

QRM

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Branches of the Wireless Institute
of Australia, Tasmanian Division.

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Tas. 7250

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MEETINGS

- Feb. 10 Northern Branch, clubrooms 34 Burke St. 8 p.m.
Feb. 14 North West Branch, Lakins Hall, Ulverstone 8 p.m.

CONTESTS

- Feb. 4 - 12 ARRL Novice Contest
Feb. 11 - 12 John Moyle Memorial National Field Day
Feb. 11 - 12 Ten-Ten QSO Party
Feb. 11 - 12 QCWA QSO Party
Feb. 18 - 19 ARRL DX CW Contest
Feb. 18 - 19 YL _ OM Phone Contest
Feb. 25 - 26 French Phone Contest
Feb. 25 - 26 THE ATHOL JOHNSON MEMORIAL CONTEST

- Feb. 18 Deadline for the March issue of QRM

Northern Branch Notes by Mac VK7CCC.

Greetings- So much has happened since the last notes appeared that it is difficult to remember all that's happened- However here goes.

At the November meeting members were advised that of the club funds \$1500 had been placed in an investment account and the balance in a chequeing account. Some of this money will be used to purchase items for the club rooms. To date we have acquired 30 new chairs, wood for shelving and we are about to acquire an electric urn.

Donations are flowing into the club in the form of books, items for the eventual museum and latest, a 6 metre rig donated by VK7ED., Thanks Ed. At the present time the radio journals are being catalogued, if you have occasion to use them please put them back in order.

Due to pressure of work Peter VK7PD has had to stand down as treasurer, his place has been taken by Tony VK7TP, I dont know where you get all the time and effort Tony !

The Northern members for the Amateur Advisory Committee are VK7JV and VK7BC both John and Frank therefore will also be the official observers for this area.

The pig roast in December went well, as did a few of the members. I'm sure Brian Eyre would fall down if he didn't have his glass to support him ! Everyone enjoyed it, some even stayed the night. David Chadderton has some slides available if anyone requires prints of the days effort. A good few items were left over from the auction these items will be available shortly at one of the meetings.

REMEMBER that very shortly a new committee will be required. It requires new faces for new ideas, without an active committee a club can become dormant. Think about it, if you can improve on the last lot, the club needs you. For those of you who are not sure what to do, but would like a job the present member will draw up a "duty statement" listing duties, contacts etc.. Put forward names if there is someone you think can do the job.

"Mini-Hamfest", The North West group are again challenging for the trophy and the tentative date is March 12th, place to be decided, keep your eye on this spot.

Thats all for now

73 Mac VK7CCC

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FOR SALE

Europa B transverter, mint condition, all modes.
Plugs in to Yaesu series, 28MHz I.F., 2 metres out \$180

FM transceiver Trio 7200G, R1, 2, ch40, 50 and other
dozen assorted plus 50 Watt amplifier \$170

Contact Mac VK7CCC

DX notes by Col VK7LZ.

Once again its back to work, although the last notes were written in November to write about DX during the preceeding two months would be less than useless and as we cannot predict the future we'll just have to concentrate on the present.

Listening on the bands over the last couple of weeks gives the impression that 28MHz is now a band to watch very closely, signals can be heard almost every day and although its mostly only JA's or W's 28MHz has always been a band to produce the unexpected so its well worth checking.

On 21MHz the same pattern exists although the range of stations is somewhat wider with the odd station from Africa and Europe being logged.

For those looking for new countries 14MHz is still the band warranting the most attention and VK7's AE, BC and HL have been constantly adding to their DXCC tally on this band. Over the last few days of limited listening during our evenings 40 countries have been logged and all seven continents. VK7BC recently copied ZS7SD, H5FXT and an S8 on 14MHz SSB at 2100Z however the W's were too strong and no QSO's resulted. 9N33 was another unusual call sign, this station was celebrating the 33rd birthday of the King. Conditions to Central America are at present quite good during our evenings and several of the rarer Caribbean area stations are constantly appearing on 14MHz SSB, from around 1100Z stations from AP, VU, EP, 9K, 4S, VS6 and USSR countries can be heard and QSO'ed with European stations also showing up but with rather less signal strength.

No listening and few reports have been received about conditions on 7 or 14MHz however VK7AE has been working W's on 3.5MHz SSB and QSO'ed a YBØ at 1400Z.

Now to what we may be able to QSO in the next few weeks; HFØPOL is expected to commence operating from King George Island any time now (if he hasn't already done so) this counts as the South Shetland Islands for DXCC the operator will be SP2BHZ, QSL to SP2BBD.

VU4RES Laccadive Islands should be a good one for many, the team will be headed by VU2TN and operation is due to commence in the latter half of February.

A35TV is a new licensed operator in Tonga and is restricted to 3.5MHz, guess this will be a CW only job.

