博远电子

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SPECIFICATION FOR APPROVAL

CUSTOMER	Korea
MODEL NO.	NTSE-1
PART NO.	NTSE1B103F34351A562
APPLICATION	
CUSTOMER P/N	
ISSUE DATE	2013-5-27
REV. NO	1.0
REV. DATE	2013-5-27

FOR CUSTOMER APPROVAL	CHECKED BY
	Chengping Tang
	APPROVED BY
	MeifengWang

REVISED RECORD SHEET

REV. NO	REV. DATE	REVISED CONTENT
1.0	2013-5-27	1.The new material preparation

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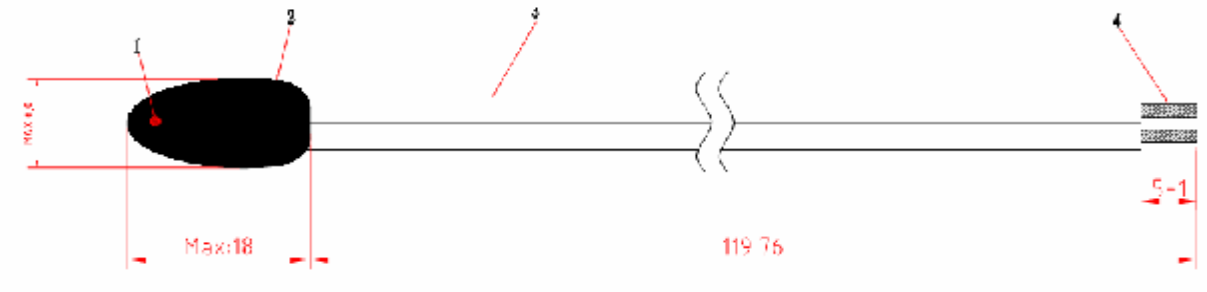
Part Number Code

Example ：

NTSE1	B	103	F	3435	1	A562
(1)	(2)	(3)	(4)	(5)	(6)	(7)

No.	Item	Digit	Specification
(1)	Product Type	NTSE1	Boyuan NTC thermistor NTSE-1 type
(2)	Definition of B Value	B	$B_{25/50}$
(3)	Zero Power Resistance at 25℃	103	$10 \times 10^3\Omega = 10.0K\Omega$
(4)	Tolerance of R25	F	±1%
(5)	B Value	3435	$B_{25/50}$:3435K
(6)	Tolerance of B Value	1	±1%
(7)	Special code	A562	

Structure and Dimensions



No.	ITEM	STANDARD	QUANTITY	REMARKS
1	ELEMENT	R_{25}:10.0KΩ ± 1% $B_{25/50}$:3435K ± 1%	1	MFE1
2	Filler material	Epoxy resin	---	black
3	LEAD WIRE	UL2651 26#	1	black
4	wire stripping	5 ± 1	2	wire stripping and tin

Electrical Characteristics

Part No.	Zero Power Resistance at 25℃	Tolerance of $R_{25℃}$	$B_{25/50}$Value	Tolerance of B Value	Max. Power Dissipation at 25℃	Dissipation Factor	Operating Temperature Range
	$R_{25℃}$ (KΩ)	(± %)	(K)	(± %)	P_{max}(mW)	δ(mW/℃)	T_L ~T_U (℃)
NTSE1B103F34351A562	10.0	1	3435	1	50	≧2	-40 ~+105

MARERIAL TO CONFIRM

NO	Item	STANDARD	QUANTITY	CERTIFICATION
1	ELEMENT	R25:10.0KΩ±1% B25/50:3435K±1%	1	ROHS 、CE APPROVED
2	LEAD WIRE	UL2651 26#	1	UL 、ROHS、 APPROVED
3	Filler material	Epoxy resin	1	ROHS、 APPROVED

