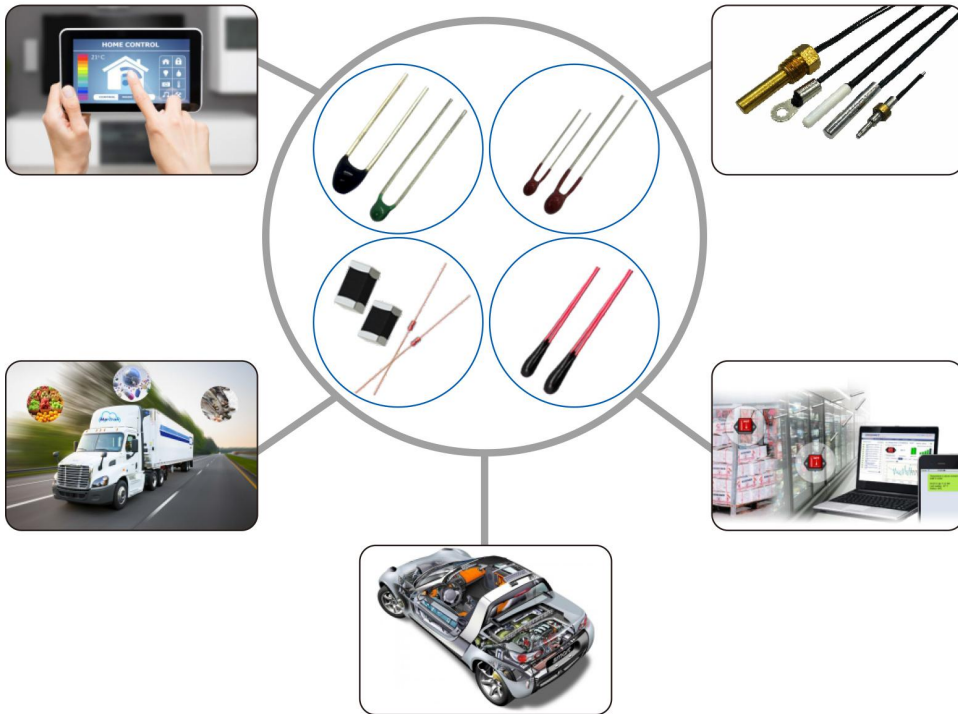




传递温度·感知冷暖

## NTC 热敏电阻元件

NTC Thermistor Components



高精度 High Accuracy  
高可靠 High Reliability  
耐高温 High Temperature

 广东爱晟电子科技有限公司  
EXSENSE Electronics Technology Co., Ltd.

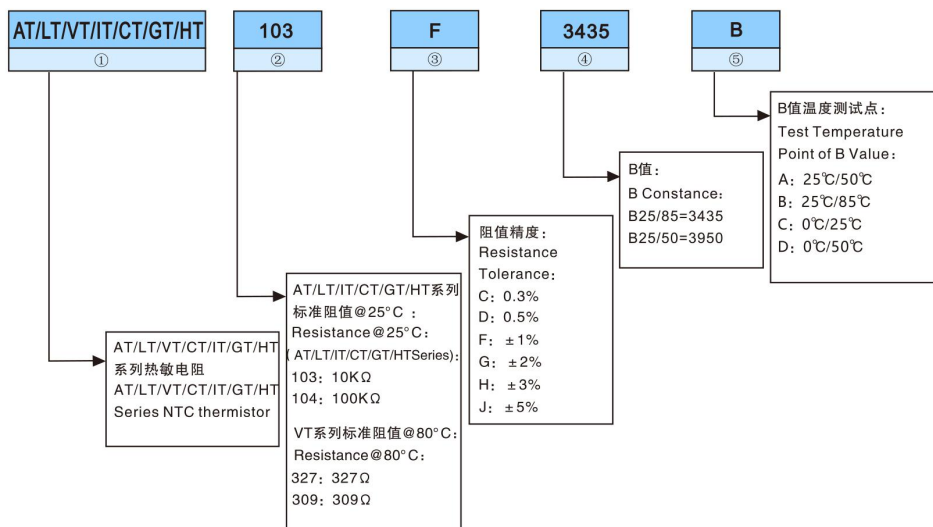
## 公司简介 About us

广东爱晟电子科技有限公司是专业从事各种NTC热敏电阻器件及相关材料的研究、生产、开发及销售的高科技民营企业。公司依托在业界的强大的协作能力，为顾客提供全系列NTC热敏电阻及NTC温度传感器。采用先进的半导体制程结合自主知识产权的NTC热敏电阻材料和加工工艺技术，通过日本、台湾、德国进口的高精度材料加工、切片、封装及测试设备，我们实现了NTC热敏器件及温度感测器的高精度批量化制造。同时通过创新管理、强化品质控制，我们确保了产品连续生产的高稳定、高可靠。公司主要生产的产品包括：高精度、高可靠NTC热敏芯片、环氧封装、玻璃封装以及贴片式的NTC热敏电阻。

