KOA SPEER ELECTRONICS, INC.

SDT73V

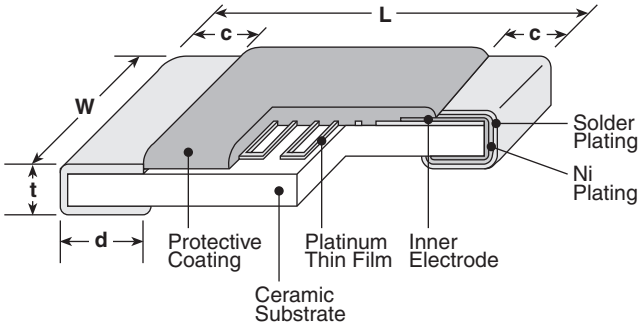
platinum thin film thermal chip sensors (for automotive)

EU RoHS COMPLIANT

features

- SMD platinum thin film thermal sensors
- T.C.R. is in accordance with JIS-DIN IEC standards
- The evaluation based on AEC-Q200 has been examined
- Suitable for both flow and reflow solderings
- Products with lead-free terminations meet EU RoHS

dimensions and construction



Type (Inch Size Code)	Dimensions inches (mm)				
	L	W	c	d	t
2B (1206)	.126±.008 (3.2±0.2)	.063±.008 (1.6±0.2)	.02±.012 (0.5±0.3)	.02±.012 (0.5±0.3)	.02±.006 (0.5±0.15)

ordering information

New Part #

SDT73V	2B	T	TE	100	F	385
Type	Size Code	Termination Material	Packaging	Nominal Resistance	Resistance Tolerance	T.C.R. (x 10^{-6}/K)
	2B: 3.2x1.6mm	T: Sn	TEK: 4mm pitch plastic embossed (1,000 pieces/reel) TE: 4mm pitch plastic embossed (5,000 pieces/reel) BK: Bulk	100: 100Ω 500: 500Ω	C: ±0.2% F: ±1%	

applications and ratings

Part Designation	Resistance @ 0°C	Resistor Tolerance*	Thermal Time Constant**	Thermal Dissipation Constant**	T.C.R. (ppm/°C)	T.C.R. Tolerance (ppm/°C)	Specified Current	Operating Temperature Range
SDT73V 2B	100Ω 500Ω	C: ±0.2% F: ±1%	6.5 seconds	2.4mW/°C	3850	±50	1mA Max.: 100Ω 0.1mA Max.: 500Ω	-55°C to +155°C

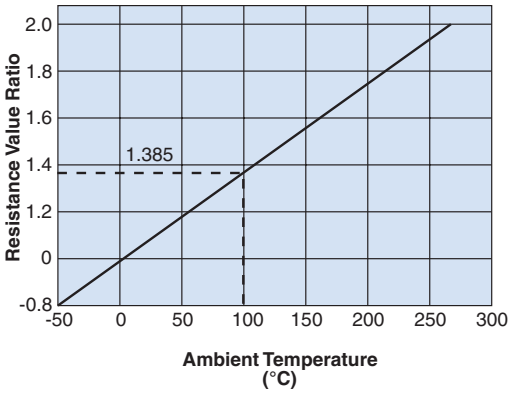
* Please consult with us about the products equivalent to class B of JIS.

** Thermal time constant and thermal dissipation constant are reference values, which are values of elements and vary with connecting or fixing methods. Thermal dissipation constant is approx. 4mW/°C under the surface mounting condition.

