

# Ferrite Core Specification

Technology Dept.

|                         |                                                                                                    |                   |                                                                                                            |                             |              |                |       |
|-------------------------|----------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------|-----------------------------|--------------|----------------|-------|
| NCD P/N                 | LP9 UU100/75/30                                                                                    | Customer          |                                                                                                            | Spec No.                    |              |                |       |
| Cus. part               |                                                                                                    | Customer's P/N    |                                                                                                            | Rev.No.                     | 00           | Page           | 1/1   |
|                         |                                                                                                    |                   |                                                                                                            | Dimensions (mm)             |              |                |       |
|                         |                                                                                                    |                   |                                                                                                            | A                           | 100.0±3.0    |                |       |
|                         |                                                                                                    |                   |                                                                                                            | B                           | 75.5±1.0     |                |       |
|                         |                                                                                                    |                   |                                                                                                            | C                           | 30.0±1.0     |                |       |
|                         |                                                                                                    |                   |                                                                                                            | D                           | 30.0±1.0     |                |       |
|                         |                                                                                                    |                   |                                                                                                            | E                           | 37.5min      |                |       |
|                         |                                                                                                    |                   |                                                                                                            | F                           | 45.0±0.75    |                |       |
|                         |                                                                                                    |                   |                                                                                                            |                             |              |                |       |
|                         |                                                                                                    |                   |                                                                                                            |                             |              |                |       |
| Parameter               | Le= 354mm                                                                                          |                   | Ae=917 mm <sup>2</sup>                                                                                     | Ve= 324620 mm <sup>3</sup>  | m≈1650 g/prs |                |       |
| Electric Charateristics | Item                                                                                               | Unit              | Spec.                                                                                                      | Test Condition              |              | Instrument     |       |
|                         | A <sub>L</sub>                                                                                     | nH/N <sup>2</sup> | 8500±25%                                                                                                   | 10kHz,0.1V,φ0.35,10Ts,23±2℃ |              | HP4284A or eq. |       |
|                         | Pc                                                                                                 | W                 | 8.1max                                                                                                     | 25kHz,100mT,25℃             |              | SY-8216 or eq. |       |
|                         | Pc                                                                                                 | W                 | 6.5max                                                                                                     | 25kHz,100mT,100℃            |              | SY-8216 or eq. |       |
|                         |                                                                                                    |                   |                                                                                                            |                             |              |                |       |
|                         |                                                                                                    |                   |                                                                                                            |                             |              |                |       |
| Appearance              | Item                                                                                               |                   | Content                                                                                                    |                             |              |                |       |
|                         | Clean                                                                                              |                   | Appearance must be clean.No powder accretes and watermark                                                  |                             |              |                |       |
|                         | Burr                                                                                               |                   | Any blighting burr was not allow existed.                                                                  |                             |              |                |       |
|                         | Crack                                                                                              |                   | No crack and scar affect using                                                                             |                             |              |                |       |
|                         | Chips                                                                                              |                   | United surface: dia.≤5.0mm <sup>2</sup> ,2part max.No united surface: dia≤10.0mm <sup>2</sup> , 3parts max |                             |              |                |       |
|                         | Pull-out                                                                                           |                   | Pull-out area≤ 1/10                                                                                        |                             |              |                |       |
|                         | Crystal Grain                                                                                      |                   | Dia.3.0mm max ,less than 3 parts;Dia.5.0mm max ,less than 2 parts                                          |                             |              |                |       |
|                         | Distortion                                                                                         |                   | Product distortion≤1.0mm                                                                                   |                             |              |                |       |
| Marking                 | (No Marking)                                                                                       |                   |                                                                                                            |                             |              |                |       |
| Packing                 |                                                                                                    | Material          | Quantity                                                                                                   | Unit                        | Marks        |                | Label |
|                         | Inner                                                                                              | UU100 Styrofoam   | 3                                                                                                          | Prs                         |              |                |       |
|                         | Outer                                                                                              | N385*255*210      | 12                                                                                                         | Prs                         |              |                |       |
| Test Rule               | According to GB2828. Once natural project for sampling.( II )Dimensions:AQL=1.0Capability:AQL=0.65 |                   |                                                                                                            |                             |              |                |       |
| Customer Affirm         | Customer Affirm                                                                                    |                   |                                                                                                            |                             | Design       | Check          | Appr. |
|                         |                                                                                                    |                   |                                                                                                            |                             |              |                |       |
|                         |                                                                                                    |                   |                                                                                                            |                             | Date         | 2023-12-18     |       |



MAANSHAN NEW CONDA MAGNETIC INDUSTRIAL CO.,LTD.



