



南京时恒电子科技有限公司

规格承认书

APPROVAL SHEET

客户名称:

CUSTOMER _____

产品名称:

PART NAME MF52 珠状测温型 NTC 热敏电阻器

产品规格:

PART NUMBER MF52 A 104 J 3950 (A1)(UL:E240991)

日期:

DATE 2017 年 07 月 20 日

确 认

CONFIRM

客户

品保部: _____

制造部: _____

工程部: _____

供货商/制造商

规格书制作: 鞠晓丽

技术部审核: _____

品质部审核: _____

生产部审核: _____

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南京时恒电子科技有限公司

MF52 珠状测温型 NTC 热敏电阻器

型号: MF52A 104J3950(A1)

本规格书提供了南京时恒电子科技有限公司生产的 MF52A 系列 NTC 热敏电阻的结构尺寸、产品性能、试验条件、使用要求的描述, 敬请贵司确认。
对本规格书产生疑问时, 请速与我们联系 (025-52121868), 若无疑义请确认回传, 若无回传, 我司将视为默认。
贵公司改变使用用途, 作用方法时, 请与我们联系。

客户名称:		
客户 确认	确认:	时间:
	审核:	时间:

1. 电气性能

项目	符号	测试条件	单位	性能要求
1.1	$R_{25^{\circ}\text{C}}$	$T_a=25\pm 0.05^{\circ}\text{C}$ 测试功率 $\leq 0.1\text{mW}$	K Ω	$100\text{K}\Omega \pm 5\%$
1.2	$B_{25/50}$	$B=[(T_a \times T_b)/(T_b - T_a)] \times \ln(R_a/R_b)$ $T_b=50^{\circ}\text{C} \pm 0.01^{\circ}\text{C}$	K	$3950 \pm 1\%$
1.3	δ	静止空气中	mW/ $^{\circ}\text{C}$	≥ 2
1.4	τ	静止空气中	sec	≤ 7
1.5	/	100V/DC 1min	M Ω	≥ 100
1.6	/	/	$^{\circ}\text{C}$	$-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$
1.7	P_{max}	/	mW	50
1.8	/	/	/	见附表 1
1.9	/	/	/	见附表 2

2. 可靠性

项目	测试条件及方法	技术要求
2.1 引出端强度	固定电阻端, 拉力: $5 \pm 1\text{N}$, 时间: 10 ± 1 秒	无可见性损伤 $R_{25} \Delta R/R \leq \pm 2\%$
2.2 可焊性	温度 $245 \pm 5^{\circ}\text{C}$ 时间 2-3 秒	着锡面积 $\geq 95\%$
2.3 耐焊接热	锡锅温度: $260 \pm 5^{\circ}\text{C}$, 浸入深度距电阻体 6mm, 时间 5 ± 1 秒	$R_{25} \Delta R/R \leq \pm 2\%$
2.4 稳态湿热	温度: $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$, 湿度: $93 \pm 2\%$, 时间: 500 小时	$R_{25} \Delta R/R \leq \pm 2\%$
2.5 温度快速变化	$-55^{\circ}\text{C} 30\text{min} \rightarrow 25^{\circ}\text{C} 5\text{min} \rightarrow 125^{\circ}\text{C} 30\text{min} \rightarrow 25^{\circ}\text{C} 5\text{min}$, 反复 5 次	$R_{25} \Delta R/R \leq \pm 2\%$
2.6 高温储存	温度: $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 时间: 1000 小时	$R_{25} \Delta R/R \leq \pm 2\%$
2.7 低温储存	温度: -55°C 时间: 1000 小时	$R_{25} \Delta R/R \leq \pm 2\%$