QSL INFO

CN8CX - via - WBØMSZ	KM6FC/KH6 - via - W5RU
FK8CR P.O. Box 544 Noumea, New Caledonia	
J3AG Box 27 St.George, Grenada B.W.I.	
KC6DA Box 358 Ponape, East Caroline Islands	
KZ5UH Box 44 Fort Davis, Canal Zone	
VP2LDJ Box 335 St.Lucia, B.W.I.	
WA6OHZ/JQ9 - via - K5HWO	
ZD7PV Box 8 St.Helena Island via Cape Town	
9J2JN P.O. Box 222 Lusaka, Zambia	

VHF notes by Joe VK7JG.

Quite a lot has happened since writing the VHF notes for the December QRM. Openings have been to numerous to mention although activity was not as high as last year.

On 6 metres a lot of new call signs were worked and a large number of IC502's, 3 Watt SSB units were being used. VK9NI was active but not worked from VK7.

On December 3rd there was a very good opening to JA lasting about 3 hours, I came home late and worked 9 stations in an hour.

All Australian States have been worked although most openings were to VK2, 4 and 5.

Two metres has been good with many openings to VK3 and 5. On most contacts with VK3ZQV, Mike who is as strong as a local, 432MHz contacts were also made.

On January 2nd when 6 metres was wide open to VK2, Kerry VK2BXT was worked on 2 metres by myself running 10 Watts, Daniel VK7DA and Kevin VK7ZAH. The opening lasted 10 minutes and at times signals were up to strength 7. At about the same time John VK4ZWB in Dalby was hearing weak SSB signals on 144.1MHz but was unable to identify them.

Dont forget the Athol Johnson contest to be held in February, also the John Moyle National Field Day, both should provide plenty of VHF activity.

73 Joe VK7JG

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When Col Perger VKØJV/VK7KW, the Million Dollar Man and reluctant hero of the four Nation emergency hook-up, was in the Princess Margaret Hospital in Christchurch undergoing surgery, his wife Doreen was informed of the fact by Amateur Radio some time before being officially notified by the Australian authorities, in fact Doreen knew of it whilst the emergency operation was still in progress, she was again brought up to date on his condition when the operation was completed. Guess we must be catching up on the C.B. boys for efficiency.

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FOR SALE

Yaesu FT220, 2 metre multi mode 20 Watt transceiver with repeater xtals fitted. \$350

SE501, 27MHz 23 channel transceiver modified for use as a driver for a 2 metre transverter, matching xtals to cover 144.000 to 144.250MHz and 145.9 to 146MHz for Oscar use. \$120

contact Joe VK7JG, phone 443882 or P.O. Box 1311 L.ton

THE ATHOL JOHNSON MEMORIAL CONTEST

Following the poor support we received when holding the Athol Johnson Memorial contest in conjunction with the R.D. contest, it has been decided to hold the contest early in the year.

The contest will be held from 1800 local time 25th February to 1800 26th February.

Object, To promote VHF activity in VK7

Rules:

- 1) There is only one section, transmitting open.
- 2) All modes may be used, cross mode contacts are allowed but not cross band. except for satellite contacts.
- 3) Repeaters may be used, but score 1 point per contact.
- 4) A scoring contact may be made every 2 hours.
- 5) Entrants must operate within the terms of their license.

Cyphers: Before points may be claimed for a contact, a 5 or 6 figure number must be exchanged, this will consist of a R.S.(T). report plus three figures to commence with 001 and to increase by one for each successive contact.

Scoring: 2 points for each QSO on each of the VHF bands 52 , 144, 432, 1296 and above.
Repeater contacts 1 point .

Cover sheet to show, call sign, name and address, details of equipment, points claimed and a signed declaration that all rules and regulations have been observed.

All logs to be sent to,

The VHF Officer

P.O. Box 1311

Launceston 7250

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THE A.G. 4. DINNER is to be held at the Kings Meadows Hotel on Saturday 18th March starting 8 p.m.

Cost of dinner is \$8.50 per head. Accommodation is available at \$17.00 double

No of persons attending..... Call sign

Accommodation required yes/no details

Please return the above to J Gelston, P.O. Box 1311 Launceston as soon as possible.

There are quite a few transistor receivers available which have FM bands covering for example, 90MHz, 88 - 108MHz, 108 - 136MHz, 108 - 174MHz etc.

Having obtained one of these receivers, I thought it would make a useful monitor for 2-way services, amateur or otherwise.

The following circuit will mute the audio output of this type of receiver during no signal conditions, with a minimum of parts (see fig. 3).

The first thing to do is to identify the FM detector in the receiver and with a sensitive voltmeter find the diode in the circuit which will provide a signal sensitive voltage. Most receivers have a ratio detector so a voltage which goes positive or negative with received signal is readily available.

A typical detector circuit is shown in Fig.1 and I used the negative voltage obtained at point A to control the muting circuit, Fig. 3.

