

# PRECISION WIREWOUND PRINTED CIRCUIT BOARD & RADIAL LEAD RESISTOR

ISO-9001  
Registered



## PC, HR, 4000 SERIES MIL-R-93 (RB) & MIL-R-39005 (RBR) & COMMERCIAL STYLES

Welded Terminations

Wire terminations made at top of resistor  
-Protects joints from solder bath damage  
-Body acts as heat sink providing additional termination protection

Custom designs available



Insulated stress relieved windings

Optional lead materials

Different lead spacing furnished on request

- 0.100 to 0.600 watts
- Tolerance to  $\pm 0.01\%$  ( $25^{\circ}\text{C}$ )
- Non-inductive windings available
- TC's from  $\pm 2$  ppm/ $^{\circ}\text{C}$  to  $+6000$  ppm/ $^{\circ}\text{C}$
- Meets or exceeds all applicable MIL-R-93 & MIL-R-39005 ratings

Miniature printed circuit resistors incorporate an uncommon number of production and design refinements to assure excellent resistance stability, close resistance tolerances, low TCR capabilities and high structural strength. To assure their high quality standards, premium grade selected wire is reverse pi wound with minimum stress on high temperature epoxy bobbins, permeated with a resilient inner cushion coat, and isolated from the external protective shell by a special dry air chamber.

To promote additional resistance stability and accurate initial calibrations all resistors are subjected to an extensive accelerated aging program. Weldable and/or solderable leads (a choice of lead material is available) are firmly anchored and bonded inside the bobbin for maximum structural strength. All resistor markings are impervious to printed circuit board cleaning solvents and lead spacing is sufficiently well controlled for automatic insertion on standard grid boards.

### SPECIAL SCREENING / ACCEPTANCE TEST:

Special tests can be performed on a 100% or sample basis, to meet individual customer requirements. Some of the available non-destructive test include:

- Short Time Overload
- Thermal Shock
- Temperature Coefficient of Resistance
- Radiographic Inspection

Each of these tests is designed to detect a spectrum of potential resistor defects. Consult the factory for recommendations and a quotation on special screening or acceptance tests to meet your needs.

### ELECTRICAL SPECIFICATIONS:

IRC/Shallcross Style**	MIL-R-93/ MIL-R-39005 Style	Wattage		Resistance (ohms)		Maximum Working Voltage
		MIL	Comm*	MIL	Comm*	
		125°C	85°C	Max	Max	
HR-8	RBR71	0.125		150K		300
4060/PC8	RB71	0.125	0.250	100K	500K	300
4065	RB70	0.250	0.333	301K	1.5M	150
4061	---	---	0.250	---	800K	300
4067	---	---	0.400	---	3M	300
HR 340	RBR81	0.100		250K		300
HR 341	RBR80	0.100		120K		150

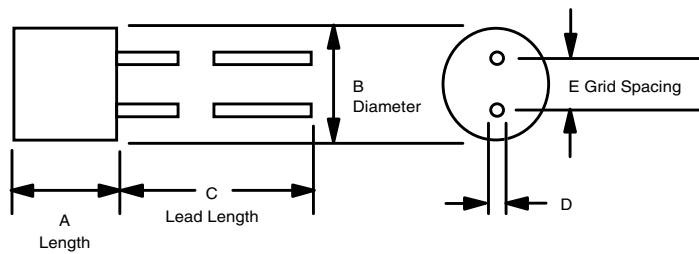
\*Commercial ratings may be applied at 125°C provided 175°C max. operation temperature is permissible. \*\*Available as High Reliability styles with complete documentation.

**PC, HR, 4000 SERIES DIMENSIONS (Inches and (mm)):**

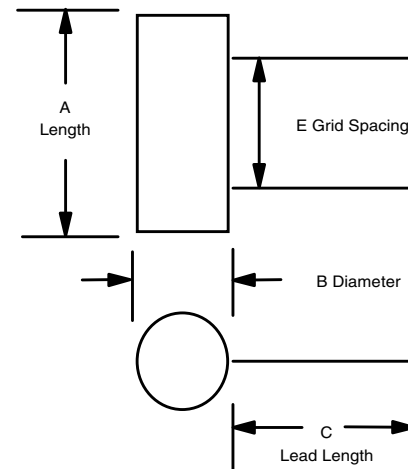
IRC Shallcross Style	A	B	C	D	E
	Inches (mm) ±0.032 (±0.8)	Inches (mm) ±0.025 (±0.6)	Inches (mm) Minimum	Inches (mm) ±0.002 (±0.05)	Inches (mm) ±0.010 (±0.25)
HR-8	0.312 (7.9)	0.250 (6.3)	1.0 (25.4)	0.025 (0.6)	0.200 (5.0)
4060/PC-8	0.312 (7.9)	0.250 (6.3)	1.0 (25.4)	0.025 (0.6)	0.200 (5.0)
4065	0.500 (12.7)	0.375 (9.5)	1.0 (25.4)	0.032 (0.8)	0.200 (5.0)
4061	0.375 (9.5)	0.250 (6.3)	1.0 (25.4)	0.025 (0.6)	0.200 (5.0)
4067	0.437 (11.1)	0.437 (11.1)	1.5 (38.0)	0.032 (0.8)	0.300 (7.8)
HR 340*	0.500 (12.7)	0.160 (4.0)	1.0 (25.4)	0.020 (0.5)	0.406 (10.3)
HR341*	0.325 (9.3)	0.160 (4.0)	1.0 (25.4)	0.020 (0.5)	0.225 (5.7)

Standard Temperature Coefficient ±10ppm/°C 100Ω up, ±15ppm/°C 10Ω to 100Ω, ±30ppm/°C 1Ω to 10Ω, ±90ppm/°C below 1Ω.  
Standard Lead Material - Tinned copper weld NOTE: Optional temperature coefficients available. Consult factory for details.

Fig. I (Round)

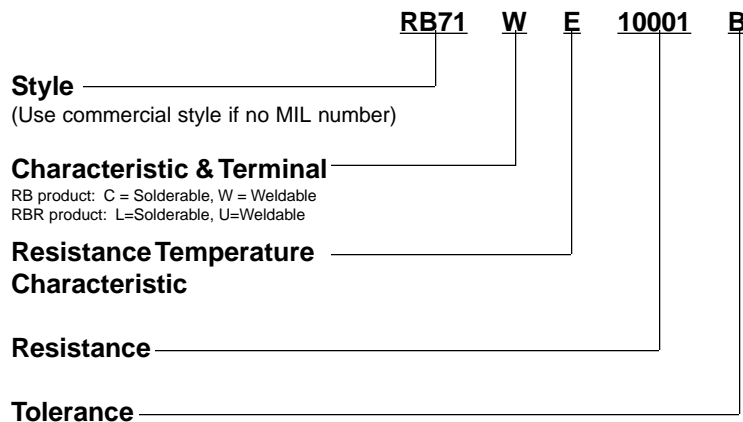


\*Fig. II (Radial)



**HOW TO ORDER**

Sample Part No.:



For commercial equivalents:  
Style - Resistance - Tolerance - TCR