1. Electrical Characteristics

ITEM	PARAMETRE	IDENTIFYING	TEST CONDITION	Min.	Nor.	Max.	Unit.
a.	Tolerance of R_{25}	R_{25}	Ta=25℃±0.05℃ P_T≦0.02mW	9.9	10.000	10.1	KΩ
b.	Tolerance of R_{50}	R_{50}	Ta=50℃±0.05℃ P_T≦0.02mW	-----	4.101	-----	KΩ
c.	R_{25} / R_{50}	K	----------	-----	2.44	-----	-----
d	Definition of B Value	$B_{25/50}$	(3853.9* LnK)	3400.65	3435	3469.35	K
e	thermal time constant (oil)	τ	25℃→85℃ T1=25+(85-25)*63.2%=62.92℃	-----	≦15	-----	Sec
f	Dissipation Factor (air)	δ	Ta=25℃±0.5℃	-----	≧2	-----	mW/℃

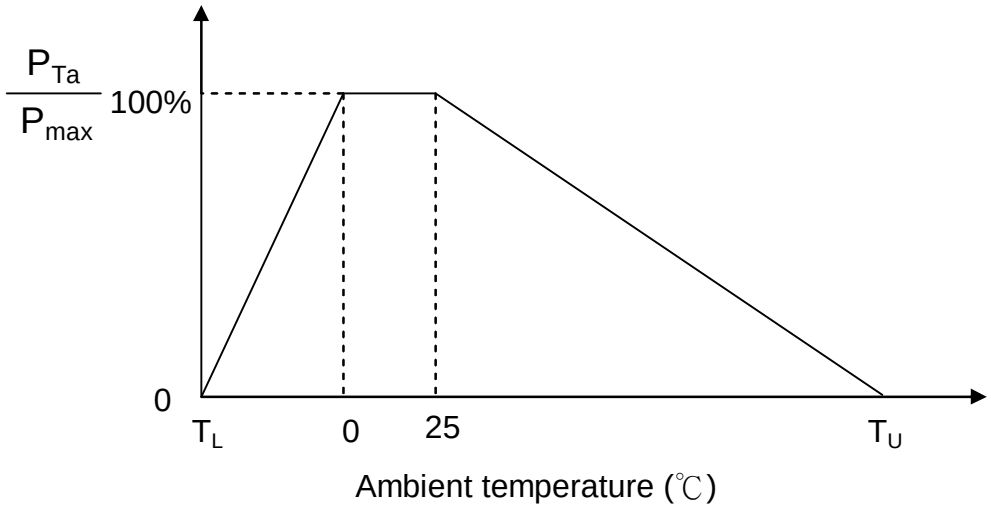
2.Operating Temperature

PARAMETRE	STANDARD	UNIT
Operating Temperature Range	-40~+105	℃

DEPENDABILITY

<table>
<tr><th>ITEM</th><th>STANDARD</th><th>TEST CONDITION</th><th>PERFORMANCE REQUIREMENT</th></tr>
<tr><td>High temperature storage test</td><td>IEC60068-2-2</td><td>85 ± 5 ℃， 1000 ± 24 hrs</td><td>No appearance damage
｜△R_{25}/R_{25}｜≦ 5 %</td></tr>
<tr><td>Low temperature storage test</td><td>IEC60068-2-1</td><td>-40± 5 ℃， 1000 ± 24 hrs</td><td>No appearance damage
｜△R_{25}/R_{25}｜≦ 5 %</td></tr>
<tr><td>The steady-state humid heat test</td><td>IEC60068-2-3</td><td>40 ± 2 ℃，9 0 ~ 95 % RH , 1000 ± 24 hrs</td><td>No appearance damage
｜△R_{25}/R_{25}｜≦ 3 %</td></tr>
<tr><td>Snap test temperature</td><td>IEC60068-2-14</td><td><table><tr><th>STEP</th><th>TEMPERATURE (℃)</th><th>PERIOD (minutes)</th></tr><tr><td>1</td><td>-40 ± 5</td><td>30 ± 3</td></tr><tr><td>2</td><td>room temperature</td><td>5 ± 3</td></tr><tr><td>3</td><td>85± 5</td><td>30 ± 3</td></tr><tr><td>4</td><td>room temperature</td><td>5 ± 3</td></tr></table></td><td>No appearance damage
｜△R_{25}/R_{25}｜≦ 3 %</td></tr>
<tr><td>Load life test</td><td>IEC60539-1 4.26.3</td><td>25 ± 5 ℃, Pmax. , 1000 ± 24 hrs</td><td>No appearance damage
｜△R_{25}/R_{25}｜≦ 3 %</td></tr>
<tr><td>Insulation resistance test</td><td>MIL-STD-202F-Method 302</td><td>500 VDC 1 min</td><td>No appearance damage
≧100 MΩ</td></tr>
<tr><td>Pressure test</td><td>MIL-STD-202F-Method 301</td><td>1800 VAC 10mA 1 s</td><td>No appearance damage</td></tr>
<tr><td>Drop test</td><td>IEC60068-2-32</td><td>At the height of 1 meter, let products has its own fall, down to 10 mm thick oak board 5 times</td><td>No appearance damage</td></tr>
</table>

