

## BWF Series Datasheet

Insulated Flame Retardant Wirewound Resistors | Axial and SMD Version  
Fiberglass core | Fail Safe | Bakelite Moulded case

### ORDERING CODE - Example

New SAP Part Nr.:

<b>BWF</b>	<b>110</b>	<b>K</b>	<b>T</b>	<b>-</b>	<b>73-</b>	<b>150R</b>	<b>AA</b>
Serie	* Power rating	Tol.	Pack-Code	TCR	Forming type	R Value	Special
		J = ±5% K = ±10%	T = Tape (ammo pack)	- Base on spec.	73- Inner Taping dimension ZB- Z version		AA = Standard

Historical VTM Part Nr.:

<b>BWF237 - 0</b>	<b>10</b>	<b>T</b>	<b>150R</b>
Type	Tol.	Pack-Code	R Value
	±10% = K	T = Tape (ammo pack)	

<b>RZF7</b>	<b>6720</b>	<b>K</b>	<b>K</b>	<b>-</b>	<b>13</b>	<b>150R</b>
Type	Size	Tol.	K = Blister tape reel	TC	Reel diam.	R Value

### APPLICATIONS

- Automotive
- Industrial
- Power & Energy
- Consumer & Electronics
- Computer & Peripherals

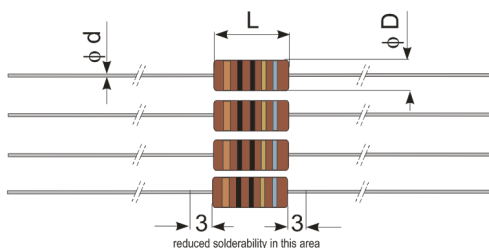
### FEATURES

- "Z" preforming ; Other preforming available
- High insulation voltage
- 240[V] fusing application available
- RoHs & REACH Compliant

### ELECTRICAL SPECIFICATIONS

Type		<b>BWF110</b>	<b>BWF210</b>
Historical Part Number	AXIAL	BWF237-0	BWF236-0
	SMD	RZF7	RZF6
Nominal Power Rating	* P <sub>25</sub>	1,1	2,1
	P <sub>70</sub>	0,75	1,5
Resistance Range	[Ω]	0R1 ... 1K	0R1 ... 1K
		(Other values upon request)	
E-Series (preferred)		E24 (5%) ; E12 (10%)	
Tolerances	±[%]	J = 5% ; K = 10%	
Temperature Coefficient	±[10 <sup>-6</sup> K <sup>-1</sup> ]	Depends on the value, please check the table below	
Working Temperature Range	[°C]	-55 ... +175	
Thermal Resistance	[KW <sup>-1</sup> ]	140	80
Insulation Resistance IEC60115-1 clause 4.6	[MΩ]	> 10 <sup>4</sup>	
Max. Working Voltage	[V] <sub>RMS</sub>	$\sqrt{P_{70} \times R}$	
Dielectric Withstanding Voltage IEC115-1 clause 4.7 (1[min])	[V] <sub>RMS</sub>	700	1000

### DIMENSIONS [mm]



Type	Historical P/N:	L ±0,2	Ø D ±0,2	Ø d ±0,02
<b>BWF110</b>	BWF237 - 0	9,9	3,6	0,8
<b>BWF210</b>	BWF236 - 0	14,3	5,7	1,0 *

\* Special lead diameter 0,8mm available

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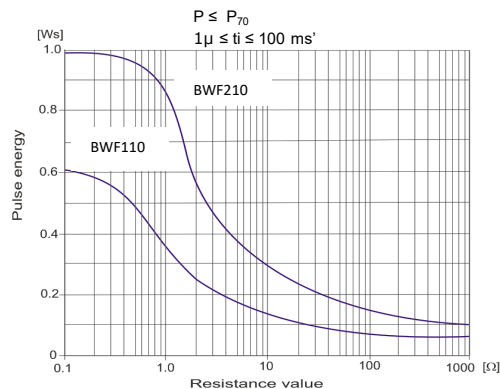
## PERFORMANCE DATA

Type		<b>BWF110</b>	<b>BWF210</b>
Historical Part Number	AXIAL	BWF237-0	BWF236-0
	SMD	RZF7	RZF6
Derating Linear	[°C]	70...175 (0W)	
Climatic Category		55/175/56	
Failure Rate <i>(Total, <math>\theta_{\sigma}</math>, max, 60[%] cont. lev.)</i>	[ $10^{-9} h^{-1}$ ]	appr. 100 depends on value	
Endurance <i>IEC60115-1 clause 4.25 (<math>P_{70}</math>, @ 70[°C], 1000[h])</i>	±[%]	5,0	10,0
Damp Heat, Steady State <i>IEC60115-1 clause 4.24 (40[°C], 93[% r.h.], 56[d])</i>	±[%]	2,0	
Climatic Sequence <i>IEC60115-1 clause 4.23</i>	±[%]	2,0	
Resistance to Soldering Heat <i>IEC60115-1 clause 4.18 (260<sup>±5</sup>[°C], 10<sup>±1</sup>[s])</i>	±[%]	0,2	
Terminal Strength	±[%]	1,0	
Terminal Tensile Strength	[N]	40	
Solderability <i>IEC60068-2-20 (245<sup>±5</sup>[°C] 3<sup>±0,5</sup>[s])</i>		Solder bath method (> 95% coverage)	
Marking <i>IEC60062</i>		Color code (5 th band (blue) for failsafe version)	