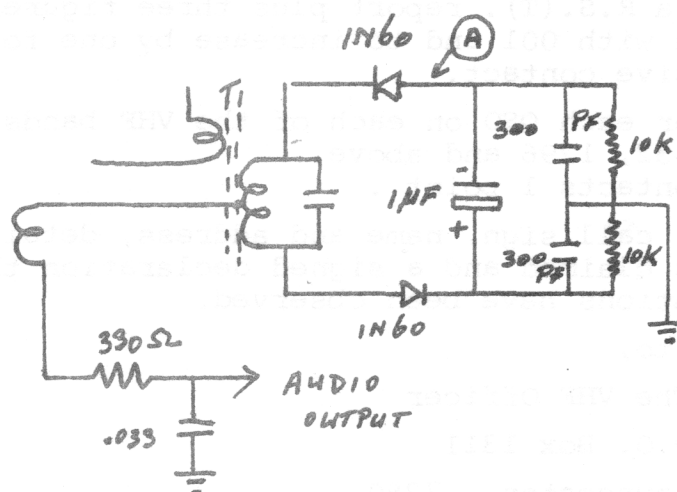


FIGURE 1

Next, identify the emitter of the driver stage transistor in the audio amplifier section of the receiver, point B in Fig.2 below.

The muting circuit, Fig.3, can then be connected between these two points. Any audio NPN transistor will work in the circuit.

The operation is simple. Under no signal condition the 100K pot is adjusted to cut Q2 off. This occurs when the voltage at point B exceeds - 0.5 Volt. As soon as a signal is received, Point A goes negative which cuts Q1 off and the bias voltage at point B returns to normal, restoring normal operation of the audio driver transistor Q2.

NOTE: Typical component values are shown in figures 1 and 2.

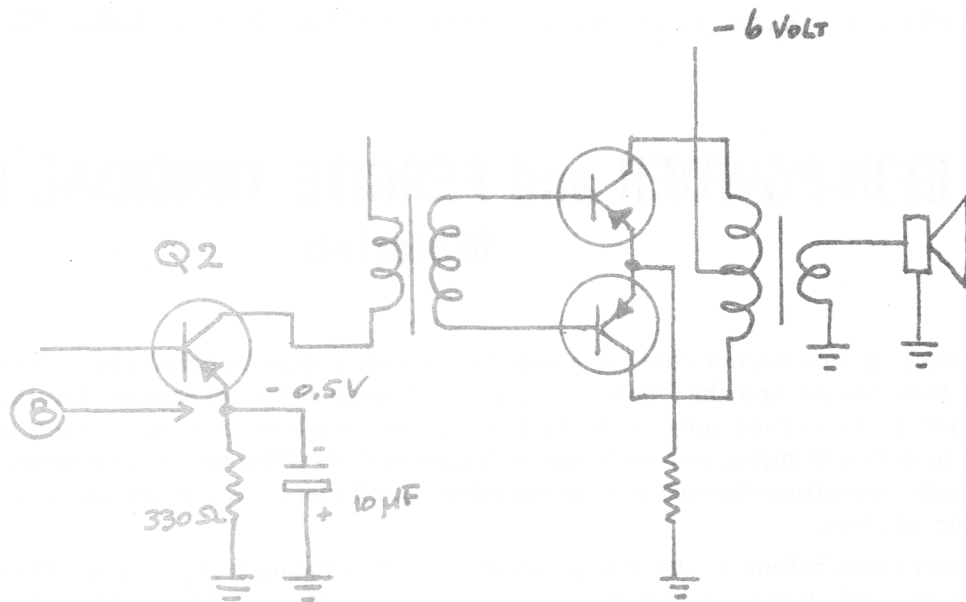


FIGURE 2

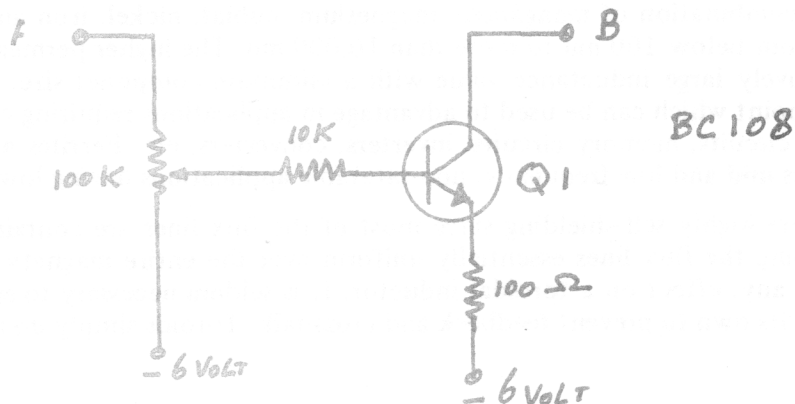


FIGURE 3

FOR SALE

DAIWA C166, HF antenna coupler, 500 Watts	\$90
18AVT, 5 band trap vertical antenna	\$85
Daniel Apted, 31 Vale St. phone 446886	

EICO three band (80, 40, 20) transceiver, modified as per A.R.
 in very good condition and going order, 5 new spare
 valves included, ideal for transverter. \$135
 Tony Polowy, 42a Quarantine Rd.

