

# 宝钢取向硅钢B23RD080产品介绍

## Baosteel GO Electrical Steel B23RD080

### 1. 适用范围

变压器、调压器、电抗器、磁放大器等

### 1. Applications

Transformer, Voltage Regulator, Reactor and Magnetic Amplifier

### 2. 种类

2.1 钢带种类 取向硅钢 (牌号: B23RD080)

2.2 涂层种类 S

2.3 切边种类 切边 (EC) 供货

### 2. Classification and symbol

2.1 Strip steel GO electrical steel (Grade: B23RD080)

2.2 Insulation coating S

2.3 Edge condition Cut edge (EC)

### 3. 特性

#### 3.1 磁特性

### 3. Characteristics

#### 3.1 Magnetic properties

种类 Grade	厚度 Thickness	约定密度 Assumed density
B23RD080	0.23mm	7.65kg/dm <sup>3</sup>

注: ① 密度用于计算试验片的横截面积

Note: ① The assumed density is used to calculate the cross-sectional area of the test specimen.

典型值 Typical values		保证值 Guaranteed values	
$P_{17/50}$ (W/kg)	B8 (T)	$P_{17/50} \leq$ (W/kg)	B8 $\geq$ (T)
0.77	1.92	0.78	1.88

注: ① 磁性测量引用标准GB/T13789-2008

②  $P_{17/50}$  表示频率为50Hz最大磁感为1.7T时的铁损

③ B8表示的是磁化场为800A/m时的磁感应强度

Note: ① The values are to be measured to the method GB/T13789-2008.

②  $P_{17/50}$  indicates the core loss at 50Hz and 1.7T.

③ B8 indicates the magnetic flux density at 800A/m.

### 3.2 叠片系数 (占积率)

叠片系数96.0%以上

### 3.2 Lamination factor (stacking/space factor)

MIN. Lamination factor 96.0%

## 4. 尺寸外形

4.1 卷径 钢卷内径为 $508^{+12}_{-8}$  mm

4.2 尺寸及形状允许偏差

## 4. Dimensions and tolerances

4.1 Coil diameter Inner diameter  $508^{+12}_{-8}$  mm

4.2 Tolerances on dimension and shape

单位:mm

公称厚度 Nominal thickness (mm)	公称厚度允许偏差 Nominal thickness tolerance (mm)	纵向厚度偏差 Longitudinal thickness deviation (mm)	横向厚度偏差 Transverse thickness deviation (mm)	宽度允许偏差 (切边) Width tolerance (cut edge) (mm)	毛刺高度 Burr height (mm)	公称宽度 Nominal width (mm)
0.23	+0.010 -0.020	+0.012 0	+0.010 0	+0.5 0	$\leq 0.025$	900~1270

## 5. 典型机械性能

## 5. Typical mechanical properties

拉伸强度 (L向) Tensile strength (L)	屈服强度 (L向) Yield strength (L)	伸长率 (L向) Elongation (L)	硬度 HV1 HV1
354MPa	331MPa	14%	205

注: ①数据为目前产品所能达到的平均值, 不作保证。

Note: ①Test values shown above are the average ones not for guaranteed.

## 6. 涂层性能

6.1 涂敷量 3~5 $\mu$ m/单面

6.2 层间电阻

$\geq 30\Omega \cdot \text{cm}^2/\text{片}$  (典型值:  $80\Omega \cdot \text{cm}^2/\text{片}$ )

## 6. Coating properties

6.1 Thickness of coating 3~5 $\mu$ m/side

6.2 Surface insulation resistivity

Guaranteed value  $\geq 30\Omega \cdot \text{cm}^2/\text{lamination}$

(Typical value:  $80\Omega \cdot \text{cm}^2/\text{lamination}$ )

