

features

- All ST-series thermal sensors are custom-made products. ST-series thermal sensors are designed in various shapes in accordance with your application using a platinum thin-film thermal sensor (SDT101, SDT310 series) as an element. Shapes of sensor parts can be designed flexibly to meet your shapes and dimensional needs, from simple resin mold parts to sensor parts sealed in metal protective tubes made of SUS316.
- Products with Pb Free symbol "F" meet EU RoHS requirements

ordering information

ST3000 Series

ST	31050201	F	A	X	1K	B	D
Type	Type Number	Pb Free Symbol	Element Type	Reference Temperature*	Nominal Resistance**	Resistance Tolerance**	T.C.R. Tolerance**
			A: SDT101	X: 0°C	100: 100Ω 500: 500Ω 1K: 1kΩ	B: ±0.1% C: ±0.2% D: ±0.5% F: ±1%	D: ±0.5% F: ±1% G: ±2%

ST8100 Series

ST	8102201	F	B	X	1K	B
Type	Type Number	Pb Free Symbol	Element Type	Reference Temperature	Nominal Resistance**	Class**
			B: SDT310LTC C: SDT310P	X: 0°C	100: 100Ω 500: 500Ω 1K: 1kΩ	B: ±(0.3+0.005 [t]) C: ±(1.0+0.01 [t])

* ST3000 series products with a reference temperature of 25°C (T.C.R. will be calculated between 0°C/100°C.) are also available. Contact us.

**These are specified for inner element only. Contact us when you have control request for environmental hazardous material other than the substance specified by EU RoHS.

applications and ratings

Part Designation	Element	Resistance Value at 0°C	Class: Tolerance to Measuring Temperature	Resistance Tolerance	T.C.R. (x 10 ⁻⁶ /K)	T.C.R. Tolerance (ppm/°C)
ST3000	SDT101A SDT101B	100Ω 500Ω 1kΩ	—	B: ±0.1% C: ±0.2% D: ±0.5% F: ±1%	3500	D: ±0.5% F: ±1% G: ±2%
ST8100	SDT310LTC SDT310P	100Ω 500Ω 1kΩ	B: ±(0.3+0.005[t]) C: ±(1.0+0.01[t])	—	3850	—

ST3000 Series, 1kΩ, resistance tolerance B • C are produced in pair of SDT101Series. The combination of ST3000 series, resistance tolerance B-T.C.R. and tolerance D is equivalent to class B of SDT310 tolerance to the measuring temperature.

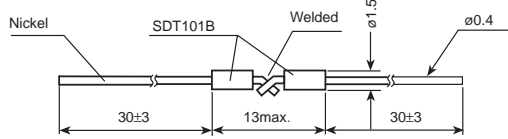
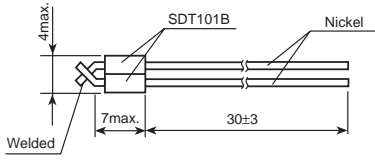
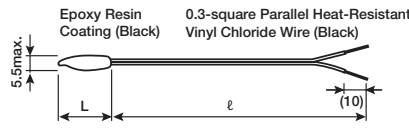
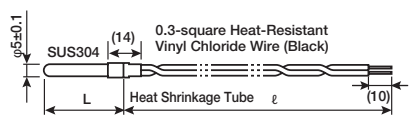
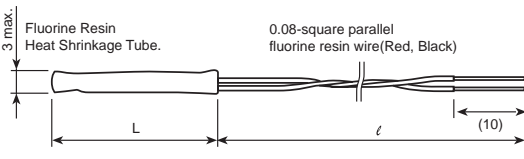
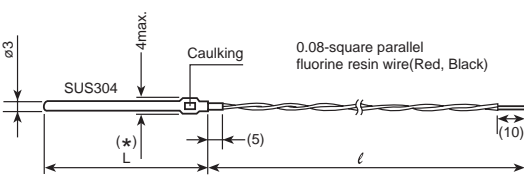
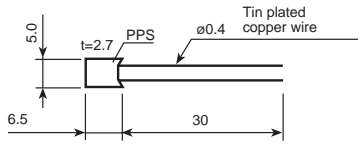
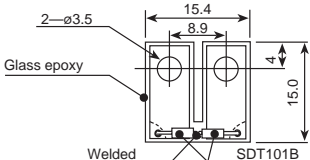
In the above table specification there are restrictions on manufacturing range depending on part number. Please refer to the Performance list.

