铁硅磁粉心（DF系列）·

DF材料是由Si6.5%其余为铁的合金冶炼而成的合金粉末材料，由它生产出来的一种金属软磁粉心我们叫DF系列铁硅磁粉 心。与DS系列铁硅铝磁粉心制作工艺类似，也具有分布式气隙、耐高温和不容易产生音频噪音的特点，DF系列材料是一种新型合金材料，这种材料的工作温度可以达到200℃，不象铁粉心一样在使用过程中会发生老化问题。在一些领域，DF系列材料磁粉 心用来可以替代铁粉 心、MPP铁镍钼磁粉心或者铁镍高磁通磁粉心等，是一种性价比很高的产品。铁硅合金磁粉心提供了在中低频率的电感器和扼流圈应用下，更经济的一种高饱和材料(1.5T)的使用。与铁粉心相比，它具有不老化，功率损耗低的优点。与MPP铁镍钼磁粉心相比，它具有更优的直流叠加特性，更低的价格。与铁镍磁粉心相比，二者的直流叠加特性相当，损耗比铁镍磁粉心略高，但是价格要远低于铁镍高磁通磁粉心。

DF系列铁硅磁粉心由于其优越的直流偏置性能，非常适合用于开关电源中的储能滤波电感。与同样大小和磁导率的间隙铁氧体或铁粉 心相比，15,000高斯饱和度DF系列铁硅磁粉心提供更高的储存能量的能力。在大电流电感器中使用DF系列铁硅磁粉心，可显著降低电感器的体积和成本。在必须通过大型交流电压，而不产生饱和的噪音滤波电感器中，非常适合使用DF系列铁硅磁粉心。采用DF系列铁硅磁粉心可缩小在线滤波器的尺寸，因为需要的匝数比使用铁粉或铁氧体少。DF系列铁硅磁粉心具有很低的剩磁和高磁通，非常适用于功率因数校正电路，以及单向驱动的应用，如回扫变压器，脉冲变压器。

DF Iron-Silicon Material（DF Series）·

The 6.5 wt% Iron–Silicon material is a well known alloy and offers significant advantages, displaying excellent soft magnetic properties such as high saturation magnetization, near zero magnetostriction and higher resistivity. DMEGC DF series powder cores are manufactured from a complex composition of Iron–Silicon powdered particles, compacted into geometries such as toroid, block, E or U–core shapes. The powder metal compaction process produces a product with excellent core loss performance compared with the conventional silicon–iron tape wound core due to the distributed air gap feature.

DMEGC DF series powder cores have a typical 15,000 Gauss saturation flux density and core losses significantly lower than iron powder cores at high frequencies.The combination of high saturation flux density and high DC bias makes DF Iron–Silicon powder cores an ideal choice for higher power densities: where a low number of winding turns, low core loss and smaller size are required in today's power supply systems – especially in high energy storage applications.

The curie temperature of the DF Iron–Silicon powder material is over 500 ºC. High temperature operation of the cores does not significantly affect the magnetic properties. There are no organic binders within DMEGC DF series powder cores. They are, therefore, not subject to thermal aging when operated at elevated temperatures. DMEGC DF series powder cores can provide a 30% reduction in volume compared to Iron powder cores and are the best solution for large–current applications at a competitive price.

DF系列铁硅磁粉心材料特点·

磁心内有均匀分布的气隙。
饱和磁通密度大于15000Gs。
优良的直流叠加特性。
功率损耗低于铁粉心。
可以在200℃高温下使用不存在失效问题。
成本低，在很多领域可以替代铁粉心/铁硅铝/铁镍磁粉心。
磁导率包括从26到125的多种规格.

DF Series Powder Core Material Characteristics·

Evenly distributed gaps in the core.
Bs is up to 15000Gs.
Excellent DC Bias.
Core Loss is lower than iron powder core
No subject to thermal aging and material can work in 200℃
Low cost and it can substitute IPC/Sendust /Hi-Flux core in some applications.
Permeability is from 14 to 125

DF材料典型特性· DF MATERIAL TYPICAL CHARACTERIESTICS

特性 Characteristics	单位 Unit	参数 Parameter
初始磁导率 Initial Permeability	--	26~125
饱和磁通密度Bs Saturation Magnetic Flux Density	(Gs)	15000
居里温度 Curie Temperature	(℃)	>400
温度系数（-40℃~125℃） Temperature Coefficient	10^{-6}/℃	400
密度 Density	(g/cm^3)	6.0-6.5
温度范围 Temperature Range	℃	-40~200

DF 系列鉄硅磁粉心主要用途·

PFC电路中；

在线噪声滤波器；

开关电源（SMPS）中电感器；

脉冲变压器及回扫变压器；

太阳能逆变器。

DF Series Powder Core Main Applications·

PFC inductor.