Max. Power Dissipation Derating Curve



Note: T_L = Minimum operating temperature(℃)

T_U = Maximum operating temperature (℃)

For example：

Ambient temperature(Ta)＝55℃

Maximum operating temperature(Tu)＝125℃

P_{Ta}=(Tu-Ta)/(Tu-25)×Pmax＝70% Pmax

Storage Conditions of Products

(I) Storage Conditions :

1.Storage Temperature : -10℃~+40℃

2.Relative Humidity : ≦75%RH

3.Keep away from corrosive atmosphere and sunlight.

(II) Period of Storage : 1 year

SAFETY CERTIFICATION

2006/95/EC：Low Voltage Directive

2004/108/EC：Electromagnetic Compatibility Dir

SYSTEM CERTIFICATION

ISO 9001 CERTIFICATION

ROHS TESTING

RoHS

Temperature (℃)	Rmax. (KΩ)	Rnor. (KΩ)	Rmin. (KΩ)	Temperature Tol. (℃)		Resistance Tol. (%)	
-40	226.0	217.0	208.3	-0.69	0.69	4.2%	-4.0%
-39	213.0	204.6	196.5	-0.68	0.69	4.1%	-3.9%
-38	200.8	193.0	185.5	-0.68	0.68	4.0%	-3.9%
-37	189.3	182.1	175.1	-0.67	0.68	4.0%	-3.8%
-36	178.7	171.9	165.4	-0.67	0.67	3.9%	-3.8%
-35	168.7	162.4	156.4	-0.66	0.67	3.9%	-3.7%
-34	159.3	153.5	147.8	-0.66	0.66	3.8%	-3.7%
-33	150.5	145.1	139.9	-0.65	0.66	3.7%	-3.6%
-32	142.3	137.2	132.3	-0.65	0.65	3.7%	-3.6%
-31	134.6	129.8	125.3	-0.64	0.65	3.6%	-3.5%
-30	127.3	122.9	118.7	-0.64	0.64	3.6%	-3.5%
-29	120.5	116.4	112.4	-0.63	0.64	3.5%	-3.4%
-28	114.1	110.3	106.6	-0.63	0.63	3.5%	-3.3%
-27	108.1	104.5	101.1	-0.62	0.63	3.4%	-3.3%
-26	102.4	99.09	95.88	-0.62	0.62	3.3%	-3.2%
-25	97.08	93.99	90.99	-0.61	0.62	3.3%	-3.2%
-24	92.07	89.18	86.38	-0.61	0.61	3.2%	-3.1%
-23	87.35	84.65	82.04	-0.60	0.61	3.2%	-3.1%
-22	82.90	80.39	77.94	-0.60	0.60	3.1%	-3.0%
-21	78.71	76.36	74.08	-0.59	0.59	3.1%	-3.0%
-20	74.76	72.57	70.43	-0.58	0.59	3.0%	-2.9%
-19	71.03	68.98	66.99	-0.58	0.58	3.0%	-2.9%
-18	67.51	65.60	63.73	-0.57	0.58	2.9%	-2.8%
-17	64.19	62.41	60.66	-0.57	0.57	2.9%	-2.8%
-16	61.06	59.39	57.75	-0.56	0.56	2.8%	-2.7%
-15	58.10	56.53	55.01	-0.55	0.56	2.8%	-2.7%
-14	55.30	53.84	52.41	-0.55	0.55	2.7%	-2.7%