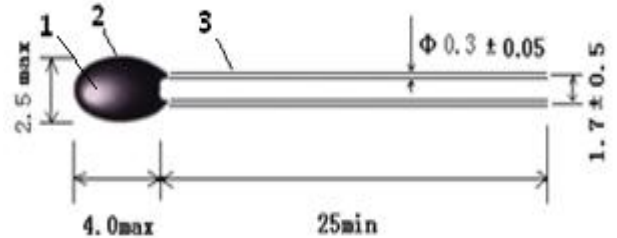
3. 使用注意事项

- 3.1 本产品的用途: 温度测量与控制;
- 3.2 避免流过热敏电阻芯片的电流引起元件自身发热而产生测量误差;
- 3.3 烙铁焊接时, 焊接处距涂装层距离至少 2mm, 焊接温度应低于 300°C , 焊接时间 $< 3\text{ses}$;
- 3.4 储存温度: $-10^{\circ}\text{C} \sim 40^{\circ}\text{C}$; 储存湿度: $\leq 75\% \text{RH}$;
- 3.5 避免存放在具有腐蚀性气体及光照的环境下;
- 3.6 包装打开后需重新密封保存。

4. 认证

- 4.1 质量管理体系认证 ISO9001:2008 (01115Q20270R5M)
ISO/TS16949: 2009 (0192416)
- 4.2 环境管理体系认证 ISO14001:2004 (01113E20060R2M)
- 4.3 环保检测报告 ROHS
- 4.4 产品 CQC 认证 (CQC10001052282)
- 4.5 江苏省高新技术产品认证 (120115G0179N)
- 4.6 UL 1434 认证 (File # E240991)

5. 外形尺寸: (单位: mm)



序号	名称	材料规格	数量	备注
1	元件	NTC 热敏电阻	1	
2	改性树脂	封装类树脂	1	黑色
3	导线	镀锡铜包钢线	2	银色

6. 产品型号说明

MF52 A 104 J 3950 A1
① ② ③ ④ ⑤ ⑥

- ① MF52: 珠状精密性 NTC 热敏电阻
- ② A: 引线为镀锡铜包钢线
- ③ 104: 25°C 的零功率电阻值 $100\text{K}\Omega$
- ④ J: 阻值精度代码 F $\pm 1\%$ G $\pm 2\%$ H $\pm 3\%$ J $\pm 5\%$
- ⑤ 3950: $B_{25/50}$ 值 3950K
- ⑥ A1: 小头

电话: 025-52121868
传真: 025-52122373
邮编: 211121

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附表 1

南京时恒阻温特性表

R25=100K Ω 精度:±5% B25/50=3950K B25/85=4035K 精度:±1%(P209-15A)

