TX Series

Thick Film Chip Thermistor

RoHS Compliant

FEATURES

- High mechanical strength and reliability are available due to thermistor film and glass-coated structure on alumina substrate
- Thickness does not change on any resistance value
- High solder ability and heat resistance are available due to triple structure electrodes
- AEC -Q200 is available
- UL1434 can be available in some parts
- Some parts can resist in operating temperature range up to 150°C



SERIES SPECIFICATIONS

Series	Size	Dissipation Factor* in Air ∂≤1.5mW/°C	Thermal Time Constant in Air τ≤5.0 sec.	Rated Power (25°C)
TX08	0805	1.3 mW/°C	2.5 sec.	130mW
TX06	0603	1.2 mW/°C	2.0 sec.	120mW
TX04	0402	1.1 mW/°C	1.5 sec.	110mW

*Dissipation factor values depend on measurement procedure and materials used.

CHARACTERISTICS

Resistance Tolerance	±1%, ±2%, ±3%, ±5%, ± 10%
B-Value	Determined by zero-power resistance at 25°C and 85°C
B-value Tolerance	±1%, ±2%, ±3%, ±5%
Operating Temp. Range	-40 ~ +125°C
Max. Permissible Power	5mW

Standard Resistance Range @25°C

B-value (25°C/85°C)	TX08	TX06	TX04
4510~4800K	25K~500K	50K~2M	75K~1M
4410~4500K	15K~400K	20K~1M	45K~500K
4210~4400K	10K~100K	15K~200K	30K~100K
4010~4200K	3K~100K	5K~200K	8K~100K
3810~4000K	1K~50K	2K~100K	4K~50Kl
3610~3800K	500~30K	1K~50K	1.5K~30K
3410~3600K	500~30K	1K~50K	1.5K~30K
3210~3400K	500~30K	1K~50K	1.5K~30K
3010~3200K	400~10K	650~20K	1.2K~10K
2810~3000K	250~5K	400~10K	750~5K
2610~2800K	80~2K	100~5K	270~2K
2410~2600K	50~1K	80~2K	150~1K

Resistance Temperature Characteristics

	Resistance (25°C) 1KΩ	1KΩ	1KΩ	10KΩ	10KΩ	10KΩ	10KΩ	100KΩ	100KΩ	100KΩ
Temp. °C	B-value (25°C/85°C) 2750K	3000K	3200K	3450K	3700K	3900K	4100K	4300K	4500K	4700K
-40	11,290	14,270	17,200	217,300	274,600	331,000	399,100	4,039,000	4,870,000	5,871,000
-35	9,012	11,130	13,180	162,800	201,100	238,200	282,000	2,878,000	3,408,000	4,036,000
-30	7,248	8,761	10,200	123,200	149,000	173,400	201,800	2,073,000	2,413,000	2,808,000
-25	5,872	6,953	7,959	94,240	111,600	127,700	146,200	1,508,000	1,727,000	1,976,000
-20	4,791	5,561	6,265	72,720	84,410	95,100	107,100	1,108,000	1,248,000	1,407,000
-15	3,935	4,481	4,971	56,620	64,470	71,530	79,370	821,600	911,600	1,011,000
-10	3,253	3,636	3,975	44,450	49,690	54,330	59,400	614,500	671,900	734,600
-5	2,705	2,971	3,202	35,170	38,630	41,640	44,890	463,500	499,700	538,600
0	2,262	2,443	2,597	28,040	30,280	32,200	34,240	352,500	374,800	398,500
5	1,902	2,020	2,120	22,520	23,920	25,100	26,340	270,100	283,400	297,40
10	1,608	1,681	1,741	18,210	19,040	19,730	20,440	208,500	216,000	223,900
15	1,366	1,406	1,439	14,820	15,260	15,620	15,990	162,100	165,900	169,800
20	1,166	1,183	1,196	12,130	12,310	12,450	12,600	126,900	128,400	129,800
25	1,000	1,000	1,000	10,000	10,000	10,000	10,000	100,000	100,000	100,000
30	861.3	849.5	840.1	8,286	8,172	8,082	7,993	79,300	78,430	77,570
35	745.0	725.0	709.4	6,903	6,718	6,573	6,432	63,280	61,920	60,580
40	647.0	621.5	601.8	5,782	5,554	5,378	5,208	50,790	49,190	47,630
45	564.1	535.1	513.0	4,867	4,617	4,426	4,243	41,010	39,310	37,690
50	493.6	462.6	439.2	4,116	3,858	3,663	3,477	33,290	31,610	30,010
55	433.5	401.5	377.7	3,498	3,240	3,047	2,866	27,170	25,560	24,040
60	382.1	349.9	326.1	2,986	2,734	2,548	2,375	22,300	20,780	19,360
65	337.9	306.0	282.6	2,560	2,318	2,141	1,978	18,390	16,980	15,690
70	299.8	268.6	246.0	2,203	1,974	1,808	1,656	15,240	13,960	12,780
75	266.8	236.5	214.8	1,904	1,688	1,533	1,392	12,690	11,530	10,470
80	238.2	209.0	188.3	1,652	1,450	1,306	1,177	10,620	9,566	8,617
85	213.3	185.3	165.6	1,439	1,251	1,118	998.8	8,927	7,978	7,130
90	191.5	164.8	146.2	1,258	1,083	960.2	851.5	7,537	6,684	5,928
95	172.4	147.0	129.4	1,103	940.9	828.2	729.0	6,392	5,626	4,953