Temperature (℃)	Rmax. (KΩ)	Rnor. (KΩ)	Rmin. (KΩ)	Temperature Tol. (℃)		Resistance Tol. (%)	
-13	52.65	51.28	49.95	-0.54	0.55	2.7%	-2.6%
-12	50.15	48.87	47.62	-0.54	0.54	2.6%	-2.6%
-11	47.78	46.58	45.41	-0.53	0.53	2.6%	-2.5%
-10	45.53	44.42	43.32	-0.52	0.53	2.5%	-2.5%
-9	43.41	42.36	41.34	-0.52	0.52	2.5%	-2.4%
-8	41.40	40.42	39.46	-0.51	0.51	2.4%	-2.4%
-7	39.49	38.58	37.68	-0.50	0.51	2.4%	-2.3%
-6	37.68	36.83	35.99	-0.50	0.50	2.3%	-2.3%
-5	35.97	35.17	34.38	-0.49	0.49	2.3%	-2.2%
-4	34.35	33.60	32.86	-0.48	0.49	2.2%	-2.2%
-3	32.80	32.10	31.41	-0.48	0.48	2.2%	-2.1%
-2	31.34	30.68	30.04	-0.47	0.47	2.1%	-2.1%
-1	29.95	29.34	28.73	-0.46	0.47	2.1%	-2.1%
0	28.63	28.06	27.49	-0.45	0.46	2.0%	-2.0%
1	27.38	26.84	26.31	-0.45	0.45	2.0%	-2.0%
2	26.18	25.68	25.19	-0.44	0.44	2.0%	-1.9%
3	25.05	24.58	24.12	-0.43	0.44	1.9%	-1.9%
4	23.97	23.53	23.10	-0.43	0.43	1.9%	-1.8%
5	22.95	22.54	22.13	-0.42	0.42	1.8%	-1.8%
6	21.97	21.59	21.21	-0.41	0.41	1.8%	-1.8%
7	21.04	20.69	20.33	-0.40	0.41	1.7%	-1.7%
8	20.16	19.82	19.49	-0.40	0.40	1.7%	-1.7%
9	19.32	19.01	18.69	-0.39	0.39	1.7%	-1.6%
10	18.52	18.22	17.93	-0.38	0.38	1.6%	-1.6%
11	17.75	17.48	17.21	-0.37	0.38	1.6%	-1.6%
12	17.03	16.77	16.52	-0.37	0.37	1.5%	-1.5%
13	16.33	16.09	15.86	-0.36	0.36	1.5%	-1.5%

Temperature (℃)	Rmax. (KΩ)	Rnor. (KΩ)	Rmin. (KΩ)	Temperature Tol. (℃)		Resistance Tol. (%)	
14	15.67	15.45	15.23	-0.35	0.35	1.4%	-1.4%
15	15.04	14.83	14.62	-0.34	0.35	1.4%	-1.4%
16	14.44	14.24	14.05	-0.33	0.34	1.4%	-1.3%
17	13.86	13.68	13.50	-0.33	0.33	1.3%	-1.3%
18	13.31	13.14	12.98	-0.32	0.32	1.3%	-1.3%
19	12.79	12.63	12.48	-0.31	0.31	1.2%	-1.2%
20	12.29	12.14	12.00	-0.30	0.30	1.2%	-1.2%
21	11.81	11.67	11.54	-0.29	0.30	1.2%	-1.2%
22	11.35	11.23	11.10	-0.28	0.29	1.1%	-1.1%
23	10.92	10.80	10.68	-0.28	0.28	1.1%	-1.1%
24	10.50	10.39	10.28	-0.27	0.27	1.0%	-1.0%
25	10.10	10.000	9.900	-0.26	0.26	1.0%	-1.0%
26	9.726	9.626	9.526	-0.27	0.27	1.0%	-1.0%
27	9.367	9.267	9.168	-0.28	0.29	1.1%	-1.1%
28	9.024	8.925	8.825	-0.29	0.30	1.1%	-1.1%
29	8.695	8.596	8.497	-0.31	0.31	1.2%	-1.1%
30	8.380	8.282	8.183	-0.32	0.32	1.2%	-1.2%
31	8.078	7.980	7.883	-0.33	0.33	1.2%	-1.2%
32	7.789	7.692	7.595	-0.34	0.35	1.3%	-1.3%
33	7.512	7.415	7.319	-0.35	0.36	1.3%	-1.3%
34	7.246	7.150	7.055	-0.37	0.37	1.3%	-1.3%
35	6.990	6.896	6.801	-0.38	0.38	1.4%	-1.4%
36	6.746	6.652	6.558	-0.39	0.39	1.4%	-1.4%
37	6.511	6.418	6.325	-0.40	0.41	1.4%	-1.4%
38	6.285	6.193	6.102	-0.41	0.42	1.5%	-1.5%
39	6.069	5.978	5.888	-0.43	0.43	1.5%	-1.5%
40	5.861	5.771	5.682	-0.44	0.44	1.6%	-1.5%