environmental applications

Example of	Material	Example of	Material	Example of	Form	
Processing Protective Tubes	PPS	Processing External Conductors	Polyurethane coated wire	Processing of Terminals	Processing of connecting terminals	
	Epoxy resin coating		Parallel heat-resistant vinyl chloride wire			
	Fluorine resin shrinkage tube		Fluorine resin coated wire	Others	Mounting on printed circuit board	
	Polyimide		Form			
	SUS304		2-wire system			
	SUS316		3-wire, 4-wire system			
Cu	Shielded wire					

environmental applications

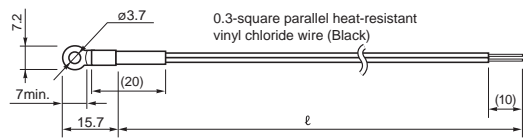
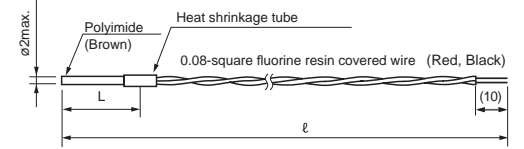
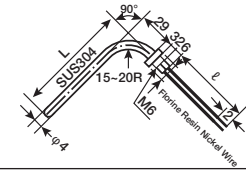
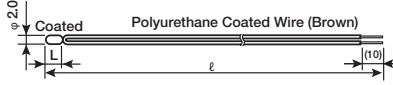
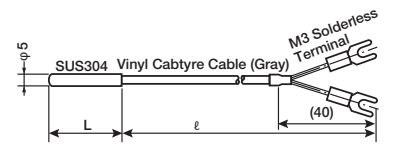
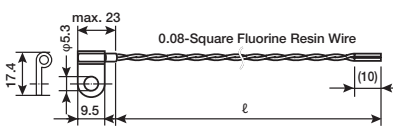
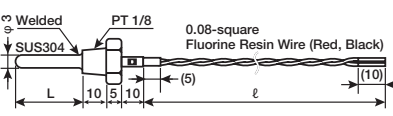
Performance Characteristics - ST3000 series (A part extract)

Shape	Unit: mm	Product Number	L (mm)	ℓ (m)	Measurement Temp. Range
 <p>Nickel SDT101B Welded ø1.5 ø0.4 30±3 13max. 30±3</p>		31011 Lead wire without solder plating	—	—	-50°C ~ +300°C
		31012 Lead wire with solder plating	—	—	-40°C ~ +120°C
 <p>SDT101B Nickel Welded 4max. 7max. 30±3</p>		31021 Lead wire without solder plating	—	—	-50°C ~ +300°C
		31022 Lead wire with solder plating	—	—	-40°C ~ +120°C
 <p>Epoxy Resin Coating (Black) 0.3-square Parallel Heat-Resistant Vinyl Chloride Wire (Black) 5.5max. L ℓ (10)</p>		31030201	30 max.	0.1	-40°C ~ +100°C
		31030205		0.5	
		31030210		1.0	
		31030230		3.0	
 <p>SUS304 0.3-square Heat-Resistant Vinyl Chloride Wire (Black) Heat Shrinkage Tube φ5±0.1 (14) L ℓ (10)</p>		31040301	35	0.1	-40°C ~ +100°C
		31040305		0.5	
		31040310		1.0	
		31040330		3.0	
 <p>Fluorine Resin Heat Shrinkage Tube. 0.08-square parallel fluorine resin wire (Red, Black) 3 max. L ℓ (10)</p>		31050201	23 max.	0.1	-40°C ~ +220°C
		31050205		0.5	
		31050210		1.0	
		31050230		3.0	
 <p>SUS304 Caulking 0.08-square parallel fluorine resin wire (Red, Black) ø3 4max. L ℓ (10) *</p> <p>* For product of resistance 1kΩ or product of resistance tolerance B, C, L=50mm is only available.</p>		31060301	30	0.1	-40°C ~ +220°C
		31060305		0.5	
		31060310		1.0	
		31060330		3.0	
		31060501	50	0.1	
		31060505		0.5	
		31060510		1.0	
		31060530		3.0	
 <p>5.0 t=2.7 PPS ø0.4 Tin plated copper wire 6.5 30</p>		3201	—	—	-20°C ~ +120°C
 <p>2-ø3.5 Glass epoxy Welded SDT101B 15.4 8.9 15.0</p>		3202	—	—	-40°C ~ +140°C

