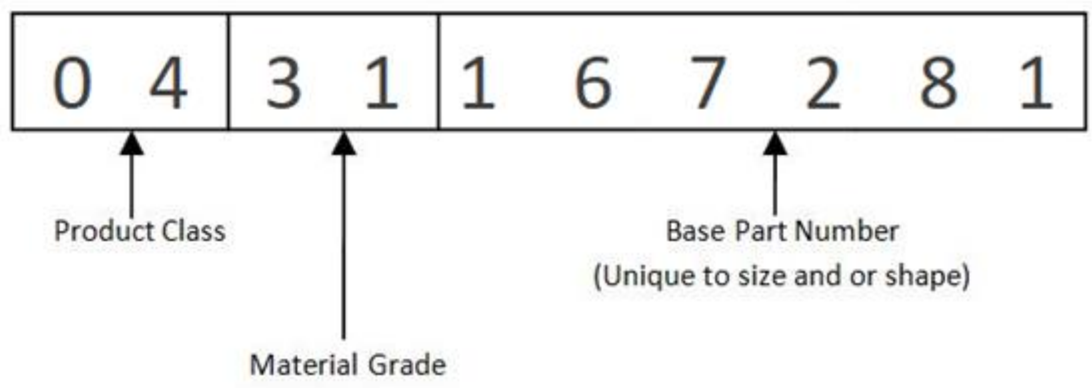
ng Unknown Fair-Rite Round Cable Snap-Its

Fair-Rite's Round Cable Snap-Its have the Fair-Rite logo and the term V0 engraved as the only markings for production parts. The plastic cases are charcoal-colored and are polypropylene material. Multiple ferrite materials use the same plastic case, so if parts are separated from the original packaging it is difficult to know one part (material type) from another. However, it may be possible to determine the part number of an unknown Snap-it with some further examination.

All of the Round Cable Snap-It part numbers begin with "04" with the third and fourth digits of the part numbers indicating the material type. The remainder of the part number (base part number) will be indicative of the size.



The way to determine the part in hand when no labeling is available is a process of elimination. First, one must determine the Snap-it style as shown in the [figures in Fair-Rite's catalog and on the website.] Then size measurements (with a caliper) can whittle down the possibilities – where one should be able to determine the base part number. Then it becomes a matter of determining the material type.

For Round Cable Snap-Its, the possible material types are: 75, 31, 43, 44, 46 and 61. The 75 material will have very shiny (almost mirror-like) mating surfaces. The 31 material (like 75 material) is a MnZn type and will display relatively low surface resistivity (< 1M ohms measured with a multimeter with probes firmly pressed against the ferrite surface at about 1 cm probe to probe distance).

The 43, 44, 46 and 61 materials are all high resistivity type materials and will display orders of magnitude higher surface resistivity than the MnZn type materials. An impedance analyzer would be the surest way to evaluate from this point, but most people do not have this resource available. For those who have the ability to measure inductance, measurements at low frequency (1 or 10 kHz) could be done (with the case closed) and the below table can be consulted. For inductance meters with low precision, multiple turn windings (N= # of passes through the aperture) could be used [Inductance = $N^2 \times A_L$]. Note: these parts are manufactured and specified for high frequency impedance, measured inductance is only relative.

Part Number	Material	Figure	A_L(uH/N^2)	Comments
0475181651	75	2	11	Low resistivity, shi
0475164281	75	2	15	Low resistivity, shi
0475178281	75	2	14	Low resistivity, shi
0475167281	75	2	13	Low resistivity, shi
0475164181	75	2	15	Low resistivity, shi
0475176451	75	2	23	Low resistivity, shi
Part Number	**Material**	**Figure**	**A_L(uH/N^2)**	**Comments**
0431178181	31	1	2.2	Low resistivity
0431173951	31	1	2	Low resistivity
0431164951	31	1	3.2	Low resistivity
0431164281	31	1	2.9	Low resistivity
0431178281	31	1	3.9	Low resistivity
0431167281	31	1	3.2	Low resistivity
0431164181	31	1	3.6	Low resistivity
0431176451	31	1	4.6	Low resistivity
0431173551	31	2	2.6	Low resistivity
0431177081	31	1	6.2	Low resistivity
2631181381	31	4	9.1	Low resistivity
Part Number	**Material**	**Figure**	**A_L(uH/N^2)**	**Comments**
0443178181	43	1	0.7	High resistivity
0444173951	44	1	1.7	High resistivity

0444164951	44	1	2.8	High resistivity
0443164251	43	2	3.1	High resistivity
0444164281	44	1	2.6	High resistivity
0443625006	43	3	0.5	High resistivity
0443178281	43	1	1.4	High resistivity
0443665806	43	3	0.5	High resistivity
0443167251	43	2	2.2	High resistivity
0444167281	44	1	2	High resistivity
0443164151	43	2	2.3	High resistivity
0444164181	44	1	1.6	High resistivity
0443800506	43	3	0.4	High resistivity
0443806406	43	3	0.6	High resistivity
0444176451	44	1	2.4	High resistivity
0444173551	44	2	1	High resistivity
0444177081	44	1	3.7	High resistivity
2644181281	44	4	1.1	High resistivity
Part Number	**Material**	**Figure**	**A_L(uH/N^2)**	**Comments**
0446173951	46	1	1.3	High resistivity
0446164951	46	1	1.5	High resistivity
0446164281	46	1	1.8	High resistivity
0446164251	46	2	1.5	High resistivity
0446167281	46	1	1.4	High resistivity

0446167251	46	2	1.7	High resistivity
0446164181	46	1	1.8	High resistivity
0446164151	46	2	2.1	High resistivity
0446176451	46	1	2.2	High resistivity
Part Number	**Material**	**Figure**	**A_L(uH/N^2)**	**Comments**
0461178181	61	1	0.35	High resistivity
0461164951	61	1	0.67	High resistivity
0461164281	61	1	0.78	High resistivity
0461178281	61	1	0.57	High resistivity
0461167281	61	1	0.78	High resistivity
0461164181	61	1	0.73	High resistivity
0461176451	61	1	0.81	High resistivity

In terms of relative measured inductance, for some parts the inductance difference between 31, 44, 43 and 46 materials is not much. Therefore, it is important to know the targeted suppression frequency to ensure a good choice regardless of the sample in hand.

- 75 material will be the best performer below 3 MHz.
- 31, 44, 43 and 46 materials are all broadband types (typically optimal at 10 – 200 MHz).
- 61 material will be best for frequencies generally above 200 MHz.
- 31 material will have a little extra performance below 15 MHz than the other 43, 44, and 46.
- 43 and 44 materials are both NiZn whose attenuation with frequency is almost identical.
- 46 material is a lower cost material and the tradeoff will be less performance than 31, 44 and 43, below about 100MHz.