

GOLD LEADLESS NTC CHIP



Sensor Details	
Customer	FOXCONN OPTICAL
Customer Part No.	TBA
Sample Reference Number	FSR1031019
TE Part No.	To Be Assigned After Start of Production.

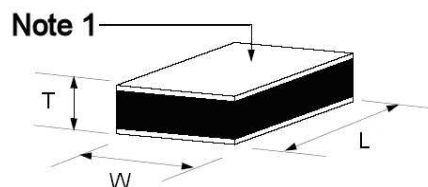
PRODUCT DESCRIPTION

TE Connectivity's 10K ohmic leadless gold terminated chip thermistors are manufactured using state-of-the-art high pressure densification ceramics technology. This advanced technology provides densification of electroceramic materials to almost 100% of theoretical density. The elimination of internal porosity in the ceramic body improves the physical properties of the electroceramic body for gold electrode application. Electrical performance of the thermistor is greatly enhanced with high stability (low resistance drift) even when used at the max operating temperature of +125°C for extended periods. With gold metallization on top and bottom this leadless gold chip is suitable for die-attach using Au/Sn solder reflow processes, silver filled epoxy adhesives and conventional wire bonding techniques.

PERFORMANCE SPECIFICATIONS

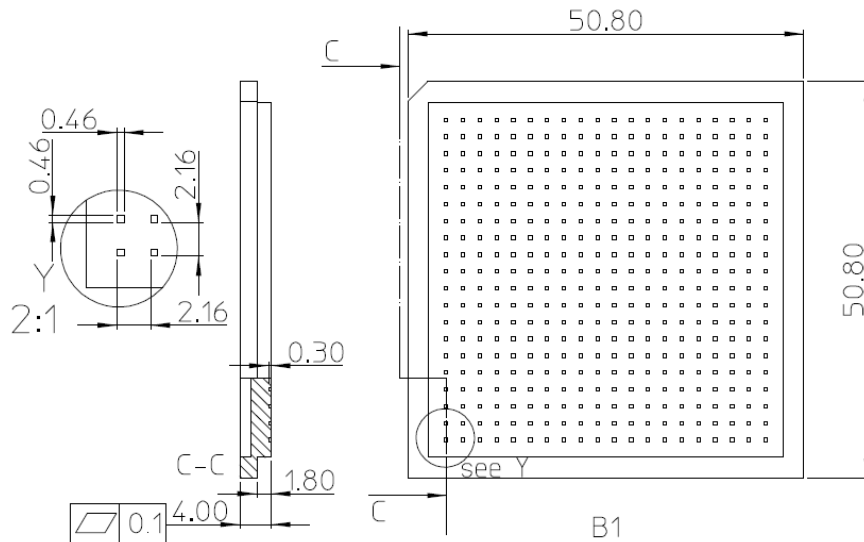
Parameter	Units	Value
Resistance @ +25°C	Ohms	10,000
Resistance Tolerance @ +25°C	%	±1
Beta Value _{25/50}	K	3930
Tolerance on Beta Value _{25/50}	%	±1.0
Time response in Liquid	Seconds	< 1
Dissipation Constant	mW/°C	0.15
Maximum Power Dissipation	mW	15
Operating Temperature Range	°C	-40°C to +125°C

MECHANICAL DETAILS



Dimensions		
T (thickness)	W (width)	L (length)
0.17 mm ± 0.03mm	0.34 mm ± 0.05mm	0.34 mm ± 0.05mm

Note 1	Gold Metallization Electrode Layer 9 ± 2.5 microns (Top and Bottom)
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PRODUCT PACKAGING – WAFFLE TRAY

Production Packaging: Waffle Pack for packaging of gold chip, Number of pockets = 20 X 20 = 400 per tray

Reference Package: H20-018-12-66C02

Pocket Size: 0.46 mm X 0.46 mm X 0.30 mm, Quantity 400 per waffle pack.

