

STEINHART & HART EQUATION

(for reference only)

Murata #: NxXH103x

Temp Range Upper Limit: **85** [deg.C] <= 125deg.C, 5deg.C step
 Temp Range Lower Limit: **-10** [deg.C] >= -40deg.C, 5deg.C step

Temp Range Mid. Value: 35 [deg.C]

Resistance at 25deg.C, R25: **10** <- Input 10 [kohm]

Select RT Charac. Code: XH 7 <- Code Index
 NCP##XH

T [deg.C]	A	B	R calc.	R table [ohm] or [kohm]	Diff R	Diff R%	Diff T [deg.C]
-40	-1932.164793	1562.798717	182.2245	195.6520	-13.4275	-6.86%	
-35	-1823.658996	1529.85544	140.8605	148.1710	-7.3105	-4.93%	0.888
-30	-1719.615704	1499.431284	109.5500	113.3471	-3.7971	-3.35%	0.626
-25	-1619.76517	1471.371617	85.7101	87.5588	-1.8487	-2.11%	0.410
-20	-1523.858958	1445.531447	67.4537	68.2367	-0.7830	-1.15%	0.231
-15	-1431.667882	1421.774548	53.3940	53.6496	-0.2556	-0.48%	0.099
-10	-1342.980172	1399.972703	42.5062	42.5062	0.0000	0.00%	0.000
-5	-1257.599854	1380.005065	34.0288	33.8922	0.1366	0.40%	-0.089
0	-1175.345302	1361.757606	27.3927	27.2186	0.1741	0.64%	-0.147
5	-1096.047951	1345.122638	22.1707	22.0211	0.1496	0.68%	-0.161
10	-1019.551143	1329.998408	18.0402	17.9255	0.1147	0.64%	-0.156
15	-945.7090911	1316.288743	14.7563	14.6735	0.0828	0.56%	-0.142
20	-874.3859562	1303.902731	12.1325	12.0805	0.0520	0.43%	-0.111
25	-805.455011	1292.754453	10.0257	10.0000	0.0257	0.26%	-0.068
30	-738.7978888	1282.762727	8.3259	8.3145	0.0114	0.14%	-0.037
35	-674.3039054	1273.850883	6.9479	6.9479	0.0000	0.00%	0.000
40	-611.8694457	1265.946558	5.8256	5.8336	-0.0080	-0.14%	0.039
45	-551.3974081	1258.981496	4.9073	4.9169	-0.0096	-0.19%	0.057
50	-492.7967007	1252.891368	4.1526	4.1609	-0.0083	-0.20%	0.060
55	-435.9817836	1247.61559	3.5296	3.5350	-0.0054	-0.15%	0.047
60	-380.872252	1243.097161	3.0131	3.0143	-0.0012	-0.04%	0.013
65	-327.3924567	1239.282489	2.5830	2.5861	-0.0031	-0.12%	0.039
70	-275.4711575	1236.121241	2.2235	2.2275	-0.0040	-0.18%	0.061
75	-225.0412068	1233.566179	1.9217	1.9245	-0.0028	-0.15%	0.051
80	-176.0392599	1231.573014	1.6673	1.6685	-0.0012	-0.07%	0.026
85	-128.4055091	1230.100251	1.4521	1.4521	0.0000	0.00%	0.000
90	-82.08344086	1229.109049	1.2693	1.2680	0.0013	0.11%	-0.039
95	-37.0196116	1228.563082	1.1136	1.1096	0.0040	0.36%	-0.135
100	6.836557751	1228.428393	0.9803	0.9738	0.0065	0.67%	-0.259
105	49.5329712	1228.673273	0.8659	0.8580	0.0079	0.93%	-0.368
110	91.11503223	1229.268124	0.7674	0.7580	0.0094	1.24%	-0.504
115	131.6258048	1230.18534	0.6823	0.6715	0.0108	1.60%	-0.665
120	171.1061622	1231.399189	0.6084	0.5964	0.0120	2.01%	-0.856
125	209.5949245	1232.885697	0.5442	0.5311	0.0131	2.47%	
From -20 to +80 deg.C					MAX:	2.47%	0.888
					MIN:	-6.86%	-0.856

$$1/T = a + b (\ln R) + c (\ln R)^3$$

	T [K]	Rtable(T)	ln R
High	358.15	1.4521	0.373010785
Low	263.15	42.5062	3.749649948
Mid	308.15	6.9479	1.938439456

ln(R1) - ln(R2) = 1.811210492
 ln(R1) - ln(R3) = 3.376639163
 (1/T1) - (1/T2) = 0.000554941
 (1/T1) - (1/T3) = 0.001007988

Coefficients: a= **0.0026855612**
 b= **0.0002855734**
 c= **0.0000008299**

=> Rcalc= EXP ((B-(A/2))^(1/3) - (B+(A/2))^(1/3))
 A = (a - (1/T)) / c
 B = SQRT ((b/(3*c))^3 + (A^2)/4)