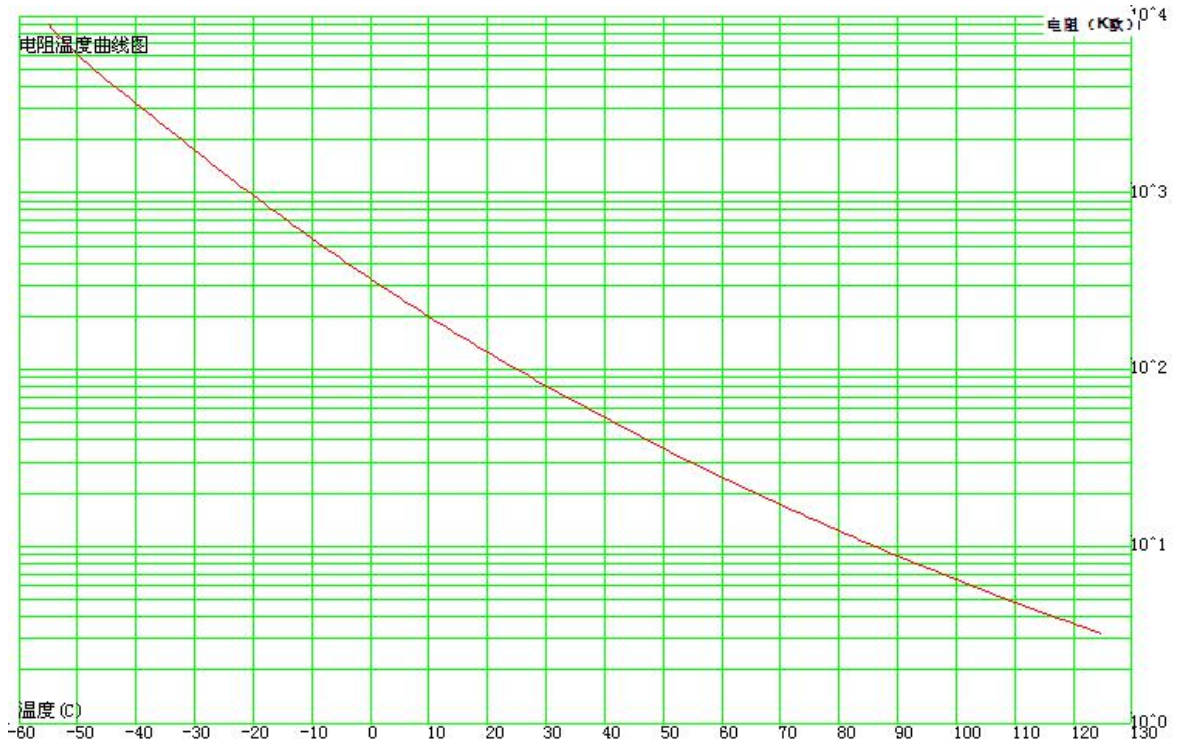
温度(°C)	电阻(K Ω)			电阻精度(%)		温度精度(°C)	
	最小值	中心值	最大值	ΔR	$-\Delta R$	ΔT	$-\Delta T$
-55	8163.900	8989.000	9872.740	9.831	-9.178	1.279	-1.194
-54	7492.580	8242.680	9045.210	9.736	-9.100	1.281	-1.197
-53	6907.660	7592.960	8325.390	9.646	-9.025	1.283	-1.200
-52	6392.670	7021.380	7692.660	9.560	-8.954	1.284	-1.202
-51	5934.940	6513.750	7131.140	9.478	-8.885	1.285	-1.204
-50	5524.650	6059.060	6628.550	9.399	-8.820	1.285	-1.206
-49	5154.070	5648.680	6175.260	9.322	-8.756	1.285	-1.207
-48	4817.140	5275.800	5763.690	9.247	-8.693	1.285	-1.208
-47	4508.990	4935.020	5387.790	9.174	-8.632	1.285	-1.209
-46	4225.750	4621.990	5042.740	9.103	-8.572	1.284	-1.209
-45	3964.290	4333.220	4724.630	9.032	-8.513	1.283	-1.210
-44	3722.050	4065.840	4430.280	8.963	-8.455	1.282	-1.210
-43	3496.930	3817.520	4157.080	8.894	-8.397	1.281	-1.210
-42	3287.190	3586.310	3902.870	8.826	-8.340	1.280	-1.210
-41	3091.390	3370.600	3665.840	8.759	-8.283	1.279	-1.210
-40	2908.280	3169.000	3444.450	8.692	-8.227	1.278	-1.210
-39	2736.820	2980.330	3237.410	8.625	-8.170	1.277	-1.209
-38	2576.100	2803.600	3043.570	8.559	-8.114	1.275	-1.209
-37	2425.330	2637.910	2861.940	8.493	-8.058	1.274	-1.209
-36	2283.800	2482.470	2691.670	8.427	-8.002	1.273	-1.208
-35	2150.890	2336.580	2531.960	8.361	-7.947	1.271	-1.208
-34	2026.040	2199.620	2382.110	8.296	-7.891	1.270	-1.208
-33	1908.730	2071.020	2241.480	8.230	-7.835	1.268	-1.207
-32	1798.490	1950.230	2109.490	8.165	-7.780	1.267	-1.207
-31	1694.890	1836.790	1985.590	8.101	-7.725	1.265	-1.207
-30	1597.520	1730.230	1869.280	8.036	-7.670	1.264	-1.206
-29	1506.010	1630.150	1760.100	7.972	-7.615	1.262	-1.206
-28	1420.000	1536.140	1657.610	7.907	-7.560	1.261	-1.205
-27	1339.170	1447.840	1561.410	7.844	-7.505	1.259	-1.205
-26	1263.200	1364.900	1471.090	7.780	-7.450	1.258	-1.205
-25	1191.800	1287.000	1386.320	7.717	-7.396	1.257	-1.204
-24	1124.700	1213.820	1306.730	7.654	-7.342	1.255	-1.204
-23	1061.640	1145.090	1232.020	7.591	-7.288	1.253	-1.203
-22	1002.360	1080.530	1161.890	7.529	-7.234	1.252	-1.203
-21	946.654	1019.890	1096.040	7.466	-7.180	1.250	-1.202
-20	894.282	962.912	1034.210	7.405	-7.127	1.249	-1.202
-19	845.047	909.379	976.161	7.343	-7.074	1.247	-1.201
-18	798.756	859.074	921.638	7.282	-7.021	1.246	-1.201
-17	755.226	811.797	870.425	7.221	-6.968	1.244	-1.200