## 7. B23RD080 性能数据及曲线

## 7. B23RD080 Electromagnetic properties data and curves

### 7.1 50Hz交流性能数据

Electromagnetic properties at 50Hz

磁感强度 B Magnetic induction (T)	铁损 P Core loss (W/kg)	磁场强度H Magnetic field strength (A/m)	激磁功率 S Exciting power (VA/kg)
0.400	0.040	9.7	0.079
0.450	0.051	10.6	0.096
0.500	0.062	11.3	0.115
0.550	0.075	12.0	0.134
0.600	0.088	12.8	0.155
0.650	0.104	13.4	0.177
0.700	0.120	14.1	0.201
0.750	0.138	14.8	0.226
0.800	0.157	15.5	0.252
0.850	0.177	16.2	0.279
0.900	0.199	16.9	0.309
0.950	0.222	17.7	0.341
1.000	0.246	18.6	0.376
1.049	0.271	19.7	0.413
1.098	0.298	21.0	0.455
1.150	0.326	22.6	0.502
1.199	0.355	24.4	0.555
1.249	0.385	26.7	0.616
1.299	0.417	29.4	0.686
1.348	0.450	32.6	0.767
1.397	0.485	36.4	0.861
1.449	0.522	41.3	0.974
1.498	0.562	47.0	1.108
1.548	0.605	54.6	1.274
1.597	0.654	64.6	1.486

磁感强度 B Magnetic induction (T)	铁损 P Core loss (W/kg)	磁场强度H Magnetic field strength (A/m)	激磁功率 S Exciting power (VA/kg)
1.608	0.665	67.2	1.538
1.618	0.676	70.0	1.594
1.628	0.687	73.0	1.654
1.637	0.699	76.0	1.716
1.648	0.711	79.7	1.786
1.658	0.724	83.7	1.862
1.668	0.737	87.9	1.942
1.678	0.751	92.5	2.032
1.688	0.765	97.6	2.130
1.698	0.780	103.5	2.241
1.708	0.796	110.1	2.366
1.718	0.812	117.3	2.504
1.728	0.829	125.5	2.658
1.738	0.848	135.1	2.836
1.748	0.867	145.4	3.031
1.758	0.888	157.3	3.258
1.767	0.909	169.3	3.505
1.778	0.933	186.4	3.817
1.788	0.957	204.2	4.163
1.798	0.984	225.7	4.594
1.818	1.044	281.3	5.724
1.847	1.155	412.6	8.573
1.867	1.248	556.5	12.007
1.897	1.429	916.8	21.738
1.904	1.490	1046.8	26.855

## 7.2 60Hz交流性能数据

### Electromagnetic properties at 60Hz

磁感强度 B Magnetic induction (T)	铁损 P Core loss (W/kg)	磁场强度 H Magnetic field strength (A/m)	激磁功率 S Exciting power (VA/kg)
0.400	0.054	10.1	0.098
0.450	0.068	11.0	0.120
0.500	0.083	11.8	0.143
0.550	0.099	12.6	0.168
0.600	0.118	13.3	0.194
0.650	0.137	14.1	0.222
0.700	0.159	14.8	0.251
0.749	0.183	15.5	0.282
0.800	0.208	16.2	0.315
0.850	0.235	17.0	0.350
0.899	0.263	17.7	0.388
0.950	0.294	18.5	0.429
0.999	0.326	19.4	0.472
1.049	0.359	20.4	0.520
1.099	0.394	21.7	0.572
1.149	0.431	23.2	0.630
1.199	0.469	25.0	0.696
1.249	0.510	27.2	0.771
1.299	0.551	30.0	0.856
1.349	0.595	33.2	0.955
1.398	0.641	37.0	1.070
1.449	0.689	41.7	1.205
1.498	0.741	47.5	1.366
1.548	0.797	54.9	1.563
1.598	0.860	64.9	1.817