Temperature (℃)	Rmax. (KΩ)	Rnor. (KΩ)	Rmin. (KΩ)	Temperature Tol. (℃)		Resistance Tol. (%)	
41	5.661	5.572	5.485	-0.45	0.46	1.6%	-1.6%
42	5.469	5.382	5.295	-0.46	0.47	1.6%	-1.6%
43	5.285	5.199	5.113	-0.48	0.48	1.7%	-1.6%
44	5.108	5.023	4.938	-0.49	0.49	1.7%	-1.7%
45	4.938	4.854	4.770	-0.50	0.51	1.7%	-1.7%
46	4.774	4.691	4.609	-0.52	0.52	1.8%	-1.7%
47	4.617	4.535	4.454	-0.53	0.53	1.8%	-1.8%
48	4.465	4.385	4.305	-0.54	0.55	1.8%	-1.8%
49	4.319	4.240	4.162	-0.55	0.56	1.9%	-1.8%
50	4.179	4.101	4.024	-0.57	0.57	1.9%	-1.9%
51	4.044	3.967	3.892	-0.58	0.58	1.9%	-1.9%
52	3.914	3.839	3.764	-0.59	0.60	2.0%	-1.9%
53	3.789	3.715	3.642	-0.61	0.61	2.0%	-2.0%
54	3.669	3.596	3.524	-0.62	0.62	2.0%	-2.0%
55	3.553	3.481	3.410	-0.63	0.64	2.1%	-2.0%
56	3.441	3.370	3.301	-0.65	0.65	2.1%	-2.1%
57	3.334	3.264	3.195	-0.66	0.66	2.1%	-2.1%
58	3.230	3.161	3.094	-0.67	0.68	2.2%	-2.1%
59	3.130	3.062	2.996	-0.69	0.69	2.2%	-2.2%
60	3.033	2.967	2.902	-0.70	0.71	2.2%	-2.2%
61	2.940	2.875	2.811	-0.71	0.72	2.3%	-2.2%
62	2.851	2.787	2.724	-0.73	0.73	2.3%	-2.3%
63	2.764	2.701	2.639	-0.74	0.75	2.3%	-2.3%
64	2.681	2.619	2.558	-0.75	0.76	2.4%	-2.3%
65	2.600	2.539	2.480	-0.77	0.77	2.4%	-2.3%
66	2.522	2.462	2.404	-0.78	0.79	2.4%	-2.4%
67	2.447	2.388	2.331	-0.79	0.80	2.5%	-2.4%

博远电子

NTC Thermistor MFE1 Type

Edition:NTSE1B103F34351A562

Temperature (℃)	Rmax. (KΩ)	Rnor. (KΩ)	Rmin. (KΩ)	Temperature Tol. (℃)		Resistanc (%
68	2.375	2.317	2.261	-0.81	0.82	2.5%
69	2.305	2.248	2.193	-0.82	0.83	2.5%
70	2.237	2.181	2.127	-0.84	0.84	2.5%
71	2.172	2.117	2.064	-0.85	0.86	2.6%
72	2.109	2.055	2.002	-0.86	0.87	2.6%
73	2.048	1.995	1.943	-0.88	0.89	2.6%
74	1.989	1.937	1.886	-0.89	0.90	2.7%
75	1.932	1.881	1.831	-0.91	0.92	2.7%
76	1.877	1.827	1.778	-0.92	0.93	2.7%
77	1.823	1.774	1.726	-0.94	0.94	2.8%
78	1.772	1.724	1.677	-0.95	0.96	2.8%
79	1.722	1.675	1.629	-0.97	0.97	2.8%
80	1.674	1.627	1.582	-0.98	0.99	2.9%
81	1.627	1.582	1.537	-0.99	1.00	2.9%
82	1.582	1.537	1.494	-1.01	1.02	2.9%
83	1.538	1.494	1.452	-1.02	1.03	2.9%
84	1.496	1.453	1.411	-1.04	1.05	3.0%
85	1.455	1.413	1.371	-1.05	1.06	3.0%
86	1.415	1.374	1.333	-1.07	1.08	3.0%
87	1.377	1.336	1.296	-1.08	1.09	3.1%
88	1.340	1.300	1.261	-1.10	1.11	3.1%
89	1.304	1.264	1.226	-1.11	1.12	3.1%
90	1.269	1.230	1.193	-1.13	1.14	3.1%
91	1.235	1.197	1.160	-1.14	1.15	3.2%
92	1.202	1.165	1.129	-1.16	1.17	3.2%
93	1.171	1.134	1.098	-1.17	1.18	3.2%