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IRON-POWDER and FERRITE TOROIDAL CORES Materials

When selecting a powdered core for a specific purpose it may be helpful to understand the basic differences between the Iron Powder and the Ferrite materials. Although there are several classifications of powdered cores, this paper shall be concerned only with the Ferrite and Iron-Powder groups. Each group offers a number of various sizes in different mixes and each mix will have slightly different characteristics in regard to permeability, frequency range, saturation-flux-density, temperature co-efficient, etc., giving the design engineer a wide choice in his selection of cores.

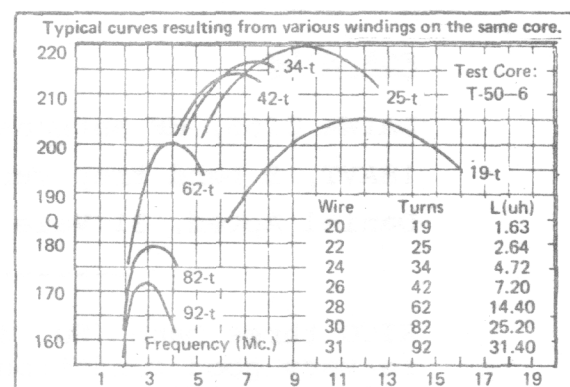
Iron-Powder cores belong to the low permeability class ranging from a μ of 90 down to a μ of 3 or less, making them an ideal choice for high and very high frequency work. They will yield inductors with an excellent 'Q' factor and extremely good stability over a wide range of temperatures, DC drives and flux levels. Iron-Powder cores are not easily saturated and therefore are especially useful in RF tuned circuits, I.F. circuits and frequency determining circuits where good stability is essential. They are also used in filter and noise circuits, Pi and 'T' networks, impedance matching transformers, tank circuits, wide band baluns, and etc. Cores of the No. 41 material are low 'Q' devices which are most commonly used for filter and noise circuits where high 'Q' is not required.

Ferrite materials are a combination of manganese, magnesium, cobalt, nickel, iron and zinc oxides, and can offer permeability factors from below 100 μ to more than 10,000 μ . The higher permeability provides the advantage of achieving a relatively large inductance value with a minimum component size. Also, they will have a somewhat lower saturation point which can be used to advantage in applications requiring core saturation, such as switching circuits, counting circuits, memory circuits, inverters, converters, etc. Ferrites are also very useful for shielding beads and numerous mid and low frequency, non-saturable applications having low flux density.

All toroidal inductors are highly self-shielding since most of the flux lines are contained totally within the toroidal form, thereby keeping the flux lines essentially uniform over the entire magnetic path. Stray magnetic fields will have very little, if any, effect on a toroidal inductor. It is seldom necessary to enclose each RF circuit in a little metal enclosure of its own to prevent feedback and cross-talk. Toroids simply do not talk to each other.

'Q'-Factor

When designing for the best figure of merit ('Q'), the following suggestions apply: Use the entire periphery of the core for winding and use the largest wire size that is practicable, space the turns if necessary. 'Q' is the inductive reactance divided by the copper resistance, so the wire or wires offering the least resistance will yield the highest 'Q'. It is sometimes advantageous to use smaller wire sizes in a bifilar or trifilar "ribbon" to create a low resistance-high 'Q' inductor. The 'Q' can be measured on a Boonton or Heathkit 'Q' Meter. Relative 'Q' can be observed by noting the depth of the dip on a GDO or Tunnel Dipper. Such readings are difficult on the smaller toroids and the use of a simple temporary link between the toroid and the GDO is suggested.



The 'Q' of a tuned circuit is sometimes purposely reduced by bridging the circuit with a "swamping" resistor. Inadvertant 'Q' reduction can result from swamping the toroid by incorporating it into a low impedance circuit. Use links, taps or secondaries to match impedance and thus protect the toroid 'Q'. The toroid lends itself to broadband RF transformers that offer wide spectral excursion and good efficiency. These are made by winding the primary and the secondary(s) bifilar or trifilar. This method is particularly effective in interstage work where extra tuning controls are not wanted. The high 'Q' of the toroid and the convenience of the "slug tuned" coil can be combined by connecting the two in series in a tuned circuit.

IRON-POWDER and FERRITE TOROIDAL CORES

POWER CAPABILITIES and SATURATION

There are several factors to be considered when calculating the power capabilities of a given size powdered toroidal core. Formulas and charts for this calculation are shown below. Core dimensions and material specifications will be found on other pages of this flyer.