## 材料特性 MATERIAL CHARACTERISTICS

### ● LP9宽温低损耗铁氧体材料 Wide T-range Low Loss ferrite material LP9

| 特性<br>Characteristics                         | 符号<br>Symbol       | 单位<br>Unit        | 条件<br>Condition | LP9               |
|-----------------------------------------------|--------------------|-------------------|-----------------|-------------------|
| 起始磁导率<br>Initial permeability                 | $\mu_i$            |                   | 25℃             | 3300±25%          |
| 相对损耗因数<br>Relative loss factor                | $\tan\delta/\mu_i$ |                   | 100kHz          | $<4\times10^{-6}$ |
| 饱和磁通密度* (1194A/m)<br>Saturation flux density* | Bs                 | mT                | 25℃             | 520               |
|                                               |                    |                   | 100℃            | 410               |
| 剩磁* Remanence*                                | Br                 | mT                | 25℃             | 90                |
| 矫顽力* Coercivity*                              | Hc                 | A/m               | 25℃             | 9                 |
| 功率损耗*<br>Power loss*<br>(f=100kHz, B=200mT)   | Pcv                | kW/m <sup>3</sup> | 25℃             | 350               |
|                                               |                    |                   | 80℃             | 300               |
|                                               |                    |                   | 100℃            | 310               |
|                                               |                    |                   | 120℃            | 350               |
|                                               |                    |                   | 140℃            | 400               |
| 居里温度<br>Curie temperature                     | Tc                 | ℃                 |                 | ≥215              |
| 电阻率* Resistivity*                             | $\rho$             | $\Omega\cdot m$   |                 | 6                 |
| 密度* Density*                                  | d                  | kg/m <sup>3</sup> |                 | $4.9\times10^3$   |

