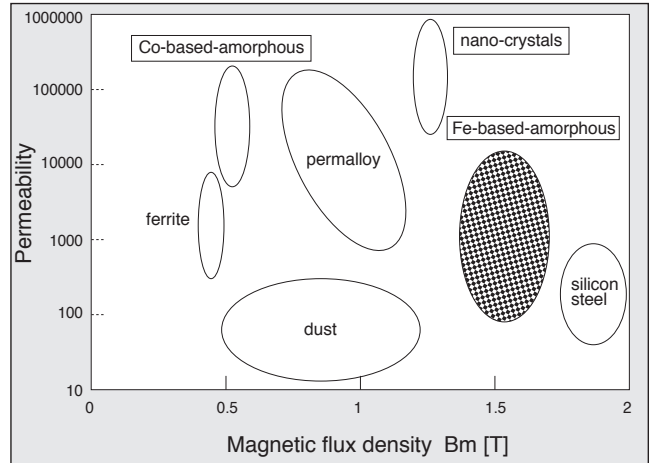


# CHOKE COIL CHARACTERISTICS

## ◆ Characteristics comparison of magnetic materials

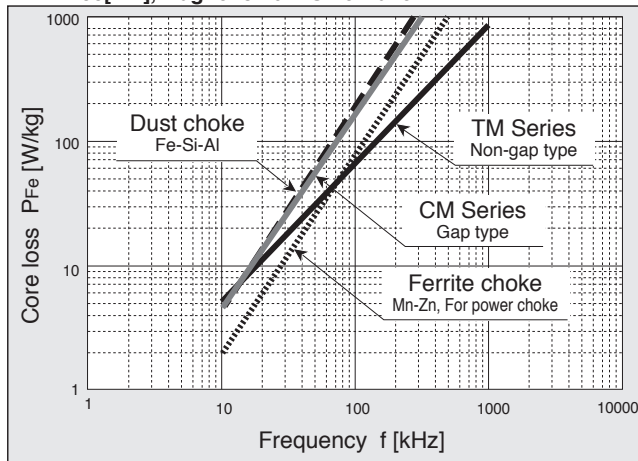
	Fe-based amorphous	Nano-crystalline alloy	High permeability ferrite	Power ferrite	Permalloy	Silicon steel
Saturation magnetic flux density $B_s$ [mT]	1550	1250	500	500	700	2000
Magnetic permeability $\mu$ (10[kHz])	5000	75000	12000	2300	10000	700
Core loss at high frequency $P_{Fe}$ [mW/g]	40	20	85	52	97	325
Curie point $T_c$ [°C]	400	570	120	230	350	750
Crystallization temperature $T_x$ [°C]	550	—	—	—	—	—
Applications	Output smoothing Common-mode noise suppression High frequency transformer	Common-mode noise suppression	Broad-band frequency transformer Common-mode noise suppression	High frequency transformer Pulse transformer Output smoothing	Sensor Current transformer	Transformer for commercial frequency Low frequency choke

## ◆ Location of amorphous alloy in soft magnetic materials

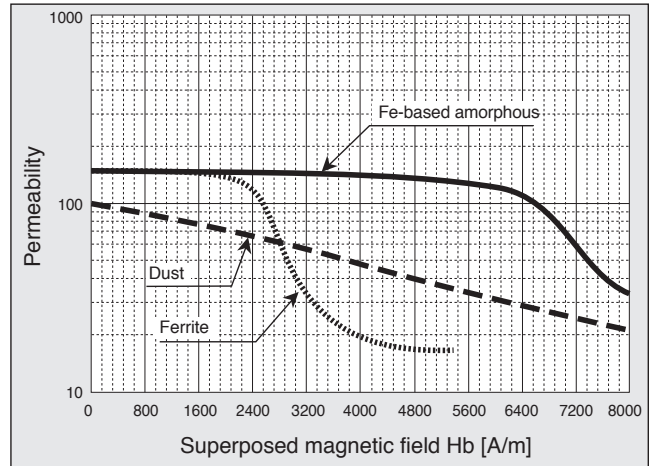


## ◆ Frequency dependence of the core loss of amorphous

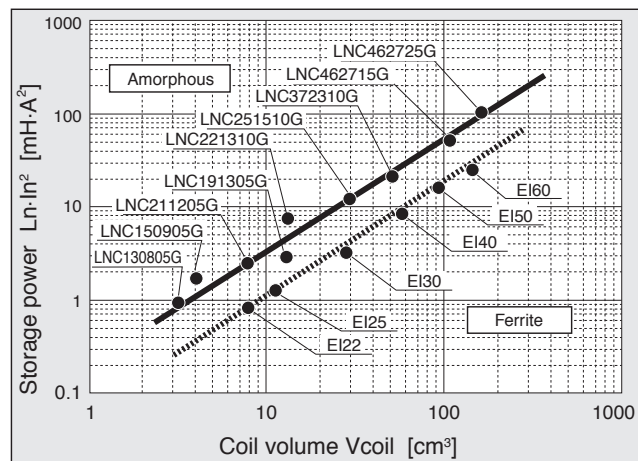
- Comparison between ferrite choke and dust choke
- $B_m=100$ [mT], Magnetic flux: Sine wave



## ◆ D.C. bias of normal mode choke coil



## ◆ Storage power vs. Coil volume (Energy capacity)



## ◆ D.C. bias of amorphous choke coil

- Temperature dependence : Core temperature 25, 100°C