- Chart 'A' will show maximum flux density limits for safe operating level of each material when used in a non-saturable application. When a Ferrite core is being considered for an application requiring saturation of the core, the flux density should be sufficient to drive the core well beyond the limits shown in the chart, see Hysteresis Loops for Ferrites elsewhere in flyer. Chart 'B' will show how the permeability of various materials will increase as the flux density increases. If the flux density should increase beyond a certain point, the permeability will start to decrease. This is also the point at which the core will begin to saturate. Chart 'C' will show how the permeability of various materials will decrease as the applied magneto-motive force (mmf) is increased.

AC Application: When AC is applied across a coil, use Faraday's Law to find the maximum AC flux density ('B'-Kilogauss). This figure should not exceed the limit shown in chart 'A' for the material being used. If exceeded, the core being considered is too small for use in a non-saturable application.

DC Applications: When DC is applied across a coil, use Ampere's Law to find the DC magneto-motive force (mmf) ('H'-Oersteds). With the aid of chart 'C', determine the percent permeability decrease for the material being used. If the initial permeability falls below 80% of its original value, the core must be larger if being considered for a non-saturable application.

Both AC and DC: If a substantial amount of both AC and DC are being applied across a coil, Faraday's Law and Ampere's Law may be re-arranged as shown below. Solve for maximum (total) flux density ('B'-kilogauss). If this figure exceeds the limit shown in chart 'A' for the material being used, a larger core should be considered if it is for a non-saturable application.

FARADAY'S LAW

$$B_{\max} = \frac{E_{\text{rms}} 10^5}{4.44 A_e N f}$$

AMPERE'S LAW

$$H = \frac{0.4 \pi N I}{l_e}$$

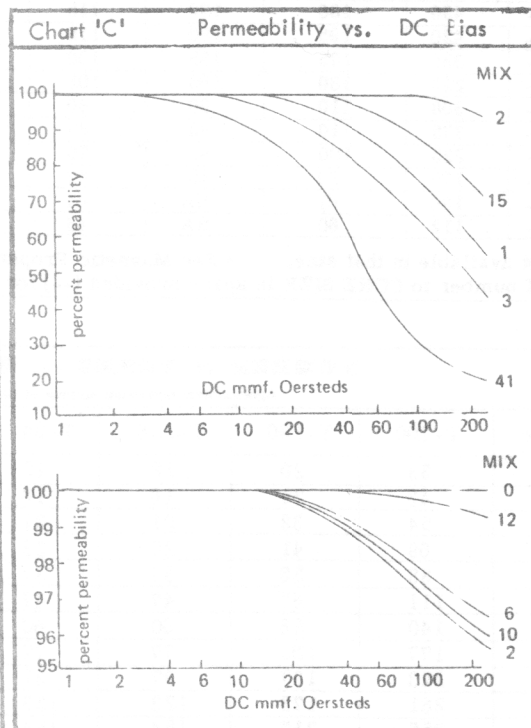
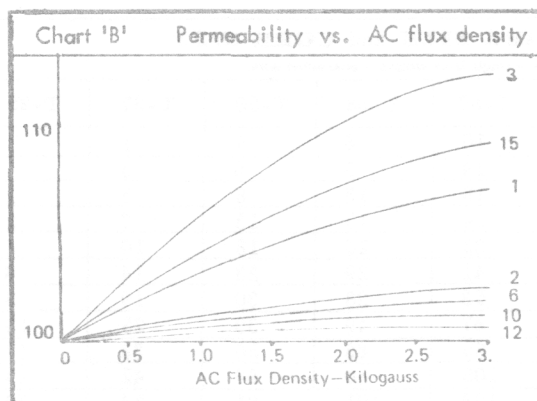
RE-ARRANGEMENT (both laws)

$$B_{\max} (\text{total}) = \frac{E_{\text{rms}} 10^5}{4.44 A_e N f} + \frac{I_{\text{dc}} A_L N}{A_e 10^5}$$

Where: B = flux density (kilogauss), H = magnetizing force (oersteds), A_L = Mfr's inductance index (uh/100 turns) E = volts (rms) f = frequency (hertz), I = current (amps), A_e = eff. cross-sectional area (cm)², l_e = eff. magnetic path length (cm), N = turns.

IMPORTANT: The A_L -value in the above formula is in uh/100 turns. This is standard for Iron-Powder materials, however the A_L -value for Ferrite materials is usually given in mh/1000 turns. Therefore, when working with Ferrite materials and the above formula a conversion must be made. To convert mh/1000 turns to uh/100 turns, multiply by a factor of 10. For instance, 50 mh/1000 turns is the same as 500 uh/100 turns.

