



## High temperature piezoelectric ceramic materials

### Typical values

Material types		PT	K81	K85	PNA	PNB		HT	
Properties	Items	T4516	N4030	N4065	N5622	N5022	N5419	B7613	B8613
Coupling Coefficients	Kp	0.08	0.29	0.28	0.04	0.06	0.04	0.06	0.05
	Kt	0.44	0.30	0.40	0.41	0.40	0.36	0.23	0.29
Piezoelectric Charge Constants (PC/N)	d <sub>33</sub>	48	85	160	74	86	80	18	18
Piezoelectric voltage constants (x10 <sup>3</sup> Vm/N)	g <sub>33</sub>	33.9	27.4	29.0	36.5	43.4	46.6	15.6	15.2
Dielectric constants	E <sub>33</sub> <sup>T</sup> /E <sub>0</sub>	160	350	650	230	224	194	130	134
Dissipation factor (%)	tan δ	0.8	0.6	1.7	0.7	0.9	1.1	0.8	0.1
Frequency contents (Hz•m)	Nt	2100	1720	1700	1600	1730	1730	2580	2590
Mechanical Q	Qm	50	15	30	16	22	20	3000	5440
Poison's ratio	q <sup>E</sup>	0.28	0.41	0.41	0.19	0.26	0.24	0.25	0.24
Curie temperature (°C)	Tc	450	400	405	560	500	546	760	860
Density (g/cm <sup>3</sup> )	p	7.7	5.4	5.5	6.0	5.6	5.5	6.3	6.7