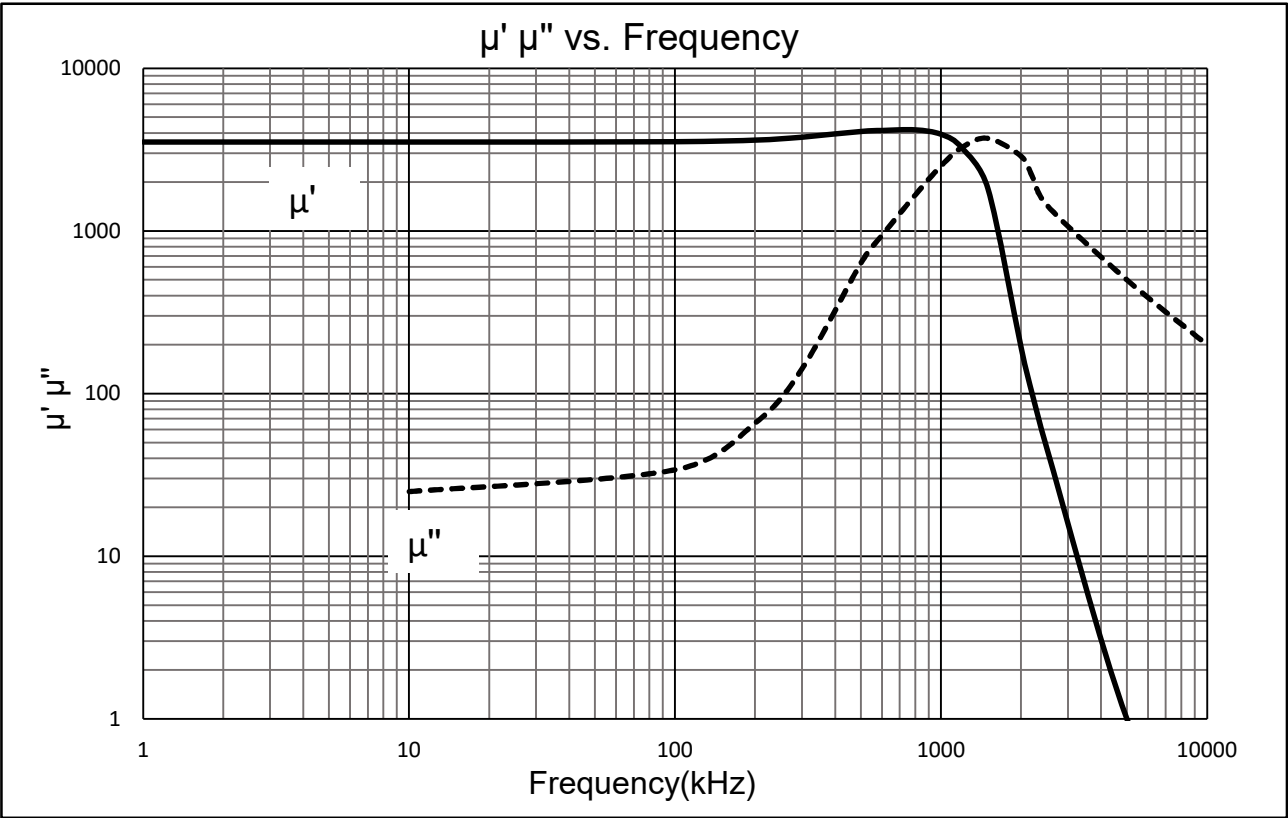
注： 1、如无说明，各项数值均在室温下用Φ25×Φ15×10环型磁心测得。

2、\*为典型值。

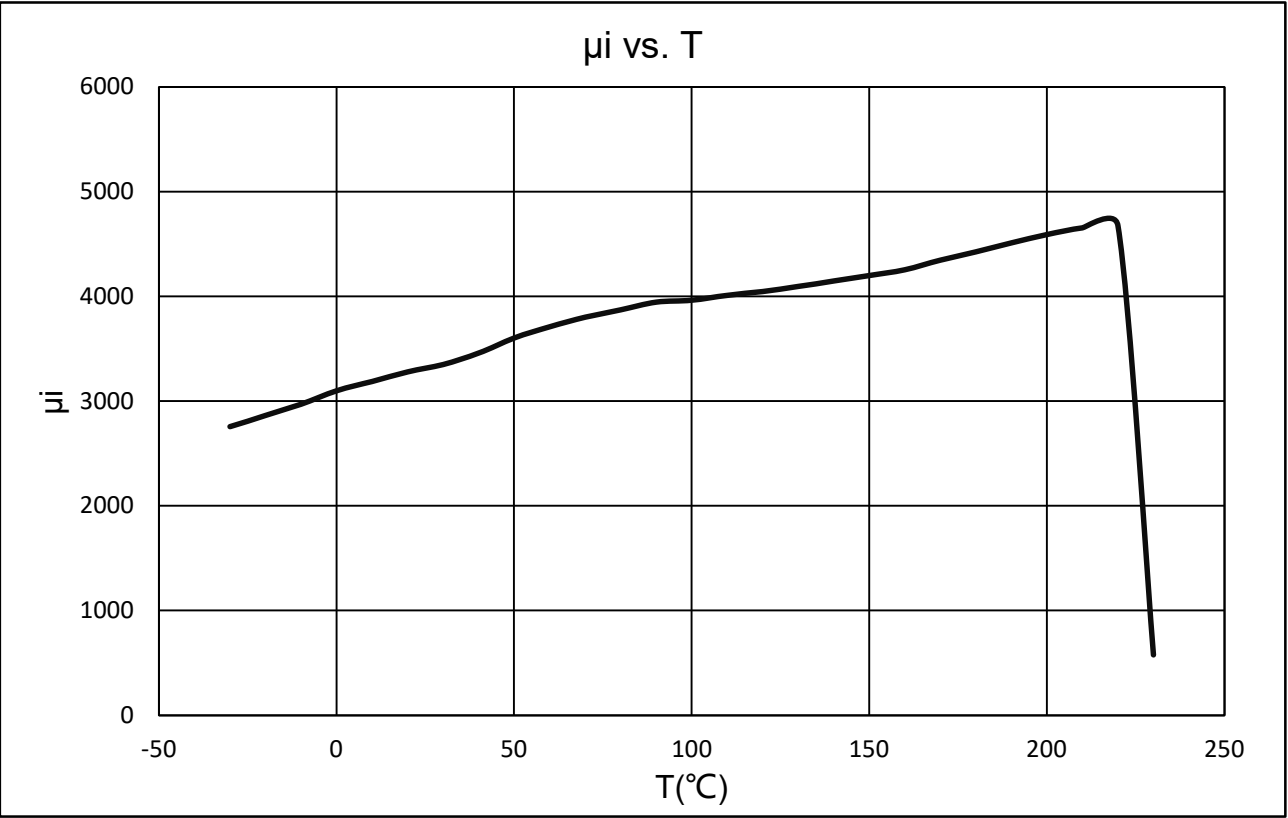
Note: 1.The values were obtained with toroidal core Φ25×Φ15×10 at room temperature unless otherwise specified.