Chart 'A' Flux density limits			
Iron Powder Cores		Ferrite Cores	
Material	Kilogauss	Material	Kilogauss
1	12	43	1.7
2	16	61	1.5
3	10	63	1.2
6	20	64	1.4
10	18	72	2.3
12	22	73	2.6
15	14	75	2.5
41	6	77	3.0



Rule-of-Thumb Estimate: For those who would like to make a quick estimate, and are willing to settle for an 'in-the-ballpark' figure, we offer the following suggestion: An Iron-Powder T-200-2 toroidal core will handle 1000 watts when used as an Antenna Balun, or 100 watts when used in a properly tuned LC tank circuit. A core one half the size will handle only about one quarter the amount of power when used in similar circuits. Using this as a guide, power capabilities of other smaller Iron-Powder toroidal cores can be estimated when used in like applications. This method of calculation should be used ONLY for Iron-Powder cores, not Ferrites.

Reminder 1: The power capability of a powdered toroidal core is related to the ability of that core to dissipate heat, therefore, attention should be given to ventilation as well as core size and core area.

Reminder 2: To minimize the possibility of saturation on power peaks, we advise the use of the largest practical size core that space and cost will permit.

IRON POWDER TOROIDAL CORES

Physical dimensions											
Core Size	Outer Diam. (in.)	Inner Diam. (in.)	Height (in.)	Cross Sect. Area cm ²	Mean Length cm	Core Size	Outer Diam. (in.)	Inner Diam. (in.)	Height (in.)	Cross Sect. Area cm ²	Mean Length cm
T-200	2.000	1.250	.550	1.330	12.97	T-50	.500	.303	.190	.121	3.20
T-184	1.840	.950	.710	2.040	11.12	T-44	.440	.229	.159	.107	2.67
T-157	1.570	.950	.570	1.140	10.05	T-37	.375	.205	.128	.070	2.32
T-130	1.300	.780	.437	.930	8.29	T-30	.307	.151	.128	.065	1.83
T-106	1.060	.560	.437	.706	6.47	T-25	.255	.120	.096	.042	1.50
T-94	.942	.560	.312	.385	6.00	T-20	.200	.088	.067	.034	1.15
T-80	.795	.495	.250	.242	5.15	T-16	.160	.078	.060	.016	0.75
T-68	.690	.370	.190	.196	4.24	T-12	.125	.062	.050	.010	0.74

IRON POWDER TOROIDAL CORES				AL VALUES (uh/100 turns)				ALL STOCK ITEMS		
CORE SIZE	41-Mix Green u=75 *	3-Mix Grey u=35 .05 - .5 MHz	15-Mix Rd & Wh u=25 .1 - 2 MHz	1-Mix Blue u=20 .5 - 5 MHz	2-Mix Red u=10 1 - 30 MHz	6-Mix Yellow u=8 10 - 90 MHz	10-Mix Black u=6 60 - 150 MHz	12-Mix Gn & Wh u=3 100 - 200 MHz	0-Mix Tan u=1 150 - 300 MHz	
T-200 --	755	360	NA	NA	120	105	NA	NA	NA	
T-184 --	1640	720	NA	NA	240	195	NA	NA	NA	
T-157 --	970	420	NA	NA	140	115	NA	NA	NA	
T-130 --	785	330	215	200	110	96	NA	NA	15.0	
T-106 --	900	405	330	280	135	116	NA	NA	19.2	
T-94 --	590	248	NA	160	84	70	58	32	10.6	
T-80 --	450	180	170	115	55	45	34	22	8.5	
T-68 --	420	195	180	115	57	47	32	21	7.5	
T-50 --	320	175	135	100	50	40	31	18	6.4	
T-44 --	229	180	160	105	57	42	33	NA	6.5	
T-37 --	308	110	90	80	42	30	25	15	4.9	
T-30 --	375	110	93	85	43	36	25	16	6.0	
T-25 --	225	100	85	70	34	27	19	13	4.5	
T-20 --	175	90	65	52	27	22	16	10	3.5	
T-16 --	130	61	NA	44	22	19	13	8	3.0	
T-12 --	112	60	NA	48	24	19	12	7.5	3.0	

NA - Not available in that size. * See Magnetic Properties Chart. Turns = 100 $\sqrt{\text{desired L (uh)} \div A}$, Value (above)
Add MIX number to CORE SIZE in space provided (--) for complete part number. All frequency figures optimum

NUMBER of TURNS vs. WIRE SIZE and CORE SIZE										
Approximate maximum number of turns - single layer wound - enamelled wire.										
Wire Size	T-200	T-130	T-106	T-94	T-80	T-68	T-50	T-37	T-25	T-12
10	33	20	12	12	10	6	4	1		
12	43	25	16	16	14	9	6	3		
14	54	32	21	21	18	13	8	5	1	
16	69	41	28	28	24	17	13	7	2	
18	88	53	37	37	32	23	18	10	4	1
20	111	67	47	47	41	29	23	14	6	1
22	140	86	60	60	53	38	30	19	9	2
24	177	109	77	77	67	49	39	25	13	4
26	223	137	97	97	85	63	50	33	17	7
28	281	173	123	123	108	80	64	42	23	9
30	355	217	154	154	136	101	81	54	29	13
32	439	272	194	194	171	127	103	68	38	17
34	557	346	247	247	218	162	132	88	49	23
36	683	424	304	304	268	199	162	108	32	30
38	875	544	389	389	344	256	209	140	30	39
40	1103	687	492	492	434	324	264	178	102	51

Actual number of turns may differ slightly according to winding technique. Chart prepared by Michael J. Gorion Jr. - WB9HFC

IRON POWDER TOROIDAL CORES

WINDING DATA

The following data is intended as a guide to help in the selection of suitable toroidal cores for your application. Each core/winding combination is shown at near maximum Q.