Note: For sampling purposes gold chip product packaged in waffle pack reference H20-021-12-66C02

Pocket Size: 0.56 mm X 0.56 mm X 0.30 mm

RESISTANCE-TEMPERATURE TABLE

Beta 25/50 = 3930K $\pm$ 1%Resistance at + 25°C = 10K Ω $\pm$ 1%

Temp. (°C)	Minimum (Ω)	Nominal (Ω)	Maximum (Ω)	- % Tolerance	+ % Tolerance
-40	321,959.0	336,852.5	352,399.7	-4.42%	4.62%
-39	301,540.7	315,281.0	329,614.4	-4.36%	4.55%
-38	282,548.3	295,229.1	308,448.1	-4.30%	4.48%
-37	264,873.5	276,580.5	288,776.0	-4.23%	4.41%
-36	248,416.7	259,228.3	270,483.4	-4.17%	4.34%
-35	233,086.7	243,074.6	253,465.2	-4.11%	4.27%
-34	218,799.4	228,029.4	237,625.0	-4.05%	4.21%
-33	205,477.7	214,009.8	222,874.0	-3.99%	4.14%
-32	193,050.4	200,939.9	209,130.9	-3.93%	4.08%
-31	181,452.2	188,749.5	196,320.7	-3.87%	4.01%
-30	170,622.8	177,374.3	184,374.6	-3.81%	3.95%
-29	160,506.7	166,754.9	173,229.1	-3.75%	3.88%
-28	151,052.6	156,836.6	162,825.9	-3.69%	3.82%
-27	142,213.4	147,569.1	153,111.1	-3.63%	3.76%
-26	133,945.5	138,905.7	144,035.2	-3.57%	3.69%
-25	126,208.5	130,803.6	135,552.4	-3.51%	3.63%
-24	118,965.3	123,223.1	127,620.5	-3.46%	3.57%
-23	112,181.5	116,127.6	120,200.5	-3.40%	3.51%
-22	105,825.4	109,483.4	113,256.5	-3.34%	3.45%
-21	99,867.4	103,259.0	106,755.1	-3.28%	3.39%
-20	94,280.5	97,425.6	100,665.7	-3.23%	3.33%
-19	89,039.2	91,956.4	94,959.7	-3.17%	3.27%
-18	84,120.4	86,826.6	89,610.9	-3.12%	3.21%
-17	79,502.3	82,013.1	84,594.8	-3.06%	3.15%
-16	75,164.9	77,494.8	79,888.9	-3.01%	3.09%
-15	71,089.4	73,251.8	75,472.3	-2.95%	3.03%
-14	67,258.7	69,265.8	71,325.6	-2.90%	2.97%
-13	63,656.7	65,519.8	67,430.7	-2.84%	2.92%
-12	60,268.3	61,998.0	63,771.0	-2.79%	2.86%
-11	57,079.9	58,685.8	60,330.9	-2.74%	2.80%
-10	54,078.4	55,569.6	57,096.2	-2.68%	2.75%
-9	51,251.9	52,636.6	54,053.3	-2.63%	2.69%
-8	48,589.3	49,875.1	51,189.9	-2.58%	2.64%
-7	46,080.1	47,274.2	48,494.4	-2.53%	2.58%
-6	43,714.6	44,823.6	45,956.1	-2.47%	2.53%
-5	41,483.9	42,513.8	43,564.8	-2.42%	2.47%
-4	39,379.5	40,335.9	41,311.4	-2.37%	2.42%
-3	37,393.6	38,281.8	39,187.2	-2.32%	2.36%

