HEROS technology Ltd
general electronics

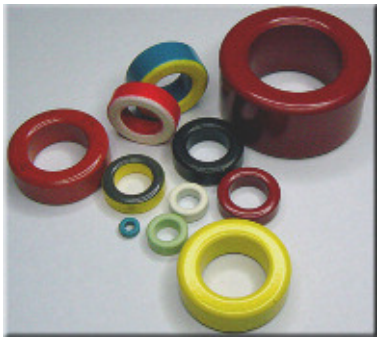
Toroid Iron Dust Powder Cores

for RF applications

Resonant Frequency (——) and Broadband Frequency Range (- - -)

Material	Range MHz	.002-0.05	.05-0.25	.25-500	.5-2	2-10	10-40	40-150	150-250	250-500	500-1000
42	0.03 - 0.80	——	——								
3	0.02 - 1	——	——	——	——						
8	0.02 - 1	——	——	——	——			- - -	- - -	- - -	
1	0.15 - 3		——	——	——	——					
15	0.15 - 3		——	——	——	——					
2	0.25 - 10			——	——	——	——		- - -	- - -	
7	1 -25				——	——	——				
4	3 - 40					——	——	——			
6	3 - 40					——	——	——	- - -	- - -	
10	15 - 100						——	——		- - -	- - -
17	20 - 200						——	——	——		
12	30 - 250						——	——	——	——	
0	50 - 350							——	——	——	- - -

Resonant Frequency Range is given to optimize Q and core loss.
Materials can be used outside resonant frequency range where optimum Q is not required.
Higher Q will be obtained in the upper portion of a material frequency range when smaller cores are used.
Likewise, in the lover portion of a materials frequency range, higher Q can be achieved when using the larger cores.



Material	Core Color
1	Blue/Clear
2	Red/Clear
3	Gray/Clear
4	Blue/White
6	Yellow /Clear
7	White/Clear
8	Orange/Clear
10	Black/Clear
12	Green/White
15	Red/White
17	Blue/Yellow
42	Blue/Red
0	Tan/Tan

Reference i.e.: T130-2
T = Toroidal Core
130 = Outer diameter dimension= 1.30 inch/33mm.
2 = Iron Powder Material Grade. (Red)

O.D. - is the outer diameter of iron powder toroid core
I.D. - is the inside diameter of iron powder toroid core
Height - is the height or the thickness of iron powder toroid core
Material Grade - is the Iron Dust material type.

Applications in function of core material grade

Materials: 2-4-6-7 Provide high Q up to 40MHz. Moderate wideband transformers in 200MHz-400MHz range. Most popular carbonyl iron on Amateur Radio and communication applications.

Materials: 1-3-8-15 High Q up to 1MHz. broadest band transformers in 50MHz-500MHz range. Highest carbonyl iron permeability.

Materials: 10-17 highest frequency carbonyl irons. Provide high Q up to 150MHz. typical material in cable TV applications. Moderate wideband transformers covering 400MHz-700MHz.

Material: 0 Non-magnetic material. Provides a solid form for winding coils due its excellent temperature stability. High Q at highest frequencies. Moderate band transformer covering a range from 600MHz to 1GHz.

Power Rating

Power Rating is defined as the product of the current flowing through a coil times the voltage being dropped across that coil.
For a given temperature rise due core loss, this product is independent of the number of turns wound on the core.

Core size Power Rating in Watts for 25° C temperature rise due core loss. Material grade 2 @ 1MHz.

Core	Watts	Core	Watts	Core	Watts
T30	21	T80	125	T200	794
T37	26	T94	160	T300	1127
T44	37	T106	236	T400	2108
T50	49	T130	331		
T68	88	T157	515		