



Data Sheet

RM series ferrite cores

RS stock numbers 228-214 to 228-258

A range of 5 of the most popular PCB mounting ferrite cores covering three sizes. Of square design which allows maximum board utilisation, this series enables transformers or inductors to be constructed to meet exact customer requirements. The core material is equivalent to the commonly known grades: A13-Q3-N28. Each core is supplied in kit form and consists of the following: one pair of matched half cores, one single section bobbin with integral pins on an 0.1 in grid, one pair of retaining clips with earth spikes and one core adjuster.

To determine the number of turns required for a particular inductance use the following formula:

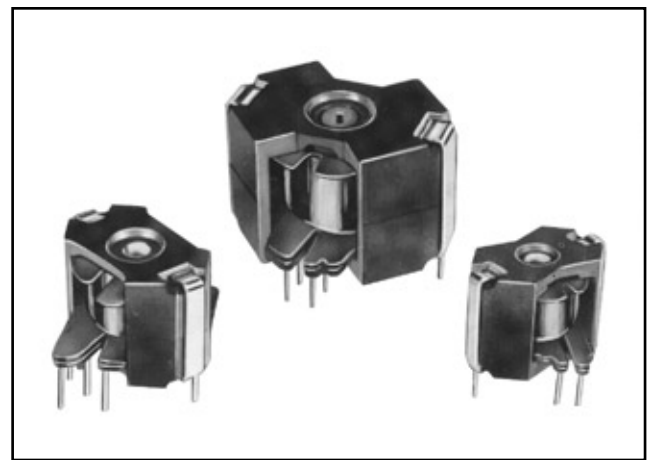
$$\text{No. turns} = \sqrt{\frac{L}{A_L}}$$

Where L = inductance in nH (10^{-9}H).

For frequencies in excess of 30kHz, the use of stranded wire is beneficial when maximum Q is required.

Features

- 5 versions available in three popular sizes
- PCB mounting
- Compact design
- Mounting pins have 2.54mm (0.1in) spacing.



Properties of core assemblies at 25°C (without adjusters)

RS stock no.		RM6 228-214	RM6 228-220	RM7 228-236	RM10 228-242	RM10 228-258
Inductance factor (nH/turns ²)	A_L	160 ±2%	250 ±2%	250 ±2%	250 ±2%	400 ±2%
Turns factor (turns for 1 mH)	a	79.06 ±1%	63.25 ±1%	63.25 ±1%	63.25 ±1%	50.00 ±1%
Effective permeability	μ_e	109.5	171.1	146.0	99.67	159.5
Temp. coeff. of μ_e (+25 to 50°C) ppm/°C		51 min. 154 max.	80 min. 241 max.	73 min. 219 max.	50 min. 149 max.	80 min. 239 max.
Adjuster range		+20%	+14%	+15%	+17%	+20%
Max. residual plus eddy current core loss						
Tangent $\tan\delta_{\sigma_r+f}$ at 30 kHz		0.34×10^{-3}	0.53×10^{-3}	0.47×10^{-3}	0.32×10^{-3}	0.51×10^{-3}
at 100 kHz		0.58×10^{-3}	0.91×10^{-3}	0.82×10^{-3}	0.60×10^{-3}	0.96×10^{-3}
Recommended frequency range (kHz)		5.5 to 800	3.5 to 700	3 to 650	2 to 650	1.2 to 500
Energy storage capability (mJ)	Ll^2_{sat}	0.383	0.245	0.406	1.731	1.082
B_{sat}	mT	250	250	250	250	250

Magnetic properties of cores

	symbol	RM6	RM7	RM10
Effective path length	l_e	26.9mm	29.6mm	41.7mm
Effective path area	A_e	31.3mm ²	40.3mm ²	83.2mm ²
Effective volume	V_e	840mm ³	1190mm ³	3470mm ³

Maximum turns accommodated on bobbin

wire dia. (mm)	RM6	RM7	RM10	wire dia. (mm)	RM6	RM7	RM10
0.2	205	306	612	0.56	25	36	87
0.224	160	250	484	0.71	19	33	59
0.25	127	209	402	0.8	13	19	44
0.315	87	131	246	1.0	9	11	25
0.4	47	76	160	1.25	4	9	19
0.5	36	50	98	1.5	3	7	11