2. \* Typical value.

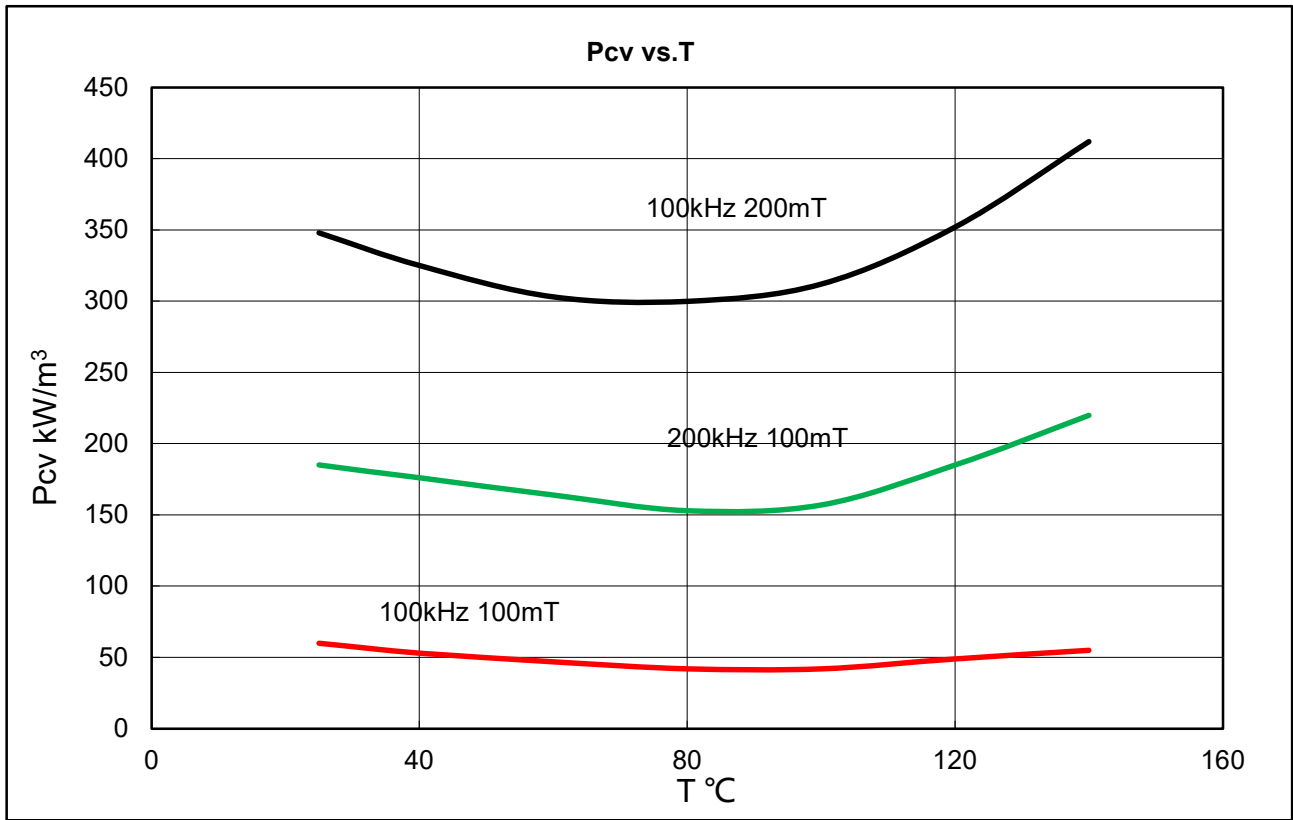
复数磁导率与频率关系  
Complex Permeability  $\mu'$   $\mu''$  vs. Frequency F