-16	714.286	767.359	822.314	7.161	-6.916	1.242	-1.200
-15	675.776	725.581	777.109	7.101	-6.864	1.241	-1.199
-14	639.544	686.296	734.626	7.042	-6.812	1.239	-1.198
-13	605.448	649.348	694.691	6.982	-6.760	1.237	-1.198
-12	573.354	614.590	657.144	6.923	-6.709	1.235	-1.197
-11	543.139	581.883	621.833	6.865	-6.658	1.233	-1.196
-10	514.685	551.100	588.615	6.807	-6.607	1.232	-1.195
-9	487.881	522.117	557.359	6.749	-6.557	1.230	-1.195
-8	462.626	494.824	527.940	6.692	-6.507	1.228	-1.194
-7	438.822	469.113	500.241	6.635	-6.457	1.226	-1.193
-6	416.380	444.886	474.155	6.579	-6.407	1.224	-1.192
-5	395.215	422.050	449.580	6.522	-6.358	1.222	-1.191
-4	375.249	400.518	426.420	6.467	-6.309	1.220	-1.190
-3	356.406	380.209	404.587	6.411	-6.260	1.217	-1.189
-2	338.620	361.048	383.998	6.356	-6.211	1.215	-1.188
-1	321.824	342.963	364.577	6.302	-6.163	1.213	-1.186
0	306.582	326.560	346.969	6.249	-6.117	1.209	-1.183
1	290.967	309.764	328.950	6.193	-6.068	1.208	-1.184
2	276.796	294.529	312.614	6.140	-6.020	1.206	-1.183
3	263.398	280.131	297.184	6.087	-5.973	1.204	-1.181
4	250.724	266.520	282.603	6.034	-5.926	1.201	-1.180
5	238.733	253.647	268.820	5.981	-5.880	1.199	-1.178
6	227.383	241.470	255.788	5.929	-5.833	1.196	-1.177
7	216.637	229.946	243.462	5.877	-5.787	1.193	-1.175
8	206.459	219.036	231.798	5.826	-5.741	1.191	-1.173
9	196.817	208.706	220.759	5.775	-5.696	1.188	-1.172
10	187.678	198.920	210.307	5.724	-5.651	1.185	-1.170
11	179.015	189.647	200.407	5.674	-5.606	1.182	-1.168
12	170.799	180.857	191.028	5.624	-5.561	1.180	-1.166
13	163.005	172.523	182.139	5.574	-5.516	1.177	-1.165
14	155.609	164.618	173.713	5.524	-5.472	1.174	-1.163
15	148.589	157.118	165.721	5.475	-5.428	1.171	-1.161
16	141.924	150.000	158.140	5.426	-5.384	1.168	-1.159
17	135.593	143.243	150.947	5.378	-5.340	1.165	-1.156
18	129.578	136.827	144.119	5.329	-5.297	1.161	-1.154
19	123.862	130.731	137.636	5.281	-5.254	1.158	-1.152
20	118.429	124.940	131.479	5.234	-5.211	1.155	-1.150
21	113.262	119.435	125.630	5.186	-5.168	1.152	-1.148
22	108.348	114.202	120.071	5.139	-5.126	1.149	-1.146
23	103.672	109.225	114.787	5.092	-5.083	1.146	-1.144
24	99.222	104.491	109.763	5.046	-5.041	1.144	-1.143
25	95.000	100.000	105.000	5.000	-5.000	1.141	-1.141
26	90.874	95.699	100.528	5.046	-5.041	1.151	-1.150
27	86.960	91.617	96.282	5.091	-5.083	1.171	-1.169
28	83.235	87.731	92.238	5.137	-5.124	1.189	-1.186