**EXSENSE** Electronics Technology Co., Ltd. is a private high-tech company, involved in the production, selling, R & D of NTC thermistor, temperature sensor and electronic materials in question. Depending on the strong cooperation in circle, we provide complementary service for various electronic components. We are able to manufacture in mass production, adopting advanced semi-conductor processing system, combining with NTC thermistor and temperature sensor and electronic materials with our own intellectual property rights, using high precision material processing, cutting, sealing, packing, and testing equipments from Japan, Taiwan and Germany. Meanwhile, through creative management and intensive quality control, we assure of the high stability and reliability during continuous production. Main products include NTC die chip, NTC die chip, epoxy NTC thermistor, glass sealed NTC thermistor and SMD type NTC thermistor with high accuracy and high reliability.

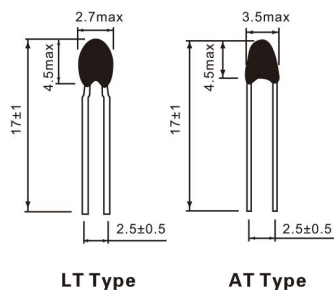


## 产品型号 Part No.



# LT/AT系列-环氧包封NTC 热敏电阻

## LT/AT Series-Epoxy Resin Coating NTC Thermistor



### 应用 Application

- ✧ 冷链运输
- ✧ 智能家居、智能线路板
- ✧ 医疗设备
- ✧ Cold-chain transportation
- ✧ Smart home, intelligent PCB
- ✧ Medical device

### 特点 Key Features

- ✧ 高精度
- ✧ 良好的耐热循环
- ✧ 性价比高
- ✧ 互换性、一致性好
- ✧ 温度范围: -50~125°C
- ✧ High accuracy
- ✧ Excellent thermal cycle endurance
- ✧ Cost performance
- ✧ Excellent inter-convertibility and consistency
- ✧ Working temperature range: -50-125°C

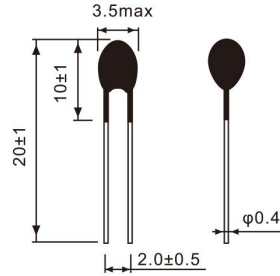
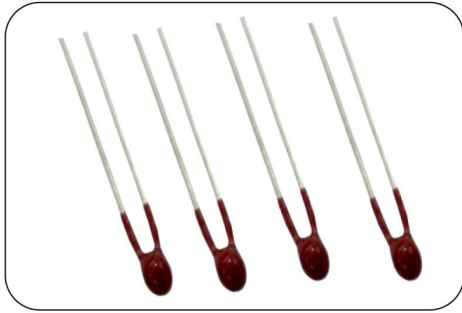
### 可选型号 Ordering Item No.

型号 Part No.	电阻值 R25: KΩ	B值(25/50°C) B Constance	额定功率 Rated Power @25°C (mW)	耗散系数 Dissipation Factor(mW/°C)	热时间常数 Thermal Time Constance(s)
LT/AT202□3950A	2	3950	≈150	≈1.5	≤10
LT/AT502□3470A	5	3470			
LT/AT103□3435B	10	3435(25/85°C)			
LT/AT103□3950A	10	3950			
LT/AT303□3950A	30	3950			
LT/AT104□3950A	100	3950			
LT/AT104□4100A	100	4100			

可根据客户要求定做参数 Special part number could be customized

# HT系列-耐高温NTC 热敏电阻

## HT Series-High Temperature NTC Thermistor



### 应用 Application

- ✧ 汽车、或需要在高温环境测量的产品
- ✧ 摩托车水温传感器
- ✧ Automobile, or the products to be measured in high temperature environment
- ✧ Motorcycle water temperature sensor

