

Surface Mount, NTC Thermistors


REMARK

Non preferred type

(replaced by 2381 615 5.../NTCS0805E3.....T)

QUICK REFERENCE DATA	
PARAMETER	VALUE
Resistance value at 25 °C	2 kΩ to 470 kΩ
Tolerance on R_{25} - value ⁽¹⁾	± 5 %
Tolerance on $B_{25/85}$ - value	see Electrical Data and Ordering Information
Maximum dissipation at 25 °C	210 mW
Thermal time constant τ	≈ 10 s
Operating temperature range	- 55 °C to + 150 °C
R/T values	See tables
Climatic category	40/125/56
Mass	≈ 0.0155 g

Note
⁽¹⁾ Tighter tolerances are available upon request

FEATURES

- TCR from 6 %/K to 2 %/K even at high temperatures
- Tolerance on $B_{25/85}$ down to 1 %
- AgPd terminations
- Suitable for wave or reflow soldering
- Old part number was 2322 615 1...
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC


RoHS
COMPLIANT

APPLICATIONS

- Temperature compensation, sensing and protection in, for example:
 - Battery chargers
 - Consumer equipment
 - Office equipment

DESCRIPTION

Size 0805 chip thermistors with a negative temperature coefficient. The device has no marking.

PACKAGING

Available in 8 mm punched paper tape on reel package of 4000 units.

SOLDERABILITY AND RESISTANCE TO SOLDERING HEAT

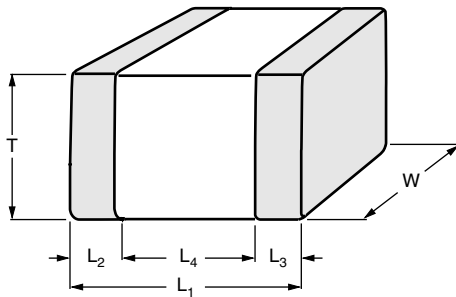
IEC 60068-2-20	TEST METHOD	TEST	PROCEDURE	REQUIREMENTS
6	T _C	Solderability	3 s at 215 °C; 2 s at 235 °C	$\Delta R/R < 5 \%$

ELECTRICAL DATA AND ORDERING INFORMATION

R_{25} - VALUE (kΩ)	TOLERANCE ON R_{25} °C	$B_{25/85}$ - VALUE (K)	TOLERANCE ON $B_{25/85}$ (%)	12 NC ORDERING CODE 2381 615 13...	SAP MATERIAL NO. NTCS0805E4... ⁽²⁾
2	5 %	3680	± 3	202	202JMT
2.2	5 %	3680	± 3	222	222JMT
4.7	5 %	3560	± 1	472	472JMT
10	5 %	3620	± 1	103	103JMT
15	5 %	3528	± 1	153	153JMT
22	5 %	3930	± 1.5	223	223JHT
33	5 %	3960	± 3	333	333JHT
47	5 %	4090	± 1.5	473	473JXT
68	5 %	3740	± 3	683	683JMT
100	5 %	3650	± 1	104	104JMT
330	5 %	4015	± 3	334	334JXT
470	5 %	4130	± 3	474	474JXT

Note
⁽²⁾ Replace digit Y in SAP part no by J for 5 %

DIMENSIONS in millimeters



L ₁	W	T MAX.	L ₂ and L ₃ MIN.	L ₄ MIN.
2.0 ± 0.2	1.25 ± 0.2	1.25	0.5 ± 0.25	0.5

RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R ₂₅ AT 2000 Ω					
T _{oper} (°C)	CATALOG NUMBER 2381 615 13202 OR SAP NO. NTCS0805E4202JMT				
	R _T /R ₂₅	TCR (%/K)	R _T (Ω)	5 % TOL. ΔR/R (%)	5 % TOL. ΔT (K)
- 40	27.23	- 6.21	54 462.6	15.94	2.57
- 35	20.06	- 6.02	40 118.4	14.88	2.47
- 30	14.92	- 5.83	29 834.5	13.87	2.38
- 25	11.20	- 5.65	22 393.8	12.89	2.28
- 20	8.481	- 5.47	16 961.6	11.95	2.19
- 15	6.480	- 5.29	12 960.5	11.05	2.09
- 10	4.994	- 5.13	9987.9	10.19	1.99
- 5	3.880	- 4.97	7760.8	9.36	1.89
0	3.393	- 4.81	6078.6	8.56	1.78
5	2.399	- 4.66	4797.7	7.79	1.67
10	1.908	- 4.51	3815.0	7.05	1.56
15	1.528	- 4.37	3055.3	6.34	1.45
20	1.232	- 4.24	2463.8	5.66	1.34
25	1.000	- 4.11	2000.0	5.00	1.22
30	0.8170	- 3.98	1633.9	5.64	1.42
35	0.6715	- 3.86	1343.1	6.26	1.62
40	0.5553	- 3.74	1110.5	6.87	1.83
45	0.4618	- 3.63	923.5	7.46	2.05
50	0.3861	- 3.53	772.2	8.04	2.28
55	0.3245	- 3.42	649.0	8.61	2.51
60	0.2742	- 3.32	548.3	9.16	2.76
65	0.2327	- 3.23	465.5	9.69	3.00
70	0.1985	- 3.14	397.0	10.22	3.26
75	0.1701	- 3.05	340.2	10.73	3.52
80	0.1464	- 2.96	292.7	11.23	3.79
85	0.1265	- 2.88	252.9	11.72	4.07
90	0.1097	- 2.80	219.4	12.20	4.35
95	0.0956	- 2.73	191.1	12.66	4.65
100	0.0835	- 2.65	167.1	13.12	4.95
105	0.0733	- 2.58	146.6	13.56	5.25
110	0.0645	- 2.51	129.1	14.00	5.57
115	0.0570	- 2.45	114.0	14.42	5.89
120	0.0505	- 2.38	101.0	14.84	6.22
125	0.0449	- 2.32	89.8	15.24	6.56
130	0.0400	- 2.26	80.1	15.64	6.91
135	0.0358	- 2.21	71.6	16.03	7.26
140	0.0321	- 2.15	64.2	16.41	7.62
145	0.0289	- 2.10	57.7	16.78	7.99
150	0.0260	- 2.05	52.1	17.15	8.37



RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R_{25} AT 2200 Ω					
Toper (°C)	CATALOG NUMBER 2381 615 13222 OR SAP NO. NTCS0805E4222JMT				
	R_T/R_{25}	TCR (%/K)	R_T (Ω)	5 % TOL. $\Delta R/R$ (%)	5 % TOL. ΔT (K)
-40	27.23	-6.21	59 909	15.94	2.57
-35	20.06	-6.02	44 130	14.88	2.47
-30	14.92	-5.83	12 818	13.87	2.38
-25	11.20	-5.65	24 633	12.89	2.28
-20	8.481	-5.47	18 658	11.95	2.19
-15	6.480	-5.29	14 257	11.05	2.09
-10	4.994	-5.13	10 987	10.19	1.99
-5	3.880	-4.97	8537	9.36	1.89
0	3.393	-4.81	6686	8.56	1.78
5	2.399	-4.66	5278	7.79	1.67
10	1.908	-4.51	4196	7.05	1.56
15	1.528	-4.37	3361	6.34	1.45
20	1.232	-4.24	2710	5.66	1.34
25	1.000	-4.11	2200	5.00	1.22
30	0.8170	-3.98	1797	5.64	1.42
35	0.6715	-3.86	1477	6.26	1.62
40	0.5553	-3.74	1222	6.87	1.83
45	0.4618	-3.63	1016	7.46	2.05
50	0.3861	-3.53	849.4	8.04	2.28
55	0.3245	-3.42	714.0	8.61	2.51
60	0.2742	-3.32	603.2	9.16	2.76
65	0.2327	-3.23	512.0	9.69	3.00
70	0.1985	-3.14	436.7	10.22	3.26
75	0.1701	-3.05	374.2	10.73	3.52
80	0.1464	-2.96	322.0	11.23	3.79
85	0.1265	-2.88	278.2	11.72	4.07
90	0.1097	-2.80	241.4	12.20	4.35
95	0.0956	-2.73	210.2	12.66	4.65
100	0.0835	-2.65	183.8	13.12	4.95
105	0.0733	-2.58	161.3	13.56	5.25
110	0.0645	-2.51	142.0	14.00	5.57
115	0.0570	-2.45	125.4	14.42	5.89
120	0.0505	-2.38	111.2	14.84	6.22
125	0.0449	-2.32	98.81	15.24	6.56
130	0.0400	-2.26	88.10	15.64	6.91
135	0.0358	-2.21	78.78	16.03	7.26
140	0.0321	-2.15	70.65	16.41	7.62
145	0.0289	-2.10	63.52	16.78	7.99
150	0.0260	-2.05	57.26	17.15	8.37

RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R_{25} AT 4700 Ω					
Toper (°C)	CATALOG NUMBER 2381 615 13472 OR SAP NO. NTCS0805E4472JMT				
	R_T/R_{25}	TCR (%/K)	R_T (Ω)	5 % TOL. $\Delta R/R$ (%)	5 % TOL. ΔT (K)
-40	21.9261	-5.75	103 053	8.50	1.48
-35	16.5224	-5.57	77 655	8.16	1.46
-30	12.5583	-5.40	59 024	7.84	1.45
-25	9.62492	-5.24	45 237	7.53	1.44
-20	7.43618	-5.08	34 950	7.23	1.42
-15	5.78976	-4.93	27 212	6.94	1.41
-10	4.54158	-4.78	21 345	6.67	1.39
-5	3.58813	-4.64	16 864	6.40	1.38
0	2.85449	-4.51	13 416	6.15	1.36
5	2.28599	-4.38	10 744	5.90	1.35

RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R_{25} AT 4700 Ω

Toper (°C)	CATALOG NUMBER 2381 615 13472 OR SAP NO. NTCS0805E4472JMT				
	R_T/R_{25}	TCR (%/K)	R_T (Ω)	5 % TOL. $\Delta R/R$ (%)	5 % TOL. ΔT (K)
10	1.84245	- 4.25	8659.5	5.66	1.33
15	1.49414	- 4.13	7022.5	5.44	1.32
20	1.21887	- 4.01	5728.7	5.21	1.30
25	1.00	- 3.90	4700.0	5.00	1.28
30	0.82494	- 3.80	3877.2	5.21	1.37
35	0.68413	- 3.69	3215.4	5.41	1.46
40	0.57025	- 3.59	2680.2	5.60	1.56
45	0.47765	- 3.50	2245.0	5.79	1.66
50	0.40198	- 3.40	1889.3	5.97	1.75
55	0.33984	- 3.31	1597.2	6.15	1.85
60	0.28856	- 3.23	1356.2	6.32	1.96
65	0.24606	- 3.15	1156.5	6.48	2.06
70	0.21067	- 3.07	990.1	6.64	2.17
75	0.18108	- 2.99	851.06	6.80	2.28
80	0.15623	- 2.91	734.29	6.95	2.39
85	0.13529	- 2.84	635.86	7.10	2.50
90	0.11757	- 2.77	552.56	7.24	2.61
95	0.10251	- 2.71	481.81	7.38	2.73
100	0.08968	- 2.64	421.50	7.52	2.85
105	0.07871	- 2.58	369.91	7.65	2.97
110	0.06928	- 2.52	325.64	7.78	3.09
115	0.06117	- 2.46	287.51	7.91	3.21
120	0.05416	- 2.41	254.57	8.03	3.34
125	0.04809	- 2.35	226.03	8.15	3.47
130	0.04282	- 2.30	201.23	8.27	3.60
135	0.03822	- 2.25	179.62	8.38	3.73
140	0.0342	- 2.20	160.73	8.49	3.86
145	0.03068	- 2.15	144.17	8.60	4.00
150	0.02758	- 2.10	129.63	8.70	4.14

RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R_{25} AT 10 000 Ω

Toper (°C)	CATALOG NUMBER 2381 615 13103 OR SAP NO. NTCS0805E4103JMT				
	R_T/R_{25}	TCR (%/K)	R_T (Ω)	5 % TOL. $\Delta R/R$ (%)	5 % TOL. ΔT (K)
- 40	23.0973	- 5.84	230 973	8.50	1.45
- 35	17.3222	- 5.67	173 222	8.16	1.44
- 30	13.1054	- 5.49	131 054	7.84	1.43
- 25	9.99934	- 5.33	99 993	7.53	1.41
- 20	7.69193	- 5.17	76 919	7.23	1.40
- 15	5.96369	- 5.01	59 637	6.94	1.38
- 10	4.6589	- 4.86	46 589	6.67	1.37
- 5	3.66623	- 4.72	36 662	6.40	1.36
0	2.9054	- 4.58	29 054	6.15	1.34
5	2.31806	- 4.45	23 181	5.90	1.33
10	1.86153	- 4.32	18 615.3	5.66	1.31
15	1.50429	- 4.20	15 042.9	5.44	1.29
20	1.22295	- 4.08	12 229.5	5.21	1.28
25	1.00	- 3.97	10 000.0	5.00	1.26
30	0.82227	- 3.86	8222.7	5.21	1.35
35	0.67977	- 3.75	6797.7	5.41	1.44
40	0.56487	- 3.65	5648.7	5.60	1.53
45	0.47174	- 3.55	4717.4	5.79	1.63
50	0.39585	- 3.46	3958.5	5.97	1.72
55	0.33371	- 3.37	3337.1	6.15	1.82



RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R_{25} AT 10 000 Ω					
Toper (°C)	CATALOG NUMBER 2381 615 13103 OR SAP NO. NTCS0805E4103JMT				
	R_T/R_{25}	TCR (%/K)	R_T (Ω)	5 % TOL. $\Delta R/R$ (%)	5 % TOL. ΔT (K)
60	0.28258	- 3.28	2825.8	6.32	1.92
65	0.24031	- 3.20	2403.1	6.48	2.03
70	0.20521	- 3.12	2052.1	6.64	2.13
75	0.17594	- 3.04	1759.37	6.80	2.24
80	0.15142	- 2.96	1514.20	6.95	2.35
85	0.1308	- 2.89	1308.04	7.10	2.46
90	0.1134	- 2.82	1134.00	7.24	2.57
95	0.09865	- 2.75	986.53	7.38	2.68
100	0.08611	- 2.69	861.10	7.52	2.80
105	0.0754	- 2.62	754.04	7.65	2.92
110	0.06624	- 2.56	662.36	7.78	3.04
115	0.05836	- 2.50	583.58	7.91	3.16
120	0.05157	- 2.45	515.67	8.03	3.28
125	0.4569	- 2.39	456.94	8.15	3.41
130	0.0406	- 2.34	406.01	8.27	3.54
135	0.03617	- 2.29	361.71	8.38	3.67
140	0.03231	- 2.23	323.06	8.49	3.80
145	0.02893	- 2.19	289.26	8.60	3.93
150	0.02596	- 2.14	259.61	8.70	4.07

RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R_{25} AT 15 000 Ω					
Toper (°C)	CATALOG NUMBER 2381 615 13153 OR SAP NO. NTCS0805E4153JMT				
	R_T/R_{25}	TCR (%/K)	R_T (Ω)	5 % TOL. $\Delta R/R$ (%)	5 % TOL. ΔT (K)
- 40	23.3421	- 6.06	350 131	8.46	1.40
- 35	17.336	- 5.84	260 040	8.13	1.39
- 30	13.0176	- 5.62	195 263	7.81	1.39
- 25	9.87717	- 5.42	148 158	7.50	1.38
- 20	7.56881	- 5.23	113 532	7.21	1.38
- 15	5.8546	- 5.05	87 819	6.93	1.37
- 10	4.56918	- 4.87	68 538	6.65	1.37
- 5	3.59635	- 4.71	53 945	6.39	1.36
0	2.85356	- 4.55	42 803	6.14	1.35
5	2.28163	- 4.40	34 224	5.89	1.34
10	1.83772	- 4.26	27 566	5.66	1.33
15	1.49054	- 4.12	22 358	5.43	1.32
20	1.21701	- 3.99	18 255	5.21	1.31
25	1.00	- 3.87	15 000	5.00	1.29
30	0.83154	- 3.75	12 473	5.20	1.39
35	0.69408	- 3.63	10 411	5.40	1.49
40	0.58149	- 3.53	8722.3	5.60	1.59
45	0.48893	- 3.42	7334.0	5.78	1.69
50	0.41256	- 3.32	6188.5	5.96	1.79
55	0.34933	- 3.23	5240.0	6.14	1.90
60	0.2968	- 3.14	4451.9	6.31	2.01
65	0.253	- 3.05	3794.9	6.47	2.12
70	0.21635	- 2.97	3245.3	6.63	2.24
75	0.1856	- 2.89	2784.0	6.78	2.35
80	0.15971	- 2.81	2395.7	6.94	2.47
85	0.13785	- 2.73	2067.7	7.08	2.59
90	0.11932	- 2.66	1789.8	7.22	2.71
95	0.10358	- 2.59	1553.7	7.36	2.84
100	0.09016	- 2.53	1352.4	7.50	2.97
105	0.0787	- 2.46	1180.5	7.63	3.10

RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R_{25} AT 15 000 Ω

Toper (°C)	CATALOG NUMBER 2381 615 13153 OR SAP NO. NTCS0805E4153JMT				
	R_T/R_{25}	TCR (%/K)	R_T (Ω)	5 % TOL. $\Delta R/R$ (%)	5 % TOL. ΔT (K)
110	0.06887	- 2.40	1033.1	7.76	3.23
115	0.06043	- 2.34	906.41	7.88	3.36
120	0.05315	- 2.29	797.27	8.00	3.50
125	0.04687	- 2.23	702.99	8.12	3.64
130	0.04142	- 2.18	621.33	8.24	3.78
135	0.03669	- 2.13	550.42	8.35	3.92
140	0.03258	- 2.08	488.72	8.46	4.07
145	0.02899	- 2.03	434.88	8.57	4.22
150	0.02585	- 1.98	387.81	8.67	4.37

RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R_{25} AT 22 000 Ω

Toper (°C)	CATALOG NUMBER 2381 615 13223 OR SAP NO. NTCS0805E4223JHT				
	R_T/R_{25}	TCR (%/K)	R_T (Ω)	5 % TOL. $\Delta R/R$ (%)	5 % TOL. ΔT (K)
- 40	30.7958	- 6.42	677 507.99	16.71	2.60
- 35	22.4562	- 6.21	494 036.94	15.59	2.51
- 30	16.5404	- 6.02	363 888.31	14.50	2.41
- 25	12.3010	- 5.83	270 622.69	13.47	2.31
- 20	9.2333	- 5.65	203 131.71	12.47	2.21
- 15	6.9923	- 5.47	153 831.44	11.51	2.10
- 10	5.3406	- 5.31	117 492.27	10.59	2.00
- 5	4.1124	- 5.15	90 473.18	9.70	1.88
0	3.1916	- 4.99	70 215.46	8.85	1.77
5	2.4957	- 4.85	54 904.79	8.02	1.66
10	1.9656	- 4.70	43 243.49	7.23	1.54
15	1.5589	- 4.57	34 295.62	6.46	1.41
20	1.2446	- 4.44	27 380.67	5.72	1.29
25	1.0000	- 4.31	22 000.00	5.00	1.16
30	0.8084	- 4.19	17 785.47	5.69	1.36
35	0.6574	- 4.08	14 463.33	6.36	1.56
40	0.5377	- 3.97	11 828.57	7.01	1.77
45	0.4421	- 3.86	9726.63	7.64	1.98
50	0.3655	- 3.76	8040.24	8.25	2.20
55	0.3036	- 3.66	6679.83	8.84	2.42
60	0.2535	- 3.56	5576.61	9.41	2.64
65	0.2126	- 3.47	4677.41	9.97	2.87
70	0.1791	- 3.38	3940.90	10.51	3.11
75	0.1516	- 3.30	3334.80	11.03	3.35
80	0.1288	- 3.22	2833.74	11.54	3.59
85	0.1099	- 3.14	2417.69	12.04	3.84
90	0.0941	- 3.06	2070.77	12.52	4.09
95	0.0809	- 2.99	1780.29	12.99	4.35
100	0.0698	- 2.92	1536.11	13.45	4.61
105	0.0605	- 2.85	1330.07	13.89	4.88
110	0.0525	- 2.78	1155.56	14.32	5.15
115	0.0458	- 2.72	1007.23	14.74	5.43
120	0.0400	- 2.65	880.71	15.15	5.71
125	0.0351	- 2.59	772.44	15.55	6.00
130	0.0309	- 2.54	679.48	15.94	6.29
135	0.0272	- 2.48	599.41	16.32	6.58
140	0.0241	- 2.43	530.24	16.70	6.88
145	0.0214	- 2.37	470.31	17.06	7.19
150	0.0190	- 2.32	418.23	17.41	7.50



RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R_{25} AT 33 000 Ω					
Toper (°C)	CATALOG NUMBER 2381 615 13333 OR SAP NO. NTCS0805E4333JHT				
	R_T/R_{25}	TCR (%/K)	R_T (Ω)	5 % TOL. $\Delta R/R$ (%)	5 % TOL. ΔT (K)
- 40	32.68563	- 6.59	1 078 626	16.66	2.53
- 35	23.6478	- 6.36	780 377	15.54	2.44
- 30	17.29545	- 6.15	570 750	14.46	2.35
- 25	12.78101	- 5.95	421 773	13.43	2.26
- 20	9.538645	- 5.76	314 775	12.44	2.16
- 15	7.186265	- 5.57	237 147	11.48	2.06
- 10	5.463007	- 5.40	180 279	10.56	1.96
- 5	4.18889	- 5.23	138 233	9.68	1.85
0	3.238476	- 5.07	106 870	8.83	1.74
5	2.523488	- 4.91	83 275	8.01	1.63
10	1.9812223	- 4.77	65 380.4	7.22	1.51
15	1.566743	- 4.62	51 702.5	6.45	1.40
20	1.247561	- 4.49	41 169.5	5.71	1.27
25	1.00	- 4.36	33 000.0	5.00	1.15
30	0.806666	- 4.24	26 620.0	5.69	1.34
35	0.654682	- 4.12	21 604.5	6.36	1.54
40	0.534445	- 4.00	17 636.7	7.00	1.75
45	0.438742	- 3.89	14 478.5	7.63	1.96
50	0.362121	- 3.79	11 950.0	8.24	2.18
55	0.30043	- 3.68	9914.2	8.82	2.39
60	0.250491	- 3.59	8266.2	9.40	2.62
65	0.209854	- 3.49	6925.2	9.95	2.85
70	0.17662	- 3.40	5828.5	10.49	3.08
75	0.149308	- 3.32	4927.18	11.01	3.32
80	0.126759	- 3.23	4183.06	11.52	3.56
85	0.108058	- 3.15	3565.93	12.01	3.81
90	0.092482	- 3.07	3051.89	12.49	4.06
95	0.079453	- 3.00	2621.93	12.96	4.32
100	0.068511	- 2.93	2260.85	13.41	4.58
105	0.059286	- 2.86	1956.42	13.85	4.85
110	0.051479	- 2.79	1698.80	14.28	5.12
115	0.044848	- 2.73	1479.98	14.70	5.39
120	0.039196	- 2.66	1293.47	15.11	5.67
125	0.034363	- 2.60	1133.96	15.51	5.96
130	0.030215	- 2.54	997.09	15.90	6.25
135	0.026645	- 2.49	879.28	16.28	6.55
140	0.023562	- 2.43	777.55	16.65	6.84
145	0.020892	- 2.38	689.45	17.01	7.15
150	0.018573	- 2.33	612.93	17.36	7.46

RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R_{25} AT 47 000 Ω					
Toper (°C)	CATALOG NUMBER 2381 615 13473 OR SAP NO. NTCS0805E4473JXT				
	R_T/R_{25}	TCR (%/K)	R_T (Ω)	5 % TOL. $\Delta R/R$ (%)	5 % TOL. ΔT (K)
- 40	37.156	- 6.82	1 746 331	11.02	1.62
- 35	26.5657	- 6.60	1 248 589	10.44	1.58
- 30	19.2065	- 6.38	902 705	9.89	1.55
- 25	14.0347	- 6.17	659 632	9.35	1.52
- 20	10.3608	- 5.97	486 956	8.84	1.48
- 15	7.72365	- 5.78	363 012	8.35	1.44
- 10	5.81188	- 5.60	273 158	7.87	1.41
- 5	4.41266	- 5.42	207 395	7.42	1.37
0	3.37917	- 5.25	158 821	6.98	1.33
5	2.60609	- 5.09	122 627	6.55	1.29

RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R_{25} AT 47 000 Ω

Toper (°C)	CATALOG NUMBER 2381 615 13473 OR SAP NO. NTCS0805E4473JXT				
	R_T/R_{25}	TCR (%/K)	R_T (Ω)	5 % TOL. $\Delta R/R$ (%)	5 % TOL. ΔT (K)
10	2.03042	- 4.94	95 430	6.14	1.24
15	1.59206	- 4.79	74 827	5.75	1.20
20	1.2574	- 4.65	59 098	5.37	1.15
25	1.00	- 4.51	47 000	5.00	1.11
30	0.8006	- 4.38	37 628	5.36	1.22
35	0.64506	- 4.26	30 318	5.70	1.34
40	0.52294	- 4.14	24 578	6.04	1.46
45	0.42644	- 4.02	20 043	6.36	1.58
50	0.34971	- 3.91	16 437	6.67	1.71
55	0.28836	- 3.81	13 553	6.98	1.83
60	0.23901	- 3.70	11 233	7.27	1.96
65	0.1991	- 3.60	9358	7.56	2.10
70	0.16666	- 3.51	7833	7.83	2.23
75	0.14016	- 3.42	6587	8.10	2.37
80	0.1184	- 3.33	5565	8.37	2.51
85	0.10045	- 3.25	4721	8.62	2.66
90	0.08557	- 3.16	4022	8.87	2.80
95	0.07319	- 3.09	3440	9.11	2.95
100	0.06285	- 3.01	2954	9.34	3.10
105	0.05416	- 2.94	2546	9.57	3.26
110	0.04685	- 2.87	2202	9.79	3.42
115	0.04066	- 2.80	1911	10.01	3.58
120	0.03541	- 2.73	1664	10.22	3.74
125	0.03094	- 2.67	1454	10.43	3.91
130	0.02711	- 2.61	1274	10.63	4.08
135	0.02383	- 2.55	1120	10.82	4.25
140	0.02101	- 2.49	987.6	11.02	4.42
145	0.01858	- 2.44	873.2	11.20	4.60
150	0.01647	- 2.38	774.1	11.38	4.78

RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R_{25} AT 68 000 Ω

Toper (°C)	CATALOG NUMBER 2381 615 13683 OR SAP NO. NTCS0805E4683JMT				
	R_T/R_{25}	TCR (%/K)	R_T (Ω)	5 % TOL. $\Delta R/R$ (%)	5 % TOL. ΔT (K)
- 40	25.783	- 6.07	1 753 245	16.02	2.64
- 35	19.1253	- 5.88	1 300 524	14.96	2.54
- 30	14.32	- 5.70	973 759.8	13.94	2.45
- 25	10.8187	- 5.52	735 674.7	12.96	2.35
- 20	8.24438	- 5.35	560 618	12.02	2.25
- 15	6.33489	- 5.19	430 772.3	11.12	2.14
- 10	4.90655	- 5.03	333 645.6	10.26	2.04
- 5	3.82943	- 4.88	260 401.1	9.42	1.93
0	3.01078	- 4.74	204 733.3	8.62	1.82
5	2.3839	- 4.60	162 105	7.84	1.70
10	1.90036	- 4.47	129 224.7	7.09	1.59
15	1.52479	- 4.34	103 686	6.37	1.47
20	1.23112	- 4.22	83 716.26	5.67	1.35
25	1.00	- 4.10	68 000	5.00	1.22
30	0.81697	- 3.99	55 554.14	5.65	1.42
35	0.67116	- 3.88	45 638.98	6.28	1.62
40	0.55433	- 3.77	37 694.27	6.89	1.83
45	0.46019	- 3.67	31 292.96	7.48	2.04
50	0.38393	- 3.58	26 107.56	8.06	2.25
55	0.32184	- 3.48	21 885.36	8.61	2.47



RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R_{25} AT 68 000 Ω					
Toper (°C)	CATALOG NUMBER 2381 615 13683 OR SAP NO. NTCS0805E4683JMT				
	R_T/R_{25}	TCR (%/K)	R_T (Ω)	5 % TOL. $\Delta R/R$ (%)	5 % TOL. ΔT (K)
60	0.27103	- 3.39	18 430.3	9.15	2.70
65	0.22926	- 3.30	15 589.41	9.67	2.93
70	0.19475	- 3.22	13 242.67	10.18	3.16
75	0.16611	- 3.14	11 295.44	10.67	3.40
80	0.14225	- 3.06	9672.73	11.15	3.64
85	0.12228	- 2.99	8314.81	11.62	3.89
90	0.1055	- 2.92	7173.88	12.07	4.14
95	0.09135	- 2.85	6211.55	12.51	4.40
100	0.07936	- 2.78	5396.80	12.94	4.66
105	0.06918	- 2.71	4704.48	13.36	4.92
110	0.0605	- 2.65	4114.12	13.77	5.19
115	0.05307	- 2.59	3609	14.16	5.47
120	0.0467	- 2.53	3175.38	14.55	5.75
125	0.04121	- 2.47	2801.96	14.92	6.03
130	0.03646	- 2.42	2479.38	15.29	6.32
135	0.03235	- 2.37	2199.88	15.65	6.62
140	0.02878	- 2.31	1957.02	16.00	6.91
145	0.02567	- 2.26	1745.39	16.34	7.22
150	0.02295	- 2.22	1560.48	16.67	7.52

RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R_{25} AT 100 000 Ω					
Toper (°C)	CATALOG NUMBER 2381 615 13104 OR SAP NO. NTCS0805E4104JMT				
	R_T/R_{25}	TCR (%/K)	R_T (Ω)	5 % TOL. $\Delta R/R$ (%)	5 % TOL. ΔT (K)
- 40	23.8997	- 5.92	2 389 969	8.58	1.45
- 35	17.8586	- 5.74	1 785 861	8.24	1.44
- 30	13.465	- 5.56	1 346 502	7.91	1.42
- 25	10.2407	- 5.39	1 024 071	7.59	1.41
- 20	7.85378	- 5.23	785 378.1	7.28	1.39
- 15	6.07181	- 5.07	607 181.2	6.99	1.38
- 10	4.73061	- 4.92	473 061.1	6.71	1.36
- 5	3.7132	- 4.77	371 319.7	6.44	1.35
0	2.93554	- 4.63	293 553.6	6.18	1.33
5	2.33677	- 4.50	233 677.1	5.92	1.32
10	1.87249	- 4.37	187 249.2	5.68	1.30
15	1.51004	- 4.24	151 003.9	5.45	1.28
20	1.22522	- 4.12	122 522.4	5.22	1.27
25	1.00	- 4.01	100 000	5.00	1.25
30	0.82081	- 3.89	82 081.36	5.21	1.34
35	0.67742	- 3.79	67 741.67	5.42	1.43
40	0.56201	- 3.68	56 201.1	5.62	1.52
45	0.46863	- 3.59	46 862.56	5.81	1.62
50	0.39266	- 3.49	39 266.09	5.99	1.72
55	0.33055	- 3.40	33 055.34	6.18	1.82
60	0.27953	- 3.31	27 952.66	6.35	1.92
65	0.23741	- 3.22	23 740.56	6.52	2.02
70	0.20248	- 3.14	20 247.74	6.69	2.13
75	0.17339	- 3.06	17 338.63	6.85	2.24
80	0.14905	- 2.99	14 905.37	7.00	2.34
85	0.12862	- 2.91	12 861.77	7.15	2.46
90	0.11139	- 2.84	11 138.64	7.30	2.57
95	0.0968	- 2.77	9680.13	7.44	2.68
100	0.08441	- 2.71	8441.05	7.58	2.80
105	0.07385	- 2.64	7384.60	7.72	2.92

RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R_{25} AT 100 000 Ω

Toper (°C)	CATALOG NUMBER 2381 615 13104 OR SAP NO. NTCS0805E4104JMT				
	R_T/R_{25}	TCR (%/K)	R_T (Ω)	5 % TOL. $\Delta R/R$ (%)	5 % TOL. ΔT (K)
110	0.06481	- 2.58	6480.76	7.85	3.04
115	0.05705	- 2.52	5704.87	7.98	3.17
120	0.05037	- 2.46	5036.67	8.11	3.29
125	0.04459	- 2.41	4459.40	8.23	3.42
130	0.03959	- 2.35	3959.18	8.35	3.55
135	0.03524	- 2.30	3524.43	8.46	3.68
140	0.03146	- 2.25	3145.52	8.58	3.81
145	0.02814	- 2.20	2814.35	8.69	3.95
150	0.02524	- 2.15	2524.15	8.80	4.09

RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R_{25} AT 330 000 Ω

Toper (°C)	CATALOG NUMBER 2381 615 13334 OR SAP NO. NTCS0805E4334JXT				
	R_T/R_{25}	TCR (%/K)	R_T (Ω)	5 % TOL. $\Delta R/R$ (%)	5 % TOL. ΔT (K)
- 40	33.3434	- 6.58	11 003.3	16.83	2.56
- 35	24.1285	- 6.36	7962.4	15.69	2.46
- 30	17.6422	- 6.16	5821.9	14.60	2.37
- 25	13.0283	- 5.97	4299.4	13.55	2.27
- 20	9.7132	- 5.78	3205.4	12.54	2.17
- 15	7.3081	- 5.60	2411.7	11.57	2.07
- 10	5.5470	- 5.43	1830.5	10.64	1.96
- 5	4.2457	- 5.27	1401.1	9.75	1.85
0	3.2760	- 5.11	1081.1	8.88	1.74
5	2.5474	- 4.96	840.63	8.05	1.62
10	1.9955	- 4.81	658.52	7.25	1.51
15	1.5744	- 4.67	519.55	6.47	1.39
20	1.2506	- 4.54	412.71	5.72	1.26
25	1.0000	- 4.41	330.00	5.00	1.13
30	0.8046	- 4.29	265.53	5.70	1.33
35	0.6514	- 4.17	214.95	6.38	1.53
40	0.5304	- 4.05	175.02	7.03	1.73
45	0.4343	- 3.94	143.31	7.67	1.94
50	0.3575	- 3.84	117.97	8.28	2.16
55	0.2958	- 3.74	97.62	8.88	2.36
60	0.2460	- 3.64	81.18	9.46	2.60
65	0.2056	- 3.55	67.83	10.02	2.83
70	0.1726	- 3.45	56.94	10.56	3.06
75	0.1455	- 3.37	48.02	11.09	3.29
80	0.1232	- 3.28	40.66	11.61	3.53
85	0.1048	- 3.20	34.57	12.11	3.78
90	0.0894	- 3.12	29.52	12.59	4.03
95	0.0767	- 3.05	25.30	13.07	4.29
100	0.0659	- 2.98	21.76	13.53	4.54
105	0.0569	- 2.91	18.78	13.97	4.81
110	0.0493	- 2.84	16.27	14.41	5.08
115	0.0429	- 2.77	14.14	14.84	5.35
120	0.0374	- 2.71	12.33	15.25	5.63
125	0.0327	- 2.65	10.79	15.65	5.91
130	0.0287	- 2.59	9.463	16.05	6.20
135	0.0252	- 2.53	8.326	16.43	6.49
140	0.0223	- 2.48	7.347	16.81	6.79
145	0.0197	- 2.42	6.500	17.17	7.09
150	0.0175	- 2.37	5.767	17.53	7.40



RESISTANCE VALUES AT INTERMEDIATE TEMPERATURES WITH R_{25} AT 470 000 Ω					
Toper (°C)	CATALOG NUMBER 2381 615 13474 OR SAP NO. NTCS0805E4474JXT				
	R_T/R_{25}	TCR (%/K)	R_T (Ω)	5 % TOL. $\Delta R/R$ (%)	5 % TOL. ΔT (K)
-40	37.1288	-6.79	17450.5	17.16	2.53
-35	26.5910	-6.57	12497.8	15.99	2.44
-30	19.2505	-6.36	9047.8	14.87	2.34
-25	14.0812	-6.15	6618.2	13.79	2.24
-20	10.4026	-5.96	4889.2	12.76	2.14
-15	7.7582	-5.77	3646.4	11.76	2.04
-10	5.8389	-5.60	2744.3	10.80	1.93
-5	4.4329	-5.43	2083.5	9.88	1.82
0	3.3937	-5.26	1595.0	8.99	1.71
5	2.6190	-5.10	1230.93	8.14	1.59
10	2.0367	-4.95	957.26	7.31	1.48
15	1.5956	-4.81	749.94	6.51	1.35
20	1.2589	-4.67	591.68	5.74	1.23
25	1.0000	-4.54	470.00	5.00	1.10
30	0.7995	-4.41	375.78	5.72	1.30
35	0.6433	-4.29	302.34	6.42	1.50
40	0.5207	-4.17	244.71	7.09	1.70
45	0.4239	-4.06	199.22	7.74	1.91
50	0.3470	-3.95	163.08	8.38	2.12
55	0.2856	-3.84	134.22	8.99	2.34
60	0.2362	-3.74	111.03	9.58	2.56
65	0.1964	-3.65	92.30	10.16	2.79
70	0.1640	-3.55	77.10	10.72	3.02
75	0.1377	-3.46	64.70	11.27	3.25
80	0.1160	-3.38	54.53	11.80	3.49
85	0.0982	-3.29	46.16	12.31	3.74
90	0.0835	-3.21	39.23	12.81	3.99
95	0.0712	-3.13	33.48	13.30	4.24
100	0.0610	-3.06	28.68	13.77	4.50
105	0.0525	-2.99	24.66	14.23	4.77
110	0.0453	-2.92	21.27	14.68	5.03
115	0.0392	-2.85	18.42	15.12	5.31
120	0.0340	-2.78	16.00	15.54	5.58
125	0.0297	-2.72	13.94	15.96	5.87
130	0.0259	-2.66	12.189	16.36	6.15
135	0.0227	-2.60	10.688	16.76	6.45
140	0.0200	-2.54	9.398	17.15	6.74
145	0.0176	-2.49	8.288	17.52	7.05
150	0.0156	-2.43	7.329	17.89	7.35



Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.