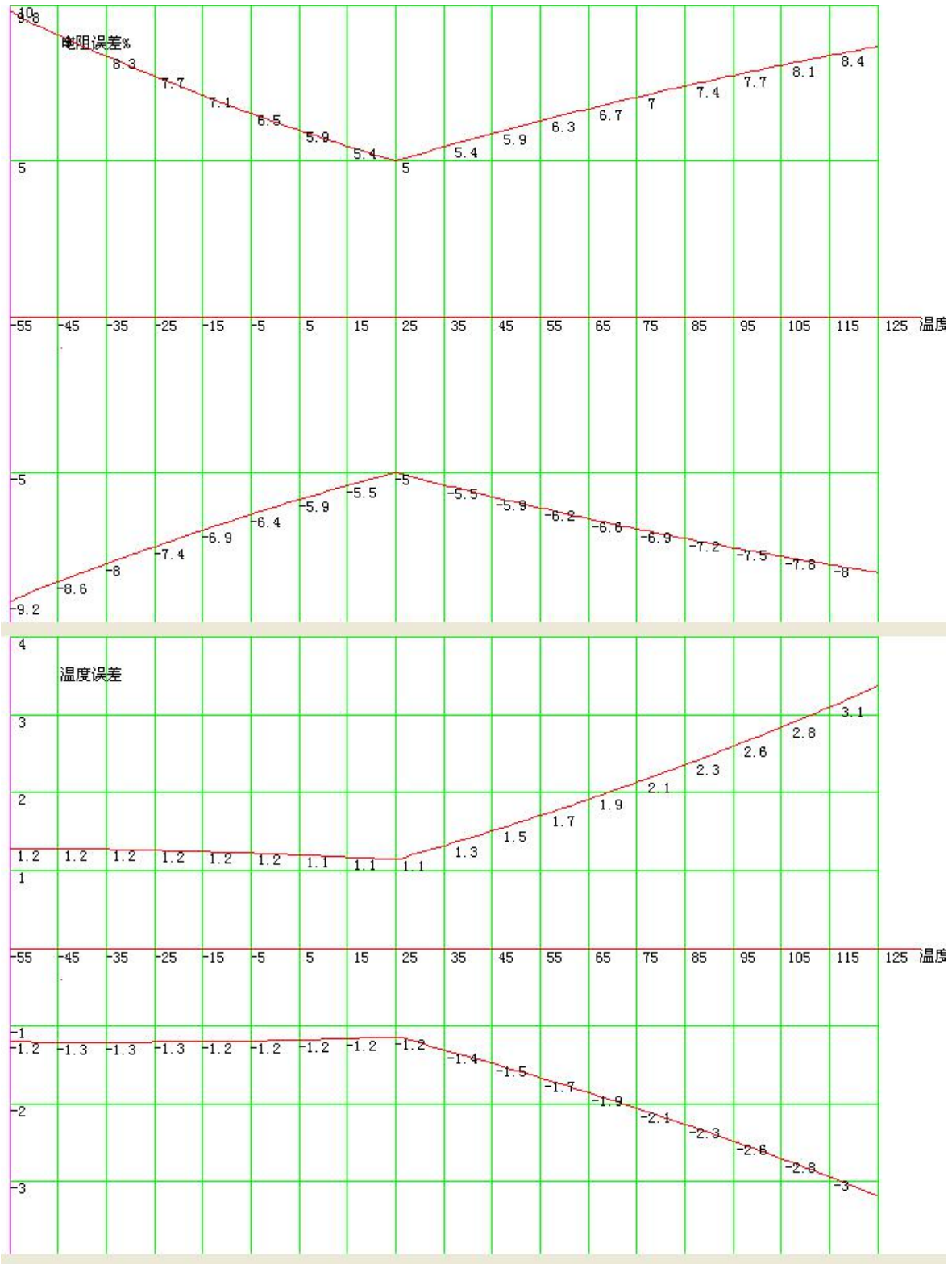
29	79.688	84.028	88.384	5.182	-5.165	1.207	-1.203
30	76.311	80.501	84.710	5.227	-5.205	1.225	-1.220
31	73.093	77.140	81.208	5.272	-5.246	1.243	-1.237
32	70.027	73.936	77.868	5.317	-5.286	1.261	-1.254
33	67.106	70.881	74.682	5.361	-5.326	1.279	-1.271
34	64.320	67.968	71.642	5.406	-5.366	1.298	-1.288
35	61.664	65.188	68.741	5.450	-5.405	1.316	-1.305
36	59.131	62.537	65.972	5.494	-5.444	1.334	-1.323
37	56.715	60.006	63.329	5.537	-5.483	1.353	-1.340
38	54.409	57.590	60.804	5.581	-5.522	1.372	-1.357
39	52.209	55.283	58.392	5.624	-5.561	1.390	-1.375
40	50.108	53.080	56.088	5.667	-5.599	1.409	-1.392
41	48.102	50.976	53.887	5.709	-5.637	1.428	-1.410
42	46.186	48.965	51.782	5.752	-5.675	1.447	-1.428
43	44.356	47.044	49.770	5.794	-5.713	1.466	-1.446
44	42.607	45.207	47.845	5.836	-5.751	1.485	-1.464
45	40.935	43.451	46.005	5.878	-5.788	1.505	-1.482
46	39.338	41.771	44.244	5.920	-5.825	1.524	-1.500
47	37.810	40.165	42.559	5.962	-5.862	1.544	-1.518
48	36.349	38.628	40.947	6.003	-5.899	1.563	-1.536
49	34.952	37.157	39.403	6.044	-5.935	1.583	-1.554
50	33.614	35.750	37.925	6.085	-5.972	1.603	-1.573