### 特点 Key Features

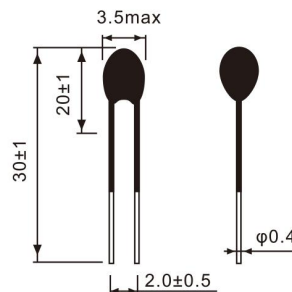
- ✧ 耐高温、高精度
- ✧ 响应时间快
- ✧ 稳定性好/可靠性高
- ✧ 温度范围: -50~180°C (短时间内可达200°C)
- ✧ High temperature and high accuracy
- ✧ Fast response time
- ✧ High reliability and stability
- ✧ Working temperature range: -50-180°C (can work at 200°C in short time)

### 可选型号 Ordering Item No.

型号 Part No.	电阻值 R25: KΩ	B值(25/50°C) B Constance	额定功率 Rated Power @ 25°C (mW)	耗散系数 Dissipation Factor(mW/°C)	热时间常数 Thermal Time Constance(s)
HT215R6 □ 3438F	0.2156(@100°C)	3438(25/100°C)	≈200	≈2.0	≤10
HT202 □ 3470A	2	3470			
HT103 □ 3435B	10	3435(25/85°C)			
HT103 □ 3950A	10	3950			
HT203 □ 3950A	20	3950			
HT104 □ 4100A	100	4100			
可根据客户要求定做参数 Special part number could be customized					

# VT系列-汽车用 NTC 热敏电阻

## VT Series-NTC Thermistor for Automobile



### 应用 Application

- ✧ 汽车油温、水温传感器
- ✧ 进气温度传感器
- ✧ Automobile oil, water temperature sensor
- ✧ Intake air temperature sensor

### 特点 Key Features

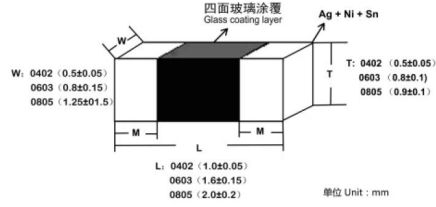
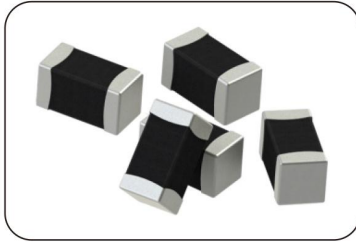
- ✧ 高精度
- ✧ 高稳定性
- ✧ 环氧树脂封装
- ✧ 快速反应
- ✧ 温度范围: -50~125°C
- ✧ High accuracy
- ✧ High stability
- ✧ Epoxy resin coating
- ✧ Fast response
- ✧ Working temperature range: -50-125°C

### 可选型号 Ordering Item No.

型号 Part No.	电阻值 R80: KΩ	B值(25/50°C) B Constance	额定功率 Rated Power @ 25°C (mW)	耗散系数 Dissipation Factor(mW/°C)	热时间常数 Thermal Time Constance(s)
VT78 □ 4150A	78	4150	≈200	≈2.0	≤15
VT327 □ 3470A	327	3470			
VT309 □ 3600A	309	3600			
VT141R2 □ 3470A	141.2(@110°C)	3470			
VT316 □ 3470A	316	3470			
可根据客户要求定做参数 Special part number could be customized					

# CT系列-贴片式 NTC热敏电阻

## CT Series-SMD Type NTC Thermistor



### 应用 Application

- ✧ 混合设计多功能模块
- ✧ IC和半导体器件过热保护
- ✧ 移动电源设备、IT设备
- ✧ 有线通信程式控制交换机
- ✧ 锂电池
- ✧ Hybrid designs and construction
- ✧ IC and semiconductor protection
- ✧ Mobile power devices, IT equipment
- ✧ Telecom exchanger
- ✧ Lithium battery

### 特点 Key Features

- ✧ 快速反应
- ✧ 良好的耐热循环
- ✧ 高可靠陶瓷结构体积小
- ✧ 无引线适合高密度表面贴装
- ✧ 工作温度: -40~125°C
- ✧ Fast response
- ✧ Excellent thermal cycle endurance
- ✧ Ceramic structure with high reliability and small volume
- ✧ Leadless, ideal for high density SMT installation
- ✧ Working temperature range: -40-125°C