Temp. (°C)	Minimum (Ω)	Nominal (Ω)	Maximum (Ω)	- % Tolerance	+ % Tolerance
-2	35,519.0	36,343.7	37,183.9	-2.27%	2.31%
-1	33,748.7	34,514.5	35,294.2	-2.22%	2.26%
0	32,076.4	32,787.5	33,510.9	-2.17%	2.21%
1	30,488.8	31,148.7	31,819.7	-2.12%	2.15%
2	28,989.6	29,601.9	30,224.2	-2.07%	2.10%
3	27,573.2	28,141.4	28,718.4	-2.02%	2.05%
4	26,234.7	26,761.9	27,296.9	-1.97%	2.00%
5	24,969.4	25,458.4	25,954.3	-1.92%	1.95%
6	23,772.7	24,226.2	24,685.9	-1.87%	1.90%
7	22,640.6	23,061.2	23,487.2	-1.82%	1.85%
8	21,569.2	21,959.1	22,353.9	-1.78%	1.80%
9	20,555.0	20,916.4	21,282.0	-1.73%	1.75%
10	19,594.5	19,929.4	20,267.9	-1.68%	1.70%
11	18,684.6	18,994.8	19,308.2	-1.63%	1.65%
12	17,822.4	18,109.6	18,399.7	-1.59%	1.60%
13	17,005.0	17,270.9	17,539.2	-1.54%	1.55%
14	16,230.0	16,476.0	16,724.1	-1.49%	1.51%
15	15,494.9	15,722.4	15,951.6	-1.45%	1.46%
16	14,797.4	15,007.6	15,219.4	-1.40%	1.41%
17	14,135.3	14,329.5	14,525.0	-1.36%	1.36%
18	13,506.7	13,686.0	13,866.3	-1.31%	1.32%
19	12,909.7	13,075.2	13,241.4	-1.27%	1.27%
20	12,342.6	12,495.1	12,648.2	-1.22%	1.23%
21	11,803.7	11,944.1	12,085.0	-1.18%	1.18%
22	11,291.3	11,420.5	11,550.1	-1.13%	1.13%
23	10,804.2	10,923.0	11,041.9	-1.09%	1.09%
24	10,340.8	10,449.9	10,559.0	-1.04%	1.04%
25	9,900.0	10,000.0	10,100.0	-1.00%	1.00%
26	9,472.2	9,572.0	9,672.0	-1.04%	1.04%
27	9,065.2	9,164.8	9,264.5	-1.09%	1.09%
28	8,678.1	8,777.2	8,876.5	-1.13%	1.13%
29	8,309.6	8,408.1	8,507.0	-1.17%	1.18%
30	7,958.9	8,056.7	8,154.8	-1.21%	1.22%
31	7,624.9	7,721.9	7,819.3	-1.26%	1.26%
32	7,306.8	7,402.8	7,499.4	-1.30%	1.30%
33	7,003.7	7,098.7	7,194.3	-1.34%	1.35%
34	6,714.9	6,808.8	6,903.4	-1.38%	1.39%
35	6,439.6	6,532.4	6,625.8	-1.42%	1.43%
36	6,177.0	6,268.6	6,361.0	-1.46%	1.47%
37	5,926.6	6,017.0	6,108.1	-1.50%	1.51%
38	5,687.8	5,776.8	5,866.7	-1.54%	1.56%
39	5,459.8	5,547.6	5,636.1	-1.58%	1.60%
40	5,242.2	5,328.6	5,415.9	-1.62%	1.64%
41	5,034.5	5,119.5	5,205.5	-1.66%	1.68%

Temp. (°C)	Minimum (Ω)	Nominal (Ω)	Maximum (Ω)	- % Tolerance	+ % Tolerance
42	4,836.1	4,919.8	5,004.3	-1.70%	1.72%
43	4,646.6	4,728.9	4,812.0	-1.74%	1.76%
44	4,465.6	4,546.4	4,628.2	-1.78%	1.80%
45	4,292.5	4,371.9	4,452.3	-1.82%	1.84%
46	4,127.1	4,205.1	4,284.1	-1.85%	1.88%
47	3,969.0	4,045.5	4,123.1	-1.89%	1.92%
48	3,817.7	3,892.8	3,969.0	-1.93%	1.96%
49	3,673.0	3,746.7	3,821.5	-1.97%	2.00%
50	3,534.6	3,606.9	3,680.3	-2.00%	2.04%
51	3,402.4	3,473.3	3,545.3	-2.04%	2.07%
52	3,275.8	3,345.4	3,416.0	-2.08%	2.11%
53	3,154.7	3,222.9	3,292.2	-2.11%	2.15%
54	3,038.7	3,105.5	3,173.5	-2.15%	2.19%
55	2,927.6	2,993.1	3,059.7	-2.19%	2.23%
56	2,821.2	2,885.3	2,950.6	-2.22%	2.26%
57	2,719.2	2,782.0	2,846.0	-2.26%	2.30%
58	2,621.4	2,682.9	2,745.6	-2.29%	2.34%
59	2,527.7	2,587.9	2,649.4	-2.33%	2.37%
60	2,437.8	2,496.8	2,557.0	-2.36%	2.41%
61	2,351.6	2,409.4	2,468.3	-2.40%	2.45%
62	2,268.9	2,325.5	2,383.2	-2.43%	2.48%
63	2,189.5	2,244.9	2,301.5	-2.47%	2.52%
64	2,113.3	2,167.6	2,223.0	-2.50%	2.56%
65	2,040.2	2,093.3	2,147.6	-2.54%	2.59%
66	1,970.0	2,022.0	2,075.1	-2.57%	2.63%
67	1,902.6	1,953.5	2,005.5	-2.60%	2.66%
68	1,837.8	1,887.6	1,938.6	-2.64%	2.70%
69	1,775.6	1,824.3	1,874.2	-2.67%	2.73%
70	1,715.8	1,763.5	1,812.3	-2.70%	2.77%
71	1,658.4	1,705.0	1,752.8	-2.74%	2.80%
72	1,603.1	1,648.8	1,695.5	-2.77%	2.84%
73	1,550.0	1,594.7	1,640.4	-2.80%	2.87%
74	1,498.9	1,542.6	1,587.4	-2.83%	2.91%
75	1,449.7	1,492.5	1,536.4	-2.87%	2.94%
76	1,402.5	1,444.3	1,487.3	-2.90%	2.97%
77	1,357.0	1,397.9	1,439.9	-2.93%	3.01%
78	1,313.2	1,353.2	1,394.4	-2.96%	3.04%
79	1,271.0	1,310.2	1,350.5	-2.99%	3.07%
80	1,230.4	1,268.8	1,308.2	-3.02%	3.11%
81	1,191.3	1,228.8	1,267.4	-3.05%	3.14%
82	1,153.7	1,190.4	1,228.1	-3.08%	3.17%
83	1,117.4	1,153.3	1,190.3	-3.12%	3.21%
84	1,082.4	1,117.6	1,153.8	-3.15%	3.24%
85	1,048.7	1,083.1	1,118.5	-3.18%	3.27%