51	32.335	34.402	36.510	6.126	-6.008	1.622	-1.591
52	31.110	33.112	35.154	6.166	-6.044	1.642	-1.610
53	29.938	31.876	33.854	6.207	-6.079	1.662	-1.628
54	28.815	30.692	32.609	6.247	-6.115	1.683	-1.647
55	27.740	29.558	31.416	6.287	-6.150	1.703	-1.666
56	26.709	28.471	30.272	6.327	-6.185	1.723	-1.685
57	25.722	27.429	29.175	6.367	-6.220	1.744	-1.704
58	24.777	26.430	28.123	6.406	-6.255	1.764	-1.723
59	23.870	25.472	27.114	6.445	-6.290	1.785	-1.742
60	23.001	24.554	26.146	6.484	-6.324	1.806	-1.761
61	22.167	23.672	25.217	6.523	-6.358	1.826	-1.780
62	21.368	22.827	24.325	6.562	-6.393	1.847	-1.799
63	20.601	22.016	23.469	6.601	-6.426	1.868	-1.819
64	19.865	21.237	22.647	6.639	-6.460	1.889	-1.838
65	19.159	20.489	21.858	6.677	-6.494	1.911	-1.858
66	18.481	19.771	21.099	6.715	-6.527	1.932	-1.878
67	17.830	19.082	20.371	6.753	-6.560	1.953	-1.897
68	17.205	18.420	19.671	6.791	-6.593	1.975	-1.917
69	16.605	17.784	18.998	6.828	-6.626	1.996	-1.937
70	16.029	17.172	18.351	6.866	-6.659	2.018	-1.957
71	15.475	16.585	17.730	6.903	-6.691	2.040	-1.977
72	14.943	16.020	17.132	6.940	-6.723	2.062	-1.997
73	14.431	15.477	16.557	6.977	-6.756	2.084	-2.017