93	1.171	1.134	1.098	-1.17	1.18	3.2%	
94	1.140	1.104	1.069	-1.19	1.20	3.3%	

nce Tol. %)
-2.4%
-2.5%
-2.5%
-2.5%
-2.6%
-2.6%
-2.6%
-2.6%
-2.7%
-2.7%
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-2.9%
-3.0%
-3.0%
-3.0%
-3.1%
-3.1%
-3.1%
-3.1%

-3.1%
-3.2%

博远电子

NTC Thermistor MFE1 Type

Edition:NTSE1B103F34351A562

Temperature (℃)	Rmax. (KΩ)	Rnor. (KΩ)	Rmin. (KΩ)	Temperature Tol. (℃)		Resistan (%
95	1.110	1.075	1.040	-1.20	1.21	3.3%
96	1.081	1.046	1.013	-1.22	1.23	3.3%
97	1.053	1.019	0.9859	-1.23	1.24	3.3%
98	1.026	0.9923	0.9599	-1.25	1.26	3.4%
99	0.9992	0.9665	0.9347	-1.26	1.27	3.4%
100	0.9736	0.9414	0.9103	-1.28	1.29	3.4%
101	0.9487	0.9172	0.8866	-1.29	1.31	3.4%
102	0.9246	0.8936	0.8636	-1.31	1.32	3.5%
103	0.9012	0.8707	0.8413	-1.33	1.34	3.5%
104	0.8785	0.8486	0.8196	-1.34	1.35	3.5%
105	0.8564	0.8271	0.7986	-1.36	1.37	3.5%
106	0.8350	0.8062	0.7783	-1.37	1.38	3.6%
107	0.8142	0.7859	0.7585	-1.39	1.40	3.6%
108	0.7940	0.7662	0.7393	-1.40	1.42	3.6%
109	0.7744	0.7471	0.7207	-1.42	1.43	3.7%
110	0.7553	0.7285	0.7026	-1.44	1.45	3.7%
111	0.7368	0.7105	0.6850	-1.45	1.46	3.7%
112	0.7189	0.6930	0.6680	-1.47	1.48	3.7%
113	0.7014	0.6760	0.6514	-1.48	1.50	3.8%
114	0.6844	0.6595	0.6354	-1.50	1.51	3.8%
115	0.6679	0.6434	0.6198	-1.52	1.53	3.8%
116	0.6519	0.6278	0.6046	-1.53	1.55	3.8%
117	0.6363	0.6127	0.5898	-1.55	1.56	3.9%
118	0.6212	0.5979	0.5755	-1.56	1.58	3.9%
119	0.6064	0.5836	0.5616	-1.58	1.60	3.9%

120	**0.5921**	**0.5697**	**0.5481**	-1.60	1.61	3.9%
121	**0.5782**	**0.5562**	**0.5349**	-1.61	1.63	4.0%

ance Tol. %)
-3.2%
-3.2%
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-3.8%
-3.8%

Temperature (℃)	Rmax. (KΩ)	Rnor. (KΩ)	Rmin. (KΩ)	Temperature Tol. (℃)		Resistan (%
122	0.5647	0.5430	0.5221	-1.63	1.65	4.0%
123	0.5515	0.5302	0.5097	-1.65	1.66	4.0%
124	0.5387	0.5178	0.4976	-1.66	1.68	4.0%
125	0.5262	0.5057	0.4859	-1.68	1.70	4.1%

ance Tol. (%)
-3.8%
-3.9%
-3.9%
-3.9%