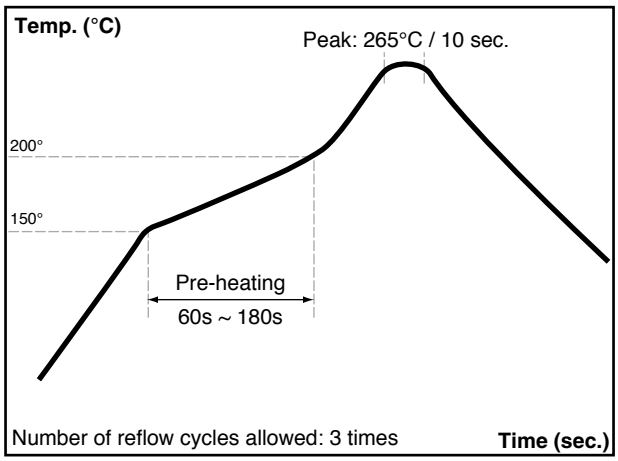
TX Series

Thick Film Chip Thermistor

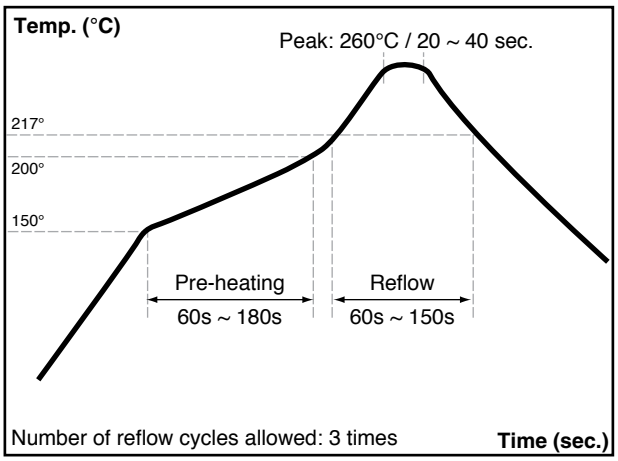
SOLDERING

Solder: Pb-free solder Sn-3.0Ag-0.5Cu

Flow

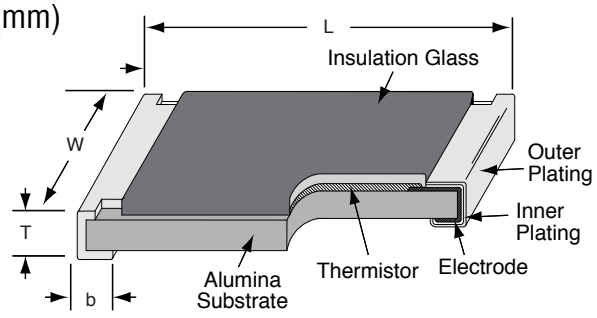


Reflow



DIMENSIONS

(mm)



