

Properties of PT piezoelectric ceramics
—PT series

NO.	Property	Symbol	P-71	PT-71	PT-72
1	Coupling Coefficients	k_p	0.60	0.05	0.16
		k_{31}	0.36	0.03	0.09
		k_{33}	0.65	0.13	0.38
		k_t	0.46	0.50	0.37
2	Dielectric constant (1kHz)	ϵ	800	190	300
		ϵ_{r1}^T	/	/	310
3	Poisson's ratio	σ	0.33	0.26	0.26
4	Dielectric Loss Factor (1kHz)	$\text{tg } \delta$	0.018	0.030	0.010
5	Elastic Constants ($\times 10^{-12} \text{m}^2/\text{N}$)	S	/	/	10.2
		S_{12}^E	/	/	-3.3
		S	/	/	9.0
		S_{11}^D	/	/	10.1
		S_{33}^D	/	/	7.8
		S_{55}^D	/	/	18.6
6	Piezoelectric Charge (Displacement Coefficients) ($\times 10^{-12} \text{C/N}$)	d_{15}	/	/	64.8
		d_{31}	-130.0	/	-15.0
		d_{33}	285.0	70.0	80.0
7	Piezoelectric voltage Constants ($\times 10^{-3} \text{V.m/N}$)	g_{31}	/	-5.0	-5.6
		g_{33}	/	/	20.2
		g_{15}	/	/	18.2
8	Mechanical Quality Factor	Q_M	60	330	350
9	Frequency Constants ($\text{Hz}\cdot\text{m}$)	N_d	2150	/	2670
		N_1	1550	/	1930
		N_3	/	/	2210
		N_t	/	2320	2220
10	Poisson's ratio	σ	/	/	0.26
11	Density ($\times 10^3 \text{kg/m}^3$)	ρ	6.90	6.90	6.60
12	Curie Point ($^{\circ}\text{C}$)	T_c	300	290	310