磁感强度 B Magnetic induction (T)	铁损 P Core loss (W/kg)	磁场强度 H Magnetic field strength (A/m)	激磁功率 S Exciting power (VA/kg)
1.608	0.874	67.4	1.879
1.618	0.888	70.2	1.944
1.628	0.902	73.1	2.014
1.638	0.917	76.4	2.091
1.647	0.932	79.4	2.169
1.658	0.949	83.6	2.259
1.668	0.965	87.8	2.356
1.678	0.983	92.5	2.463
1.688	1.001	97.6	2.581
1.698	1.020	103.4	2.711
1.708	1.040	110.0	2.859
1.718	1.061	117.3	3.024
1.727	1.082	124.8	3.202
1.741	1.111	137.6	3.468
1.750	1.137	147.9	3.718
1.760	1.161	159.6	3.986
1.770	1.188	173.5	4.297
1.779	1.217	189.3	4.660
1.788	1.246	206.5	5.066
1.798	1.283	229.9	5.629
1.819	1.359	288.9	7.060
1.848	1.496	420.3	10.491
1.868	1.614	566.8	14.733
1.898	1.843	943.4	27.057
1.917	2.018	1394.1	44.591

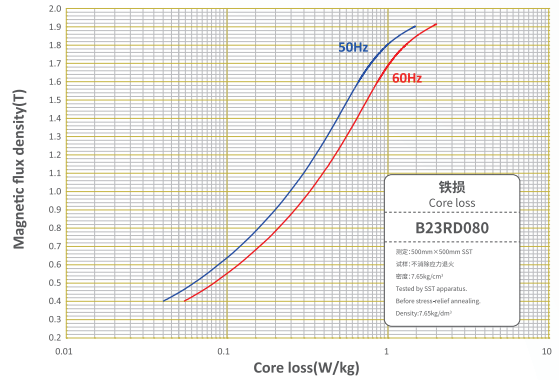
### 7.3 直流H-B性能数据

D.C. magnetization curves properties

磁场强度H Magnetic field strength (A/m)	磁感强度 B Magnetic induction (T)	磁场强度H Magnetic field strength (A/m)	磁感强度 B Magnetic induction (T)
1.035	0.021	69.649	1.625
1.554	0.035	79.883	1.658
2.071	0.052	90.236	1.684
2.589	0.072	100.586	1.704
3.106	0.095	145.479	1.760
3.621	0.120	197.013	1.800
4.142	0.149	248.799	1.823
4.631	0.174	300.525	1.838
5.141	0.201	352.329	1.849
6.169	0.265	404.416	1.861
7.191	0.336	433.242	1.866
8.214	0.407	485.265	1.873
9.237	0.490	588.456	1.883
10.256	0.575	691.994	1.897
15.004	0.954	795.114	1.903
20.056	1.161	898.874	1.910
25.171	1.274	1002.374	1.917
30.315	1.357	1961.806	1.942
35.457	1.416	2998.806	1.957
40.637	1.465	4036.542	1.961
43.940	1.493	4837.456	1.964
49.113	1.529	7945.037	1.971
59.351	1.586	10007.518	1.974

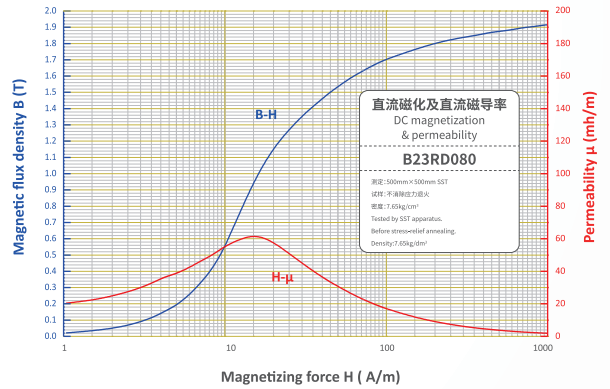
### 7.4 铁损曲线

Core loss curves



### 7.5 直流磁化及直流磁导率曲线

DC magnetization & permeability curves



### 7.6 激磁功率曲线

Exciting power curves