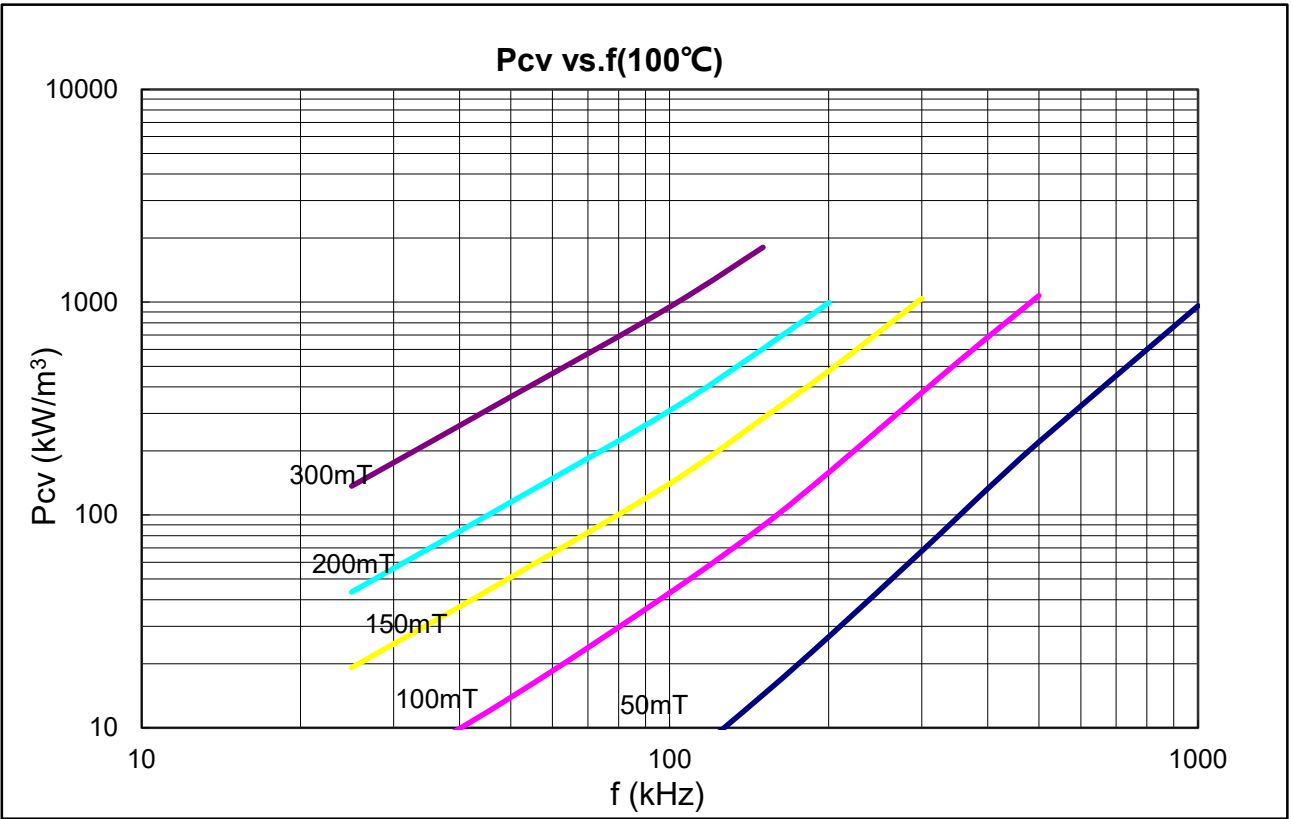
初始磁导率与温度关系  
Permeability  $\mu_i$  vs. Temperature T



