PZT Parameters

Parameters	Symbols	PZT-5B4	PZT-5C2	PZT-42	PZT-43	PZT-82
Electro mechanical coupling coefficient	k_p	0.65	0.62	0.55	0.60	0.53
	k_{31}	0.40	0.40	0.31	0.32	0.31
	k_{33}	0.76	0.75	0.63	0.65	0.63
	k_t	0.54	0.50	0.46	0.50	0.47
Relative dielectric constant	$\varepsilon^T_{33} / \varepsilon_0$	3910	4770	1240	1580	1180
Piezoelectric strain constant	$d_{33}\times10^{-12}$C/N	620	650	250	300	225
	$d_{31}\times10^{-12}$C/N	-300	-350	-120	-150	-100
Mechanical quality factor	Q_m	60	50	500	1000	800
Frequency constant	$f_r \cdot d$ $kH_z \cdot cm$	200	190	225	215	230
	$f_r \cdot l$ $kH_z \cdot cm$	143	143	170	160	170
	$f_r \cdot t$ $kH_z \cdot cm$	190	185	195	216	228
Temperature characteristic	$\lvert TKf_r \rvert$ (-20℃~80℃) $\times10^{-6}$ / ℃	300				
	$\lvert TKC^T \rvert$ (-20℃~80℃) $\times10^{-6}$ / ℃	2000	4000		2500	2400
Curie temperature	T_c	250	220	320	350	300
Dielectric loss	tgδ（%）	2.5	3.0	0.3	0.3	0.3
Dielectric loss（400V/mm）	tgδ（400V/mm，%）			3.0	3.0	1.0
Features and usage		electro-acoustics, medical ultrasonic application	electro-acoustics, medical ultrasonic application	high power transmissions, used for underwater sound transducer	High stability, high power transmissions	high power transmissions, used for ultrasonic cleaning and welding