Type	Inch size	L	W	t	b	Qty/reel
TX08	0805	2.00 ±0.20	1.25 ±0.20	0.55 ±0.10	0.40 ±0.20	5,000
TX06	0603	1.60 ±0.15	0.80 ±0.15	0.50 ±0.10	0.30 ±0.20	5,000
TX04	0402	1.00 ±0.05	0.50 ±0.05	0.35 ±0.05	0.25 +0.05/-0.10	10,000

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PACKAGING

(mm)

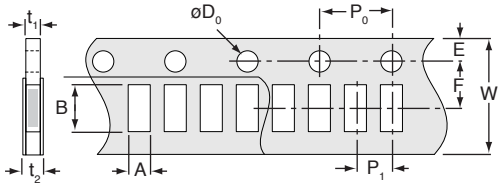
Type: Rectangular punched carrier system

Carrier tape: Paper

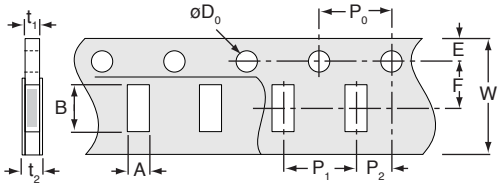
Top cover tape: Thermal adhesion plastics

Bottom cover tape: Thermal adhesion paper

TX04



TX06 & TX08



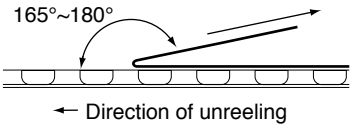
Unreeling direction →

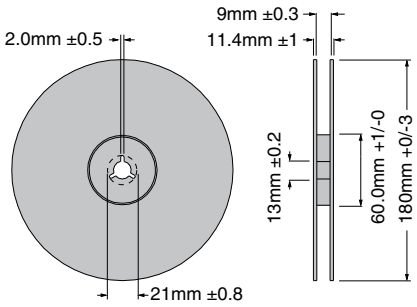
Type	A	B	W	F	E	P1	P2	P0	D0	t1	t2	Qty./reel
TX04	0.65 ±0.10	1.15 ±0.10	8.00 ±0.20	3.50 ±0.05	1.75 ±0.10	2.00 ±0.05		4.00 ±0.10	1.55 ±0.05	0.50max	1.00max	10,000
TX06	1.10 ±0.20	1.90 ±0.20	8.00 ±0.20	3.50 ±0.05	1.75 ±0.10	4.00 ±0.10	2.00 ±0.05	4.00 ±0.10	1.55 ±0.05	1.00max	1.40max	5,000
TX08	1.65 ±0.20	2.40 ±0.20	8.00 ±0.20	3.50 ±0.05	1.75 ±0.10	4.00 ±0.10	2.00 ±0.05	4.00 ±0.10	1.55 ±0.05	1.00max	1.40max	5,000

Pitch tolerance over any 10 pitches of P0 is ±0.2mm

Strength of carrier tape and cover tape: 10N(1.02kgf) or more

Peel force of top cover tape: 5~70gf (Peeling angle = 165~180°, peeling speed = about 200mm/min.)





ORDERING INFORMATION

B-value Tolerance | RoHS compliant

T X 0 8 J 4 7 2 H 3 4 8 0 E R

- **TX series**
- **Size**: 04 = 0402, 06 = 0603, 08 = 0805
- **Res. Tolerance**: F = ±1%, G = ±2%, H = ±3%, J = ±5%, K = ±10%
- **Resistance**
- **B-value**
- **Tape & Reel**

Standard Part Numbers

Part Number	B25/85
TX04F103F3435ER	3435K
TX04G104F4100ER	4100K
TX04G303G3950ER	3950K
TX04F103F3380ER	3380K
TX06F103F3435ER	3435K
TX06F104F4100ER	4100K
TX06F473H4500ER	4500K
TX06H302F3990ER	3990K
TX06F104F4390ER	4390K
TX08F103F3435ER	3450K
TX08J472H3480ER	3480K

rev 3/21-4