For further information on packaging, please refer to Appendix A.

environmental applications

Temperature Characteristics



Pt100 Resistance - Temperature Characteristic (JIS C 1604-1997)

Temperature (°C)	0	-1	-2	-3	-4	-5	-6	-7	-8	-9
-50	80.31	79.91	79.51	79.11	78.72	78.32	—	—	—	—
-40	84.27	83.87	83.48	83.08	82.69	82.29	81.89	81.50	81.10	80.70
-30	88.22	87.83	87.43	87.04	86.64	86.25	85.85	85.46	85.06	84.67
-20	92.16	91.77	91.37	90.98	90.59	90.19	89.80	89.40	89.01	88.62
-10	96.09	95.69	95.30	94.91	94.52	94.12	93.73	93.34	92.95	92.55
0	100.00	99.61	99.22	98.83	98.44	98.04	97.65	97.26	96.87	96.48
	0	1	2	3	4	5	6	7	8	9
0	100.00	100.39	100.78	101.17	101.56	101.95	102.34	102.73	103.12	103.51
10	103.90	104.29	104.68	105.07	105.46	105.85	106.24	106.63	107.02	107.40
20	107.79	108.18	108.57	108.96	109.35	109.73	110.12	110.51	110.90	111.29
30	111.67	112.06	112.45	112.83	113.22	113.61	114.00	114.38	114.77	115.15
40	115.54	115.93	116.31	116.70	117.08	117.47	117.86	118.24	118.63	119.01
50	119.40	119.78	120.17	120.55	120.94	121.32	121.71	122.09	122.47	122.86
60	123.24	123.63	124.01	124.39	124.78	125.16	125.54	125.93	126.31	126.69
70	127.08	127.46	127.84	128.22	128.61	128.99	129.37	129.75	130.13	130.52
80	130.90	131.28	131.66	132.04	132.42	132.80	133.18	133.57	133.95	134.33
90	134.71	135.09	135.47	135.85	136.23	136.61	136.99	137.37	137.75	138.13
100	138.51	138.88	139.26	139.64	140.02	140.40	140.78	141.16	141.54	141.91
110	142.29	142.67	143.05	143.43	143.80	144.18	144.56	144.94	145.31	145.69
120	146.07	146.44	146.82	147.20	147.57	147.95	148.33	148.70	149.08	149.46
130	149.83	150.21	150.58	150.96	151.33	151.71	152.08	152.46	152.83	153.21
140	153.58	153.96	154.33	154.71	155.08	155.46	155.83	156.20	156.58	156.95
150	157.33	157.70	158.07	158.45	158.82	159.19	—	—	—	—

Note: Desired temperature values are obtained by adding temperatures in the vertical and horizontal axes. When calculating a resistance value of 105°C, read the value in the column where 100°C in the vertical axis and 5°C in the horizontal axis cross. The value will be 140.40Ω. The value for 500Ω at 0°C will be the value obtained by multiplying the resistance value in this table by 5.

Performance Characteristics

Parameter	Requirement Δ R ±(%+0.05Ω) Limit	Typical	Test Method
High Temperature Exposure	±0.5%	-0.022%	+155°C, 1000 hours
Rapid Change of Temperature	±0.5%	-0.058%	-55°C (30 minutes)/ +25°C (2 - 3 minutes)/ +155°C (30 minutes)/ +25°C (2 - 3 minutes), 1000 cycles
Moisture Resistance	±0.5%	-0.041%	25°C, -65°C (90 - 100% RH), t= 24 hours/cycle. Unpowered. It is carried out 10 times.
Moisture Resistance	±0.5%	-0.016%	85°C, 85% RH, 1000 hours, 1mA, 1.5 hr ON, 0.5 hr OFF cycle
High Temperature Load Life	±0.5%	-0.017%	155°C, 1000 hours, 1mA continuous turning on electricity
Mechanical Shock	±0.5%	-0.001%	100gs Maximum, 6Dms (Standard), 12.3 feet/second
Vibration	±0.5%	-0.009%	Test from 10-2000Hz, 5g's for 20 minutes, 12 cycles each of 3 orientations
Resistance to Solder Heat	±0.5%	-0.004%	260°C for 10 seconds
Thermal Shock	±0.5%	-0.032%	-55°C (15 minutes)/ +155°C (15 minutes), 300 cycles
Solderability	95% Coverage Min.	—	235°C±5°C, 3 seconds ± 0.5 seconds
Terminal Strength	±0.5%	-0.011%	1.8kg force is kept on the samples for 60 seconds