### 可选型号 Ordering Item No.

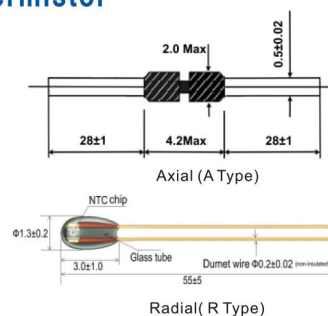
型号 Part No.	电阻值 R25: KΩ	B值(25/50°C) B Constance	额定功率 Rated Power @25°C (mW)	耗散系数 Dissipation Factor(mW/°C)	热时间常数 Thermal Time Constance(s)
CT103 □ 3435B	10	3435(25/85°C)	0402: ≈100 0603: ≈150 0805: ≈200	0402: ≈1.0 0603: ≈1.5 0805: ≈2.0	0402: ≈2.0 0603: ≈3.0 0805: ≈5.0
CT103 □ 3500A	10	3500			
CT103 □ 3950A	10	3950			
CT473 □ 4050A	47	4050			
CT104 □ 3950A	100	3950			
CT104 □ 4250A	100	4250			

可根据客户要求定做参数 Special part number could be customized



## GT系列-玻璃封装NTC热敏电阻

### GT Series-Glass Sealed NTC Thermistor



### 应用 Application

- ✧ 圣诞灯
- ✧ 3D打印机
- ✧ 小家电、汽车
- ✧ Christmas light
- ✧ 3D printer
- ✧ Small household appliances, automobile

### 特点 Key Features

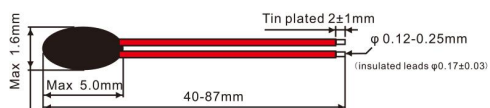
- ✧ 稳定性好，可靠性高
- ✧ 体积小，结构坚固
- ✧ 可在高温或者高湿等恶劣环境使用
- ✧ 温度范围：-50~250°C
- ✧ High reliability and stability
- ✧ Small size, firm structure
- ✧ Usable in high temperature or humidity and severe environment
- ✧ Working temperature range : -50-250°C

### 可选型号 Ordering Item No.

型号 Part No.	电阻值 R25: KΩ	B值(25/50°C) B Constance	额定功率 Rated Power @25°C (mW)	耗散系数 Dissipation Factor(mW/°C)	热时间常数 Thermal Time Constance(s)
GT501 □ 3200A	0.5	3200	≈200	≈2.0	≤10
GT502 □ 3950A	5	3950			
GT103 □ 3435B	10	3435(25/85°C)			
GT103 □ 3950A	10	3950			
GT503 □ 3950A	50	3950			
GT104 □ 3950A	100	3950			
GT104 □ 4100A	100	4100			
可根据客户要求定做参数 Special part number could be customized					

## IT系列-微型绝缘引线NTC热敏电阻

### IT Series-Miniature Insulated Lead NTC Thermistor



#### 应用 Application

- ✧ 电子温度计
- ✧ 医疗设备
- ✧ 移动电源、无线充电
- ✧ Electronic thermometer
- ✧ Medical device
- ✧ Mobile power, wireless charging

#### 特点 Key Features

- ✧ 高精度可达 $\pm 0.1\%$
- ✧ 环氧封装头部尺寸小，灵敏度高
- ✧ 稳定性好
- ✧ 温度范围： $-40\sim 105^{\circ}\text{C}$
- ✧ Accuracy reaches to  $\pm 0.1\%$
- ✧ Small size epoxy coating head, high sensitivity
- ✧ Good stability
- ✧ Working temperature range:  $-40-105^{\circ}\text{C}$

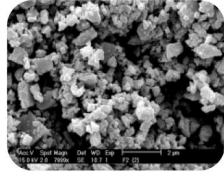
#### 可选型号 Ordering Item No.

型号 Part No.	电阻值 R25: K $\Omega$	B值(25/50 $^{\circ}\text{C}$ ) B Constance	额定功率 Rated Power @ 25 $^{\circ}\text{C}$ (mW)	耗散系数 Dissipation Factor(mW/ $^{\circ}\text{C}$ )	热时间常数 Thermal Time Constance(s)
IT103 □ 3435B	10	3435(25/85 $^{\circ}\text{C}$ )	$\approx 50$	$\approx 0.7$	$\leq 6.0$
IT103 □ 3950A	10	3950			
IT503 □ 3950A	50	3950			
IT104 □ 3950A	100	3950			
IT303 □ 3950A	30 (@ 37 $^{\circ}\text{C}$ )	3950	体温计专用 Special for thermometer		
可根据客户要求定做参数 Special part number could be customized					

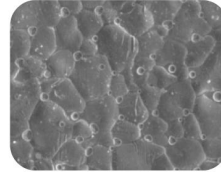


# 品质检测 Quality Control

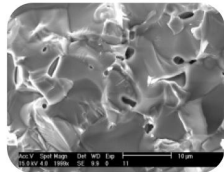
## ★ 材料结构微观检控 Microcosmic QC of Material Structure