## TEMPERATURE COEFFICIENT

New P/Nr. Type	Historical P/Nr:	Temperature Coefficient ( ppm K-1 )						
		TC ±1800	TC ±1000	TC ±800	TC ±600	TC ±400	TC ±300	TC ±150
<b>BWF110</b>	BWF237 - 0	—	OR1	—	OR11 ... OR18	—	OR2 ... OR68	OR75 ... 1K
<b>BWF210</b>	BWF236 - 0	OR1	OR12 ... OR16	OR18 ... OR68	—	OR75 ... 1K	—	—

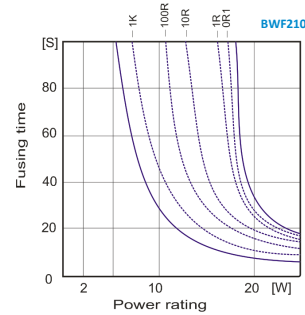
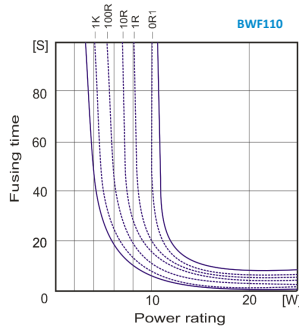
## PULSE PERFORMANCE



The curves are expressing the range, where no substantial effects are caused of recurrent pulses.  
A single pulse with a 3 – 5 times higher value will cause the destruction of the resistor

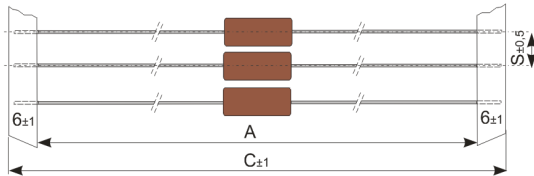
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## FUSING TIME



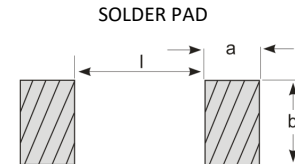
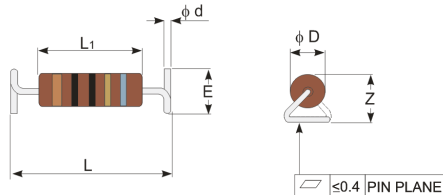
## PACKAGING

The standard packaging for BWF in axial type is taped, dimensions below.

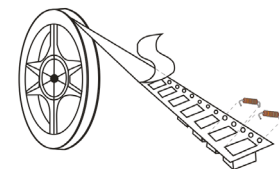
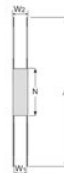
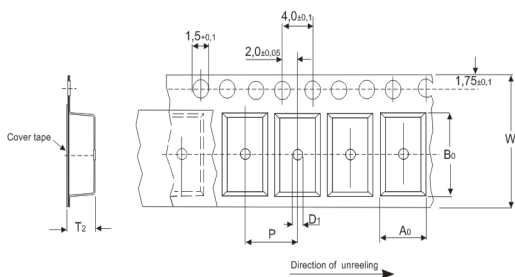


Type	Historical P/N:	Pack Code	Pieces	Forming Type (Inner Taping dim.)	A	C	S
BWF110	BWF237 - 0	T = Taped	1000	73-	73	85	5
BWF210	BWF236 - 0	Ammo pack	1000		73	85	10

## SMD LEAD CONFIGURATIONS



Type	Historical P/N	Size	L	L <sub>1</sub> ±0,2	Ø D ±0,2	Ø d ±0,02	E	Z max	l	a	b
BWF110	RZF7	6720	17,0±1,0	9,9	3,6	0,8	5,0±0,5	7,5	14	10	10
BWF210	RZF6	8424	20,9±1,0	14,3	5,7	1,0		8,0	16		



Type	A0	B0	W	D1	P	T2
BWF110	5,7	16,	24	2,0	8	7,6
BWF210	6,0	21,	32	2,0	12	8,1

Type	W1	W2	N	A
BWF110	25,	29,	90	33
BWF210	33,	37,	10	38

Type	Packaging	Pieces
BWF110	13(inch) Blister tape	1000
BWF210	15(inch) Blister tape	

### Ordering Code for SMD :



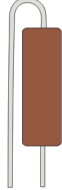
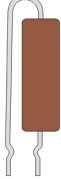
BWF	110	J	K	-	ZB-	150R	AA
Serie	* Power rating	Tol. J = ±5% K = ±10%	Pack-Code K = Blister Tape Reel	TCR - Base on spec.	Forming type ZB- Z version	R Value	Special AA = Standard

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## ALTERNATIVE LEAD CONFIGURATIONS

This type BWF is also available in a different pre-forming, as shown below, other's upon request.

### THOUGH HOLE VERSION

			
<p>Axial Goal Post (AG-)</p>	<p>Axial Goal Post Kink (AK-)</p>	<p>Radial (RD-)</p>	<p>Radial 2 Kink (RK-)</p>