Number Code

**ATC WBR 1 470 1 F G E W**

Name \_\_\_\_\_  
 Type \_\_\_\_\_  
 Resistance Value (Ω)  
 3 significant digits \_\_\_\_\_  
 R = Decimal Point  
 Multiplier \_\_\_\_\_

Packaging: Waffle Pack  
 Temperature Coefficient of Resistance (TCR - ppm/°C)  
 C = ±25, D = ±50, E = ±100  
 Termination  
 G = Gold Wire Bond  
 Tolerance

RESISTOR TOLERANCE			
Code	B	D	F
Tol.	±0.1%	±0.5%	±1%

F standard; consult factory for B and D

The above part number refers to an ATC WBR1 (0202), 4700 Ohms, F tolerance (1%), Gold Wire Bond Terminations, TCR of 50 ppm/°C, Waffle Pack Packaging

ATC accepts orders for our parts using designations with or without the "ATC" prefix. Both methods of defining the part number are equivalent, i.e., part numbers referenced with the "ATC" prefix are interchangeable to parts referenced without the "ATC" prefix. Customers are free to use either in specifying or procuring parts from American Technical Ceramics.

For additional information and catalogs contact your ATC representative or call direct at +1-631-622-4700.

Consult factory for additional performance data.

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