Temp. (°C)	Minimum (Ω)	Nominal (Ω)	Maximum (Ω)	- % Tolerance	+ % Tolerance
86	1,016.2	1,049.9	1,084.6	-3.21%	3.30%
87	984.9	1,017.9	1,051.8	-3.24%	3.33%
88	954.8	987.0	1020.2	-3.27%	3.37%
89	925.6	957.2	989.7	-3.30%	3.40%
90	897.5	928.4	960.3	-3.33%	3.43%
91	870.5	900.7	931.8	-3.35%	3.46%
92	844.3	873.9	904.4	-3.38%	3.49%
93	819.1	848.0	877.9	-3.41%	3.52%
94	794.7	823.0	852.3	-3.44%	3.55%
95	771.2	798.9	827.6	-3.47%	3.58%
96	748.5	775.6	803.7	-3.50%	3.62%
97	726.6	753.1	780.6	-3.53%	3.65%
98	705.4	731.4	758.3	-3.56%	3.68%
99	684.9	710.4	736.7	-3.58%	3.71%
100	665.2	690.1	715.9	-3.61%	3.74%
101	646.1	670.5	695.7	-3.64%	3.77%
102	627.6	651.5	676.2	-3.67%	3.80%
103	609.8	633.2	657.4	-3.69%	3.83%
104	592.5	615.4	639.1	-3.72%	3.86%
105	575.8	598.3	621.5	-3.75%	3.88%
106	559.7	581.7	604.4	-3.78%	3.91%
107	544.1	565.6	587.9	-3.80%	3.94%
108	529.0	550.1	571.9	-3.83%	3.97%
109	514.4	535.0	556.5	-3.86%	4.00%
110	500.3	520.5	541.5	-3.88%	4.03%
111	486.6	506.4	527.0	-3.91%	4.06%
112	473.4	492.8	512.9	-3.94%	4.09%
113	460.6	479.6	499.3	-3.96%	4.11%
114	448.2	466.8	486.1	-3.99%	4.14%
115	436.1	454.4	473.3	-4.01%	4.17%
116	424.5	442.4	460.9	-4.04%	4.20%
117	413.2	430.7	448.9	-4.06%	4.23%
118	402.3	419.5	437.3	-4.09%	4.25%
119	391.7	408.5	426.0	-4.12%	4.28%
120	381.5	397.9	415.1	-4.14%	4.31%
121	371.5	387.7	404.5	-4.17%	4.34%
122	361.9	377.7	394.2	-4.19%	4.36%
123	352.6	368.1	384.2	-4.22%	4.39%
124	343.5	358.7	374.6	-4.24%	4.42%
125	334.7	349.6	365.2	-4.26%	4.44%

SAMPLE ACCEPTANCE

TE Approval	Signature	Date
Quality		
Engineering		
Customer Approval		

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