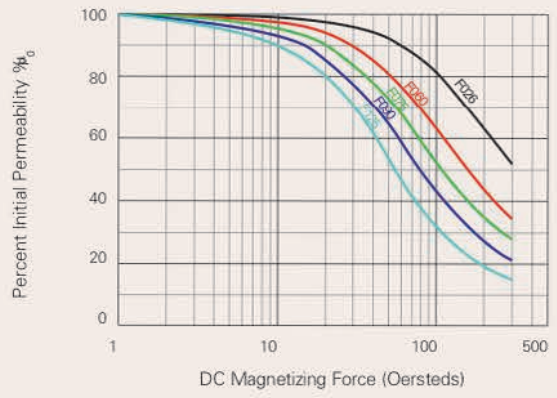
On-line filter.

Switching regulator inductor

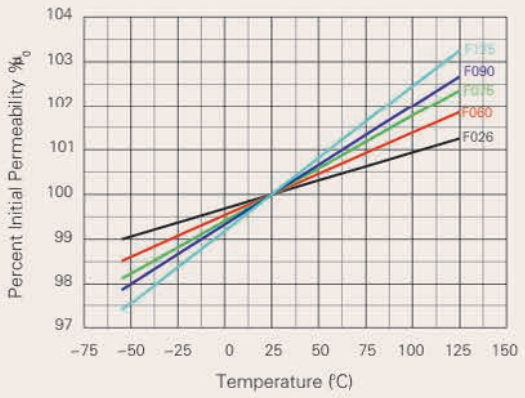
Flyback and Pulse transformer.

Solar inverter

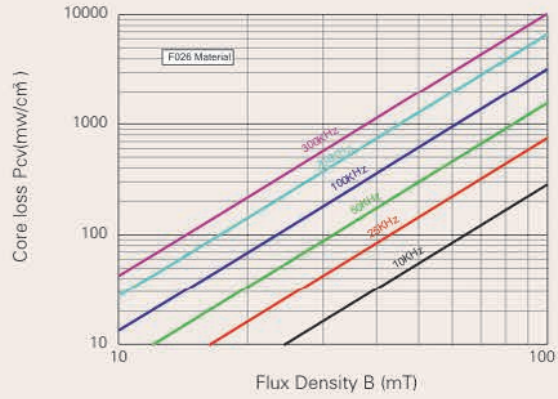
DF铁硅系列磁粉心典型直流叠加特性

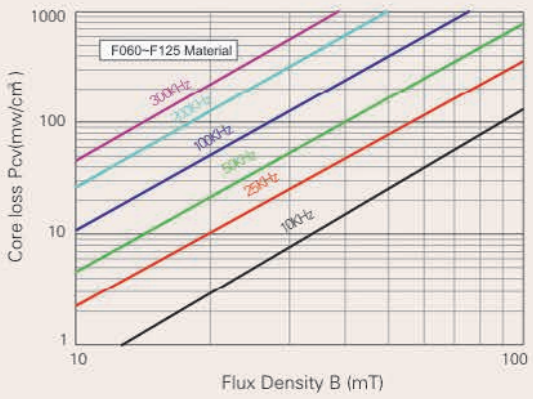


DF铁硅系列磁粉心典型磁导率VS温度特性



DF铁硅系列磁粉心典型磁损耗特性





DFF系列鉄硅磁粉心材料特点·

功率损耗低于DF系列磁心。
优良的直流叠加特性。
接近于零的磁致伸缩系数
良好的温度稳定性
可以在200℃高温下使用不存在失效问题。
成本低，在很多领域可以替代铁粉心/铁硅铝/铁镍磁粉心。
磁导率包括从26到90的多种规格.