74	13.940	14.955	16.004	7.014	-6.788	2.106	-2.038
75	13.467	14.453	15.472	7.050	-6.819	2.128	-2.058
76	13.013	13.970	14.960	7.087	-6.851	2.150	-2.079
77	12.575	13.505	14.467	7.123	-6.883	2.172	-2.099
78	12.155	13.058	13.993	7.159	-6.914	2.195	-2.120
79	11.750	12.628	13.536	7.195	-6.945	2.217	-2.140
80	11.361	12.213	13.096	7.231	-6.976	2.240	-2.161
81	10.987	11.815	12.673	7.266	-7.007	2.263	-2.182
82	10.626	11.431	12.265	7.302	-7.038	2.285	-2.203
83	10.279	11.061	11.872	7.337	-7.068	2.308	-2.224
84	9.945	10.705	11.494	7.372	-7.099	2.331	-2.245
85	9.623	10.362	11.129	7.407	-7.129	2.355	-2.266
86	9.313	10.031	10.778	7.442	-7.159	2.378	-2.287
87	9.014	9.712	10.439	7.477	-7.189	2.401	-2.309
88	8.726	9.405	10.112	7.511	-7.219	2.424	-2.330
89	8.449	9.110	9.797	7.545	-7.248	2.448	-2.352
90	8.182	8.824	9.493	7.580	-7.278	2.472	-2.373
91	7.925	8.549	9.200	7.614	-7.307	2.495	-2.395
92	7.676	8.284	8.918	7.648	-7.337	2.519	-2.417
93	7.437	8.028	8.645	7.681	-7.366	2.543	-2.438
94	7.206	7.782	8.382	7.715	-7.394	2.567	-2.460
95	6.984	7.544	8.128	7.748	-7.423	2.591	-2.482
96	6.769	7.314	7.883	7.782	-7.452	2.615	-2.504
97	6.562	7.093	7.647	7.815	-7.480	2.640	-2.527
98	6.362	6.879	7.419	7.848	-7.509	2.664	-2.549
99	6.170	6.673	7.199	7.881	-7.537	2.689	-2.571
100	5.984	6.474	6.986	7.913	-7.565	2.713	-2.594
101	5.804	6.281	6.780	7.946	-7.593	2.738	-2.616
102	5.631	6.096	6.582	7.978	-7.620	2.763	-2.639
103	5.464	5.916	6.391	8.011	-7.648	2.788	-2.662
104	5.303	5.743	6.205	8.043	-7.675	2.813	-2.684
105	5.147	5.576	6.027	8.075	-7.703	2.838	-2.707
106	4.996	5.415	5.854	8.106	-7.730	2.863	-2.730
107	4.851	5.259	5.687	8.138	-7.757	2.889	-2.753
108	4.711	5.108	5.526	8.169	-7.783	2.914	-2.776
109	4.575	4.963	5.370	8.201	-7.810	2.940	-2.800
110	4.444	4.822	5.219	8.232	-7.836	2.965	-2.823
111	4.318	4.687	5.074	8.263	-7.863	2.991	-2.847
112	4.196	4.555	4.933	8.293	-7.889	3.017	-2.870
113	4.078	4.428	4.797	8.324	-7.915	3.043	-2.894
114	3.964	4.306	4.666	8.354	-7.941	3.069	-2.918
115	3.854	4.187	4.538	8.385	-7.967	3.096	-2.941
116	3.747	4.073	4.415	8.415	-7.992	3.122	-2.965
117	3.644	3.962	4.297	8.445	-8.017	3.149	-2.990
118	3.545	3.855	4.182	8.474	-8.043	3.175	-3.014

119	3.449	3.751	4.071	8.504	-8.068	3.202	-3.038
120	3.356	3.651	3.963	8.533	-8.092	3.229	-3.062
121	3.266	3.555	3.859	8.562	-8.117	3.256	-3.087
122	3.179	3.461	3.758	8.591	-8.142	3.283	-3.112
123	3.095	3.371	3.661	8.620	-8.166	3.311	-3.136
124	3.014	3.283	3.567	8.649	-8.190	3.338	-3.161
125	2.936	3.199	3.476	8.677	-8.214	3.366	-3.186



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