Core	L/100t ±5%	Wire	Turns	L(mh)	Q Test- Freq. (KHz)	Q
T-94-41	590 uh	#33	800	38.	15	46
T-80-41	450 uh	#30	400	7.9	30	43
T-130-3	280 uh	#28	200	1.14	60	142
		#28	400	4.2	80	176
		#30	800	18.	50	150
T-106-3	350 uh	#24	200	1.41	120	160
		#28	400	5.6	60	164
		#32	800	22.	30	126
T-94-3	248 uh	#28	100	.24	300	148
		#28	200	.88	200	148
		#30	400	3.58	100	158
T-80-3	180 uh	#28	100	.18	400	132
		#30	400	2.9	100	137
		#30	800	11.80	40	120
T-68-3	195 uh	#32	200	.82	200	130
		#33	400	3.4	100	125
T-50-3	175 uh	#32	100	.175	500	110
		#34	200	.620	200	108
T-37-3	110 uh	#33	100	.116	500	86
		#34	200	.480	300	96
T-25-3	100 uh	#34	50	.028	1000	66
		#34	100	.102	600	78
		#36	200	.380	400	86
T-12-3	60 uh	#36	25	.004	2000	32
		#40	50	.016	1500	32

Core	L/100t ±5%	Wire	Turns	L(uh)	Q Test- Freq. (MHz)	Q
T-130-2	110 uh	150/44	200	430.	.16	420
		220/44	170	253.	.20	500
T-106-2	135 uh	15/44	100	135.	.30	475
		#24	80	84.	1.	290
		#20	40	21.6	2.	360
T-94-2	84 uh	#30	125	130.	.90	232
		15/44	200	328.	.78	278
		15/44	400	1420.	.37	276
T-80-2	55 uh	#20	36	7.8	4.	280
		#26	80	37.	2.5	246
		#34	220	276.	.8	188
T-68-2	57 uh	#20	26	3.9	5.5	260
		#28	79	33.	2.5	240
		#34	187	192.	1.	190
T-50-2	55 uh	#20	19	2.08	6.4	207
		#30	79	33.	2.5	240
		#32	200	218.	.4	124
T-37-2	42 uh	#20	12	.64	8.	158
		#24	22	2.16	7.	170
		#26	28	3.34	6.	183
T-25-2	34 uh	#26	14	.72	12.	136
		#30	30	3.22	8.	162
		#36	65	14.5	5.	148
T-12-2	24 uh	#28	9	.19	21.	75
		#32	17	.65	15.	84
		#40	40	3.37	10.	85

Core	L/100t ±5%	Wire	Turns	L(uh)	Q Test- Freq. (MHz)	Q
T-94-6	70 uh	#16	25	4.7	5.	350
		#20	20	3.	6.	340
T-80-6	45 uh	#20	35	8.7	3.	339
		#16	20	1.1	10.	255
		#20	28	3.3	6.	299
T-68-6	47 uh	#20	23	2.42	10.	304
		#20	15	1.38	10.	270
T-50-6	40 uh	#22	33	5.1	6.	305
		#18	14	.36	14.	252
		#22	25	2.30	10.	260
T-37-6	30 uh	#26	42	7.5	6.	244
		#20	12	.48	18.	181
		#22	17	.37	14.	194
T-25-6	27 uh	#26	28	2.45	10.	195
		#24	10	.30	21.	152
		#28	20	1.10	15.	164
T-12-6	19 uh	#36	67	11.7	6.	138
		#30	11	.23	25.	92
		#34	18	.36	20.	90
T-80-10	34 uh	#36	25	1.06	15.	96
		#16	10	.41	20.	195
		#18	15	.83	15.	202
T-68-10	32 uh	#26	30	.91	10.	188
		#18	10	.37	20.	156
		#20	15	.79	15.	172
T-50-10	31 uh	#22	30	2.96	10.	176
		#20	10	.37	25.	178
		#20	15	.81	18.	190
T-37-10	25 uh	#22	20	1.38	13.	188
		#20	8	.20	30.	138
		#22	15	.61	20.	165
T-25-10	19 uh	#26	25	1.54	15.	163
		#22	7	.12	45.	136
		#24	9	.18	35.	141
T-12-10	12 uh	#28	7	.06	60.	120
		#30	11	.16	40.	101
		#32	14	.26	35.	87
T-37-12	15 uh	#20	4	.05	120.	142
		#20	6	.09	80.	132
T-25-12	13 uh	#22	6	.07	120.	127
		#26	10	.16	60	130
		#26	14	.28	45.	130
T-12-12	8.5 uh	#28	5	.04	160.	113
		#28	7	.06	120.	134
		#30	11	.11	100.	100