Figure 1 Exploded view of kit

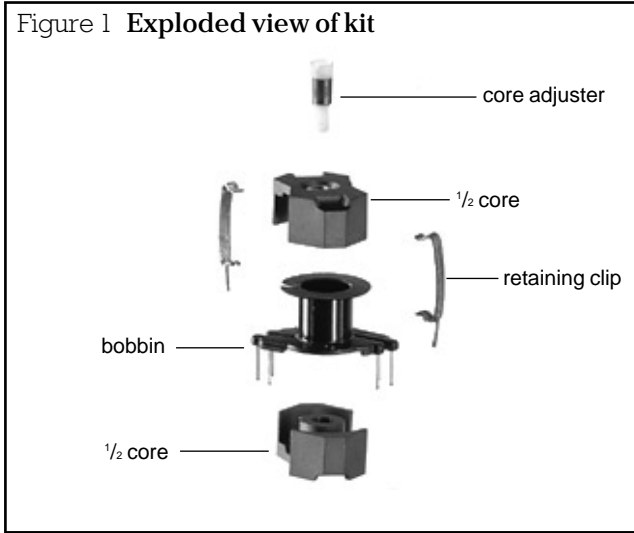


Figure 2 Core dimensions

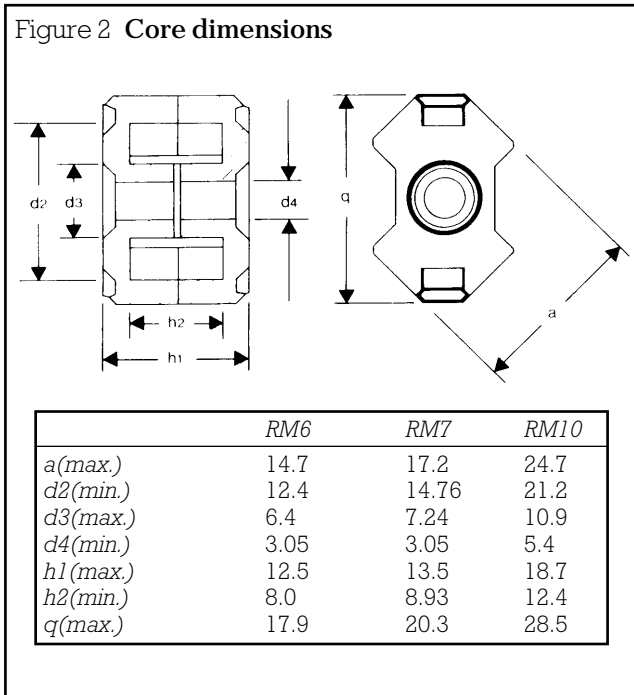
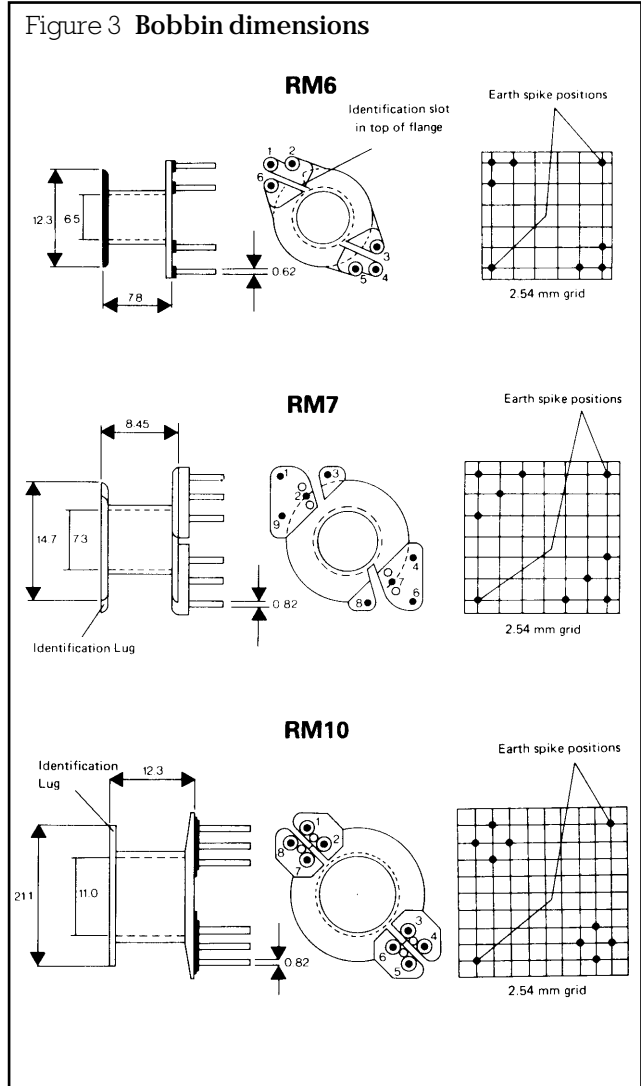


Figure 3 Bobbin dimensions



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