

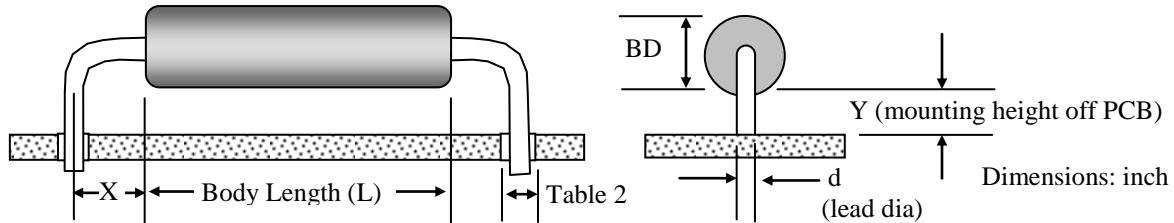
SYM	DATE	REVISION RECORD	APPRV
-	1/31/97	Release	MJA
A	4/29/02	Was FA2646	MJA
B	10/03/02	Add App Notes	MJA
C	7/8/04	Add LVF & LVH	MJA
D	10/12/05	Add Table 2	MJA
E	1/12/06	Add LF2	MJA



RESISTORS · CAPACITORS · COILS · DELAY LINES

# RCD Engineering Guide R-37

## Mounting Guidelines for RCD Leaded Resistors and Inductors



Body Length (L)	Lead Dia (d)	X (Min.) GROUP A	X (Min.) GROUP B	X (Min.) GROUP C
<0.200"	<.022"	.033	.050	.033
	.022 - .026	.050	.075	.050
.200 - .449"	<.034"	.065	.075	.065
	.034 - .042	.080	.125	.080
	.043 - .052	.100	.175	.100
.450 - .999"	<.034"	.080	.100	.080
	.034 - .042	.100	.150	.100
	.043 - .052	.125	.200	.125
1.00" - 1.499"	<.034"	.100	.125	.100
	.034 - .042	.125	.175	.125
	.043 - .052	.150	.225	.150
1.50" or longer	<.034"	.100	.150	.100
	.034 - .042	.125	.200	.125
	.043 - .052	.150	.250	.150

**Table 2. Recommend PCB Hole Diameter (unless indicated otherwise)**

Nominal Lead Dia	Recommended PCB Hole Dia (before plating)	Recommended PCB Hole Dia (after plating)
.020 (24 awg) [0.5mm]	.028 (drill #70)	.025
.025 (22 awg) [.63mm]	.035 (drill #65)	.032
.028 (21 awg) [0.7mm]	.039 (drill #61)	.036
.032 (20 awg) [0.8mm]	.042 (drill #58)	.039
.036 (19 awg) [0.9mm]	.0465 (drill #56)	.0435
.040 (18 awg) [1mm]	.052 (drill #55)	.049
.051 (16 awg) [1.3mm]	.0635 (drill #52)	.0605
.064 (14 awg) [1.6mm]	.076 (drill #48)	.073
.081 (12 awg) [2mm]	.0935 (drill #42)	.0905

GROUP A: RCD Series BW, CF, CFZ, FP, FR, GP, GPS, HF, LPT, MF, MFA, P, PCN, PMF, RG, RH, ZJ

GROUP B: RCD Series AL, ATB, CA, CC, HM, LOR \*, MA, P, PF, PTB, Q, SA, TF, UHV\*, ULV

GROUP C: RCD Series 100, 200, ATS, MG, PW, RMF, RSF

### Application Note #1 LOW RESISTANCE VALUES:

Resistance values are generally measured at 3/8" from each end of body as an industry standard. The effect of lead resistance can be appreciable on low resistance values (<10 ohm) especially in tight tolerances. Consideration to mounting layout and power derating should be taken to achieve 3/8" in-circuit lead length. RCD can also offer resistors measured at customer-specified dimensions.

### Application Note #2 MOUNTING HEIGHT:

Recommended minimum mounting height off PCB for Group A and B resistors is  $(W_{ACTUAL}/W_{RATING}) \times BD$ . Example: a resistor is rated 2W at 25°C and is going to be used at 0.5W at 25°C, the recommended PCB clearance is  $(0.5 / 2) \times BD$ . If BD (body diameter) is 0.2" then the part should be positioned  $.25 \times .2 = .05"$  or greater off the PCB. If in the same example, the ambient temperature around the resistor (due to room temp and heat influences from other components) is above 25°C, then the wattage would need to be derated according to individual data sheet to determine the proper  $W_{RATING}$ . Inductors can be mounted directly on PCB.

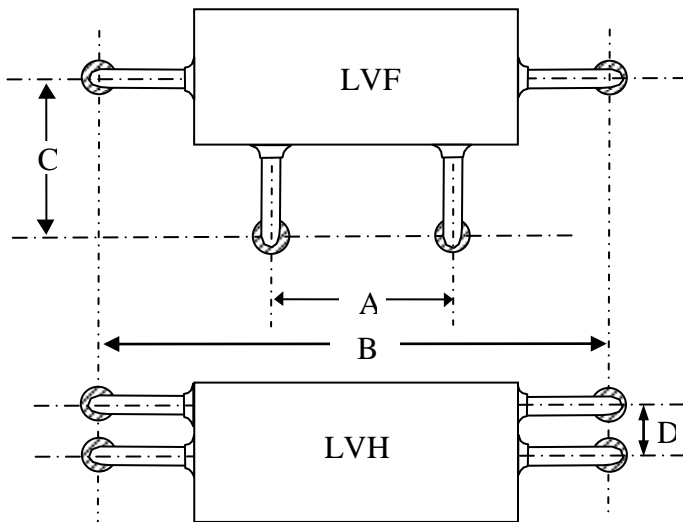
Recommended minimum mounting height off PCB for Group C resistors is  $(W_{ACTUAL}/W_{RATING}) \times BD \times 2$ .

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## Series LVF & LVH Recommended Forming Dimensions and Mounting Span

Hole Dia: .039” on 2W and 3W, .049” 5W-25W (some customized models utilize heavier gauge lead wires to enable operation at higher amperage, mounting holes need to be sized accordingly).

Lead Forming: form axial leads to dimension B and radial leads to dimension A. Apply stress relief to lead wires while forming to prevent damage to ceramic and/or internal connections. Illustration displays radial leads formed at 90° to body but in some instances, the radial leads may need to be bent at slight angle to account for variation in lead positioning/spacing.



RCD Type	A	B	C	D
LVF2S, LVH2S	.45	.84	.325	.08
LVF2, LVH2	.50	.95	.335	.08
LVF3, LVH3	.56	1.18	.405	.10
LVF5, LVH5	.56	1.18	.425	.10
LVF7, LVH7	1.00	1.72	.425	.10
LVF10, LVH10	1.38	2.36	.455	.10
LVF15, LVH15	1.38	2.36	.500	.125
LVF20, LVH20	2.00	2.95	.500	.125

## Series LF Recommended Mounting Span