DFF Series Powder Core Material Characteristics

Evenly distributed gaps in the core.
Bs is up to 15000Gs.
Excellent DC Bias.
Core Loss is lower than iron powder core
No subject to thermal aging and material can work in 200℃
Low cost and it can substitute IPC/Sendust /Hi-Flux core in some applications.
Permeability is from 14 to 125

DFF材料典型特性· DFF MATERIAL TYPICAL CHARACTERIESTICS

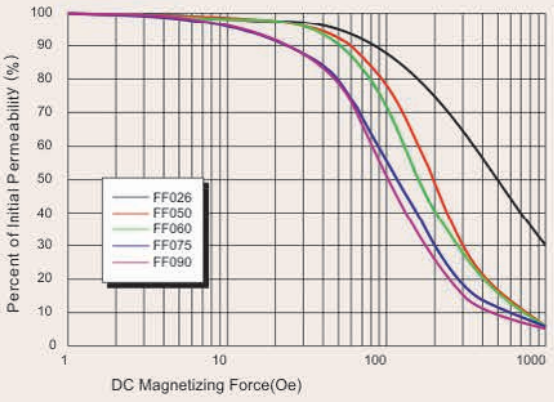
特性 Characteristics	单位 Unit	参数 Parameter
初始磁导率 Initial Permeability	--	26~90
饱和磁通密度Bs Saturation Magnetic Flux Density	(Gs)	16000
居里温度 Curie Temperature	(℃)	>700
温度系数 (-40℃~125℃) Temperature Coefficient	10^{-6}/℃	450
密度 Density	(g/cm^3)	6.5-7.0
温度范围 Temperature Range	℃	-40~200

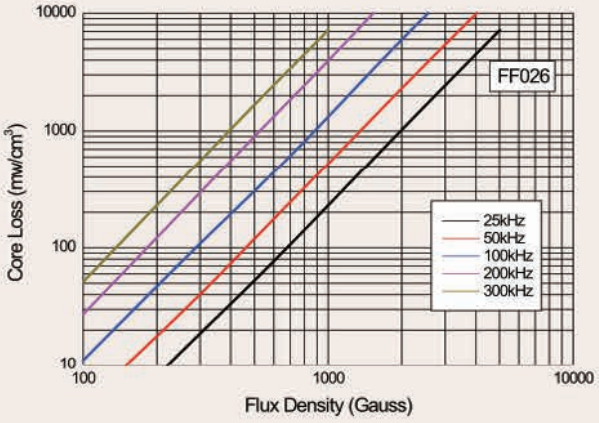
DFF材料磁环主要用途

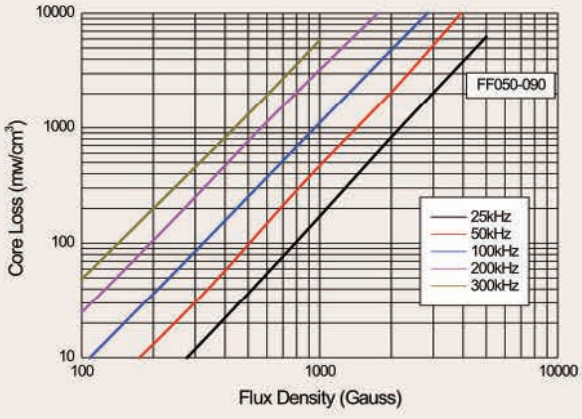
大电流高功率电感器。
PFC电感器。
开关电源（SMPS）中电感器。
VRM电感用Buck电感器。
平滑滤波电感器。
太阳能逆变器。
UPS电源。

DFF series Powder Core Main Applications

Power inductor for big current circuit
PFC inductor
Switching regulator inductor
Buck inductor for VRM.
Smoothing choke for inverter
Solar inverter
UPS Power Supply


Percent of Initial Permeability (%)
100
90
80
70
60
50
40
30
20
10
0
1
10
100
1000
DC Magnetizing Force(Oe)
FF026
FF050
FF060
FF075
FF090


Core Loss (mw/cm³)
10000
1000
100
10
100
1000
10000
Flux Density (Gauss)
FF026
25kHz
50kHz
100kHz
200kHz
300kHz


Core Loss (mw/cm³)
10000
1000
100
10
100
1000
10000
Flux Density (Gauss)
FF050-090
25kHz
50kHz
100kHz
200kHz
300kHz