USEFUL INDUCTANCE AND TURNS FORMULA:

The desired inductance or number of turns, using a particular core, may be calculated with this formula when the inductance per 100 turns is known.

$$\frac{L_1}{N_1^2} = \frac{L_2}{N_2^2}$$

L_1 = Known inductance per 100 turns

N_1 = 100 turns

L_2 = Inductance (known or unknown)

N_2 = Number of turns (known or unknown)



AMIDON Associates

12033 OTSEGO STREET

NORTH HOLLYWOOD, CALIF. 91607

PRICE LIST

IRON-POWDER TOROIDAL CORES

T-12 - ()	(specify mix)	\$.25
T-16 - ()	(specify mix)	.30
T-20 - ()	(specify mix)	.35
T-25 - ()	(specify mix)	.40
T-30 - ()	(specify mix)	.40
T-37 - ()	(specify mix)	.45
T-44 - ()	(specify mix)	.50
T-50 - ()	(specify mix)	.55
T-68 - ()	(specify mix)	.65
T-80 - ()	(specify mix)	.80
T-94 - ()	(specify mix)	1.00
T-106 - ()	(specify mix)	1.35
T-130 - ()	(specify mix)	2.00
T-157 - ()	(specify mix)	2.50
T-184 - ()	(specify mix)	3.00
T-200 - ()	(specify mix)	3.25

FERRITE TOROIDAL CORES

FT-23 - ()	(specify mix)	\$.45
FT-37 - ()	(specify mix)	.55
FT-50 - ()	(specify mix)	.65
FT-82 - ()	(specify mix)	.80
FT-114 - ()	(specify mix)	1.20

FERRITE POT CORES (77 mix)

PC - 1408 - 77	\$ 1.11
PC - 2213 - 77	1.62
PC - 2616 - 77	1.83
PC - 3019 - 77	2.34

FERRITE SHIELDING BEADS

FB- () -101 (specify mix)	\$ 2.00/doz
FB- () -801 (specify mix)	3.00/doz
FB- () -901 (specify mix)	3.50/doz
FB- () -2401 (specify mix)	3.50/doz
FB- () -5111 (specify mix)	3.25/doz

MISCELLANEOUS

88 mh. Choke	\$.75
Glass - Electrical Tape (66' roll)	3.00
Q - Curve & Data Booklet	2.25

SHIELDED COIL FORMS

L - 43 - 1	\$ 1.38
L - 43 - 2	1.38
L - 43 - 3	1.38
L - 43 - 6	1.38
L - 43 - 10	1.38
L - 43 - 12	1.38

AMI-CAL TRANSFERS (Electronic words)

Ami-cal # 1 black	\$ 3.50
Ami-cal # 1 white	3.50
Ami-cal # 2 black	3.50
Ami-cal # 2 white	3.50

KITS

E-Z Etch PC Kit # 146	\$ 3.95
E-Z Etch PC Kit # 246	6.75
Antenna Balun Kit (1 Kw.)	5.00
RF Toroid Kit	1.50
Filament Choke Kit (10 A np.)	2.25

KIT COMPONENTS

Ferrite Rod (4 - inch)	\$ 1.50
Ferrite Rod (7 1/2 inch)	2.50
E-Z Etch Circuit board (4 x 6)	1.25
E-Z Etch Transfers (set of 3)	2.25
E-Z Etch Etchant (1/4 lb.)	1.25

WIRE: (Heavy 'ML' insulated)

AWG # 14 (per ft.)	\$.08
AWG # 12 (per ft.)	.10
AWG # 11 (per ft.)	.12
AWG # 10 (per ft.)	.15

WIRE: (Magnet) Sizes 16 thru 40

1/4 lb. Spools	\$ 1.59
----------------	---------

SPECIAL TOOLS

Burr Qwik	\$ 3.75
Unibit Drill	8.95

ORDER FORM

Part No	Quantity	Item and description	Price/ea.	Total

Total amount for merchandise\$ _____
Pack and Ship, Foreign - Airmail, (small packet) \$ 1.50
Total \$ _____

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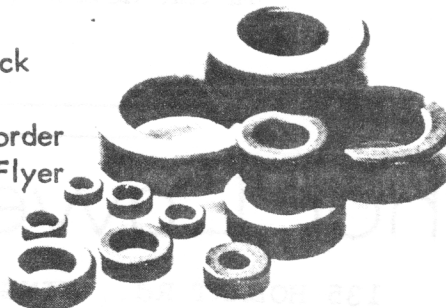
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