thermal sensors

environmental applications (continued)

Performance Characteristics - ST3000 series (A part extract)

Shape	Unit: mm	Product Number	L (mm)	ℓ (m)	Measurement Temp. Range
 <p>0.3-square parallel heat-resistant vinyl chloride wire (Black)</p> <p>* With the round terminals fixed, handle the wire without applying tensile stress or bending stress.</p>		32050001	—	0.1	-20°C ~ +80°C
		32050005		0.5	
		32050010		1.0	
		32050030		3.0	
 <p>0.08-square fluorine resin covered wire (Red, Black)</p>		32090201	24	0.1	-40°C ~ +120°C
		32090205		0.5	
		32090210		1.0	
		32090230		3.0	
 <p>SUS304</p> <p>90°</p> <p>29</p> <p>32.5</p> <p>15-20R</p> <p>2</p> <p>10</p> <p>4</p> <p>ℓ</p> <p>Fluorine Resin Nickel Wire</p>		32120907	90	0.7	-40°C ~ +300°C Only top of protective tubes
		32121207	120	0.7	
		32121707	175	0.7	
		32121202	120	0.2	
 <p>Polyurethane Coated Wire (Brown)</p> <p>Products with resistance value 1K or resistance tolerance B, C are not manufactured</p>		33010004	(8)	0.4	-20°C ~ +80°C
 <p>SUS304 Vinyl Cable (Gray)</p> <p>M3 Solderless Terminal</p>		33040305	35	0.5	-40°C ~ +60°C
		33040310		1.0	
		33040330		3.0	
 <p>0.08-Square Fluorine Resin Wire</p>		33060001	—	0.1	-20°C ~ +120°C
		33060005		0.5	
		33060010		1.0	
		33060030		3.0	
 <p>0.08-square Fluorine Resin Wire (Red, Black)</p>		33110305	30	0.5	-40°C ~ +220°C
		33110310		1.0	
		33110330		3.0	

environmental applications (continued)

Performance Characteristics - ST8100 series

Shape	Unit: mm	Product Number	Lead Wire Number	ℓ (m)	Measurement Temp. Range
<p>2 wire: Red Black 3 wire: Red Black Black</p>		8102201	2	0.1	SDT310LTC: -40°C ~ +105°C SDT310P: -40°C ~ +200°C
		8102205		0.5	
		8102210		1.0	
		8102301	3	0.1	
		8102305		0.5	
		8102310		1.0	
<p>2 wire: Red Black 3 wire: Red Black Black</p>		8103201	2	0.1	SDT310LTC: -40°C ~ +105°C SDT310P: -40°C ~ +200°C
		8103205		0.5	
		8103210		1.0	
		8103301	3	0.1	
		8103305		0.5	
		8103310		1.0	
<p>2 wire: Red Black 3 wire: Red Black Black</p>		8104201	2	0.1	SDT310LTC Only: -40°C ~ +105°C
		8104205		0.5	
		8104210		1.0	
		8104301	3	0.1	
		8104305		0.5	
		8104310		1.0	
		8106201	2	0.1	SDT310LTC Only: -40°C ~ +125°C
		8106205		0.5	
		8106210		1.0	
		8107301	3	0.1	SDT310LTC Only: -40°C ~ +150°C
		8107305		0.5	
		8107310		1.0	

guarantee of product

The guaranteed term of the product is one year after delivery. However, when trouble occurs during the guaranteed term because of our responsibility, the product is exchanged or is repaired. We guarantee the product itself, any damages caused by this product shall be excused.