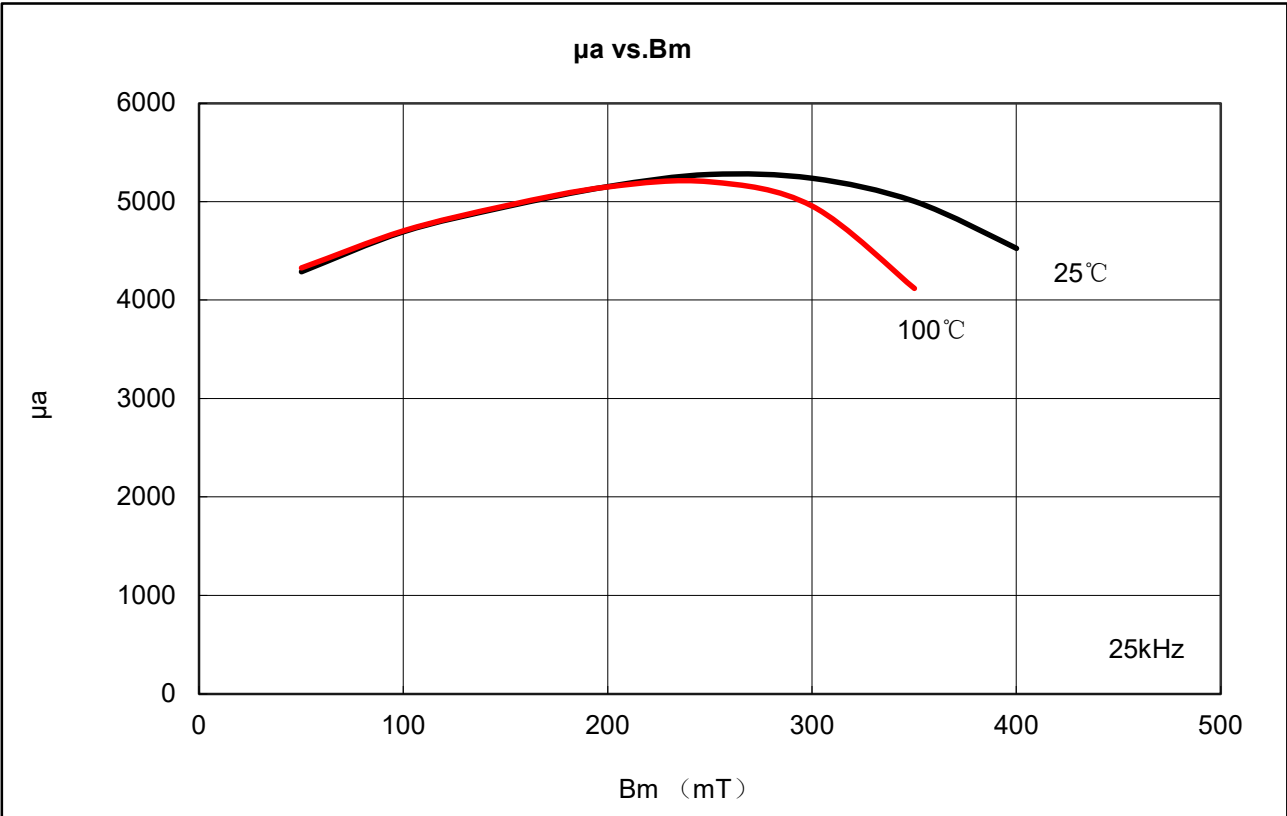
功率损耗与温度关系  
Powerloss Pc vs.Temperature



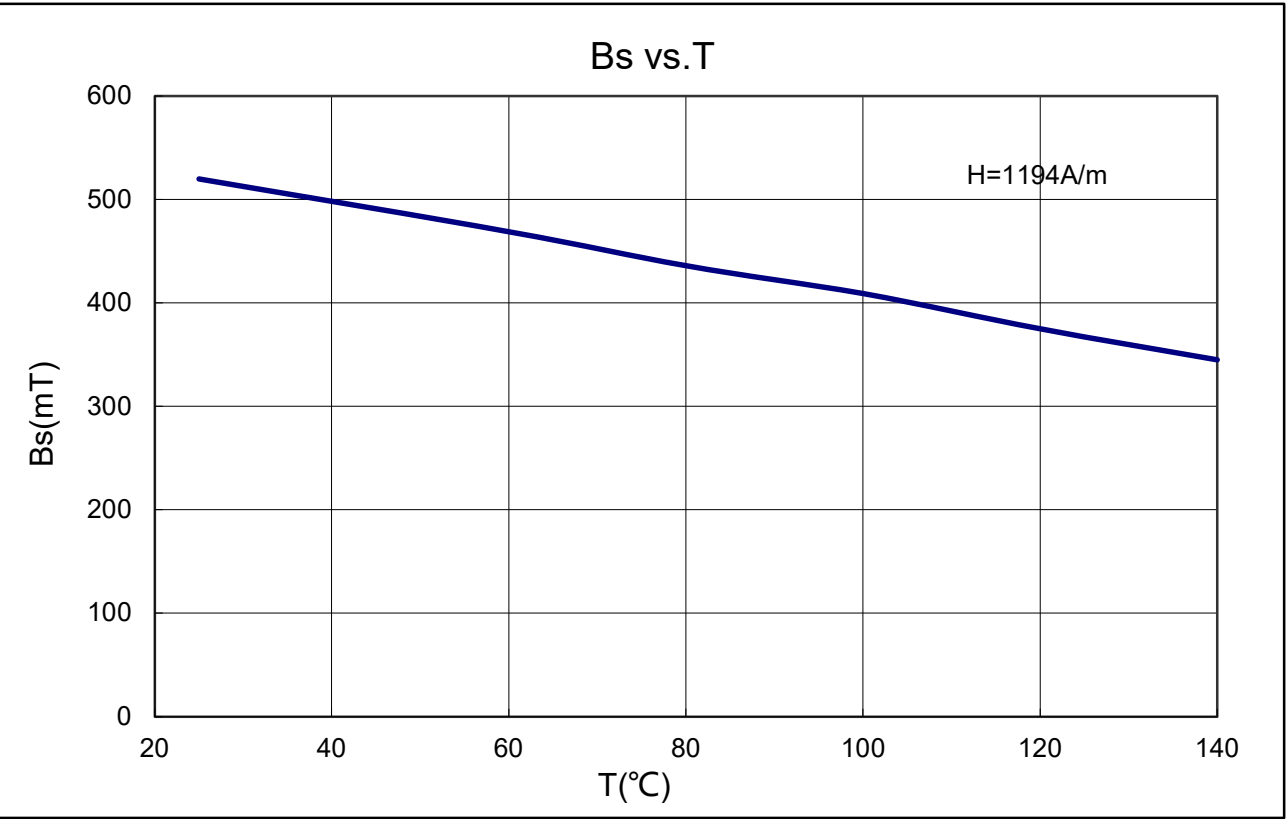
功率损耗与频率关系  
Powerloss Pc vs.frequency f



振幅磁导率与磁通密度关系  
Amplitude permeability  $\mu_a$  vs.flux density  $B_m$



饱和磁通密度与温度关系  
Saturation flux density  $B_s$  vs.temperature  $T$



磁通密度与磁场强度关系  
Fulx density B vs.magnetic field H