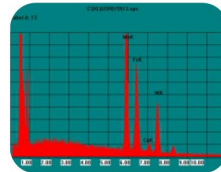
NTC半导体陶瓷粉体品质控制  
NTC Semiconductor Ceramic Powder QC



表面电极微观结构品质控制  
The Surface of Electrode Grain QC

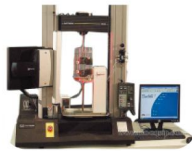


NTC半导体陶瓷烧结晶型结构品质控制  
NTC Semiconductor Ceramic Sintering Grain QC



NTC半导体材料成份检测控制  
NTC Semiconductor Material QC

## ★ 机械强度可靠性 Reliability of Mechanical Intensity



引脚拉力测试  
Pulling Test



元件离心力测试  
Centrifugal Force Test



邦定/焊锡结合强度测试  
Bonding/Soldering Intensity Test



元件机械冲击强度测试  
Mechanical Shock Intensity Test



元件震动实验  
Vibration Test

## ★ 电气性能稳定性 Stability of Electrical Performance



高温负荷实验  
High Temperature  
Loading Test



材料老化测试  
Material Aging Test



冷热冲击实验  
Thermal Shock Test



高温高压高湿实验  
High Temperature/ Pressure/  
Humidity Test

## 常规产品R-T曲线 Common R-T Curve

Temp	10KΩ		30KΩ	47KΩ	50KΩ	100KΩ	
	R25						
B25/50	3385A	3950A	3950A	3950A	3950A	3950A	4100A
B25/85	3435B	4013B	4055B	3980B	4002B	4003B	4226B
-40	204.120	299.178	990.622	1556.876	1651.16	3205.508	3694.31
-35	154.343	218.371	717.581	1125.749	1196.02	2335.679	2651.25
-30	117.844	161.140	525.505	823.207	875.85	1719.305	1923.85
-25	90.801	120.134	388.811	608.361	648.01	1277.759	1410.61
-20	70.566	90.431	290.464	454.074	484.10	958.197	1044.44
-15	55.186	68.791	218.086	342.463	364.17	721.759	778.40
-10	43.510	52.759	165.344	260.496	276.48	548.654	585.62
-5	34.569	40.776	126.513	199.748	211.73	420.680	444.53
0	27.666	31.746	97.645	154.336	163.48	325.197	340.29
5	22.281	24.894	76.012	119.832	127.09	253.214	262.42
10	18.067	19.646	59.622	93.791	99.58	198.659	203.96
15	14.745	15.598	47.104	73.970	78.60	156.978	159.71
20	12.108	12.455	37.470	58.761	62.48	124.887	125.95
25	10.000	10.000	30.000	47.000	50.00	100.000	100.00
30	8.305	8.070	24.168	37.839	40.27	80.565	79.903
35	6.934	6.545	19.584	30.653	32.62	65.286	64.233
40	5.818	5.333	15.958	24.978	26.58	53.200	51.937
45	4.905	4.365	13.073	20.469	21.78	43.581	42.226
50	4.154	3.588	10.765	16.864	17.94	35.882	34.512
55	3.534	2.970	8.893	13.984	14.86	29.713	28.283
60	3.020	2.470	7.378	11.657	12.36	24.726	23.273
65	2.590	2.063	6.145	9.7669	10.34	20.672	19.225
70	2.231	1.731	5.138	8.2226	8.682	17.359	15.941
75	1.928	1.458	4.312	6.9545	7.323	14.640	13.266
80	1.672	1.233	3.631	5.9081	6.202	12.397	11.077
85	1.451	1.049	3.072	5.0213	5.276	10.545	9.306
90	1.263	0.895	2.609	4.2827	4.505	9.004	7.845
95	1.102	0.767	2.222	3.6652	3.861	7.717	6.637
100	0.964	0.660	1.899	3.1470	3.321	6.637	5.632
105	0.846	0.569	1.627	2.7106	2.866	5.727	4.795
110	0.744	0.493	1.399	2.3417	2.482	4.958	4.095
115	0.656	0.428	1.205	2.0289	2.155	4.306	3.506
120	0.579	0.372	1.042	1.7627	1.878	3.751	3.011
125	0.513	0.325	0.903	1.5356	1.640	3.277	2.593



**广东爱晟电子科技有限公司**  
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