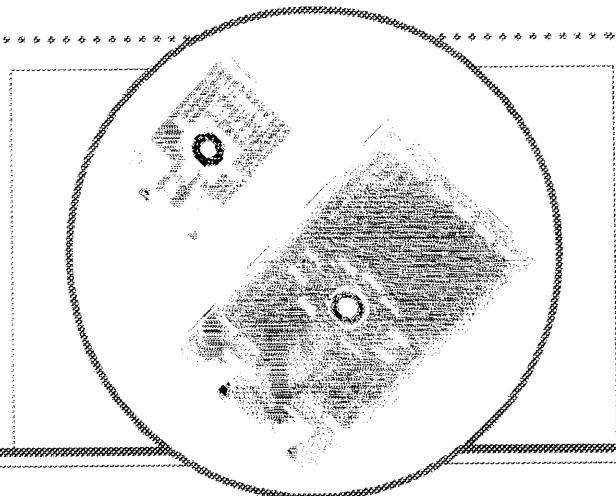


Ultra Low Profile Dynamic Braking/Power Resistors

TT *electronics*
Welwyn Components

WDBR Series

- Simple construction, lower installation cost
- 2kW and 5kW versions
- Failsafe
- Low inductance
- UL and IP approval pending
- Enables reduction in overall product size



This new range of thick film on steel planar power resistors offers high pulse withstand capability, compact footprint and low profile, to many demanding applications including dynamic motor braking and industrial welding.

Electrical Data

	WDBR2	WDBR5
Resistance range	Ω	5R0 to 270R
Standard values	E12	±20%
Max ΔR at rated pulse load (te)	ΔR	<±5%
Max pulse power (min 50000 cycles as per Fig 2)	kW	5
Stability (nominal load) after 50000 cycles	°C	365
Max resistor 'hot spot' temperature	V DC	2500
Min dielectric withstand voltage	W	16000
Max single pulse power (1ms pulse non-repetitive)	W	300
Max continuous load	W	100
Derating		See Fig 1
Inductance (typical)	μH	<5

Testing carried out on a heatsink (thermal resistance 0.5°C/W), force cooled at 15 m/s air velocity for 50000 cycles.

Power Derating

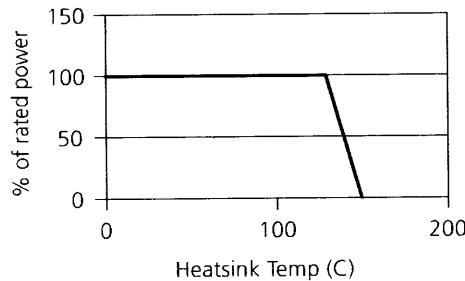


Fig 1

Duty Cycle 2s on (pulsed) 8s off

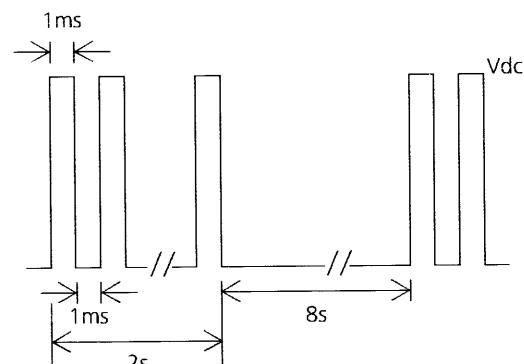
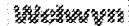


Fig 2

General Note

Welwyn Components reserves the right to make changes in product specification without notice or liability.
All information is subject to Welwyn's own data and is considered accurate at time of going to print.


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WDBR Series

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Physical Data

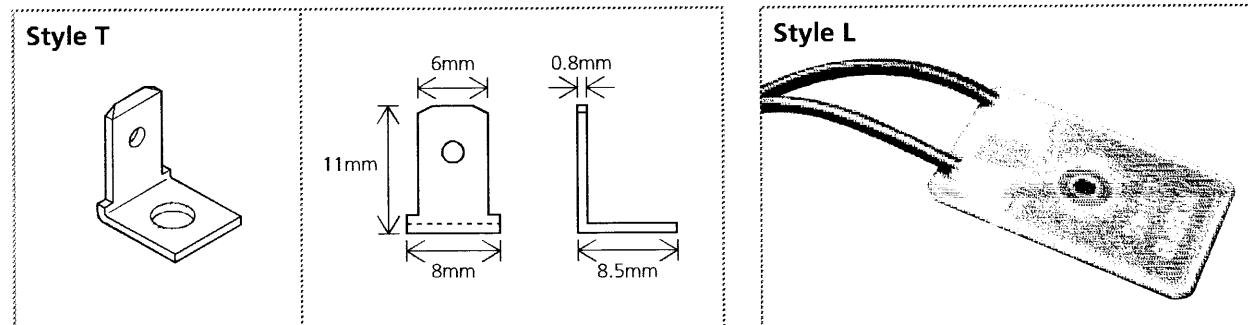
Dimensions (mm)							
Type	L	W	t	BD	a	b	Note A
WDBR2	60.96	40.64	0.9	5.3	4.75	13	See termination style
WDBR5	122	70	0.9	5.3	13	24	

Termination Style

WDBR resistors are available with push-on connections (T) or flying leads (L), as detailed below:

Style T, standard push-on connections as shown below are fitted to the resistor.

Style L, flying leads, 250mm long are attached to the resistor these are rated at 30A. The cable used conforms to BS7211, low smoke zero halogen insulated power cable. The soldered joint is protected using an epoxy encapsulant.



Application Notes

It is important to select a heatsink with low thermal resistance (typically $\leq 0.12^\circ\text{C}/\text{W}$) to enable the component to operate at its continuous power rating. Forced air cooling is required to maintain the specified temperature limits.

A thermal grease (e.g. Dow Corning DC340 or equivalent), should be applied between the heatsink and the resistor. The resistor should be mounted using an M4 screw head bolt, torqued to a maximum of $2.5 \pm 10\%$ Nm. The mounting area of the heatsink must have a surface finish of $\leq 6.3\text{ }\mu\text{m}$ with a flatness of $\leq 0.05\text{mm}$.

WDBR resistors will 'failsafe' (open circuit) under overload (fault) conditions whilst maintaining a dielectric withstand of 1kV minimum.

Ordering Procedure

Specify type reference etc as shown in this example of a WDBR2 120R 20% with flying leads

Type	WDBR	2	L	120R
Power rating				
<input type="checkbox"/> 2	2kW			
<input type="checkbox"/> 5	5kW			
Termination style				
<input type="checkbox"/> L	Flying leads			
<input type="checkbox"/> T	Push-on connectors			
Value (use IEC 62 code)				

For additional information or to discuss your specific requirements please contact our Resistor Applications Team using the contact details below.