ELECTRONIC CERAMIC CO., LTD
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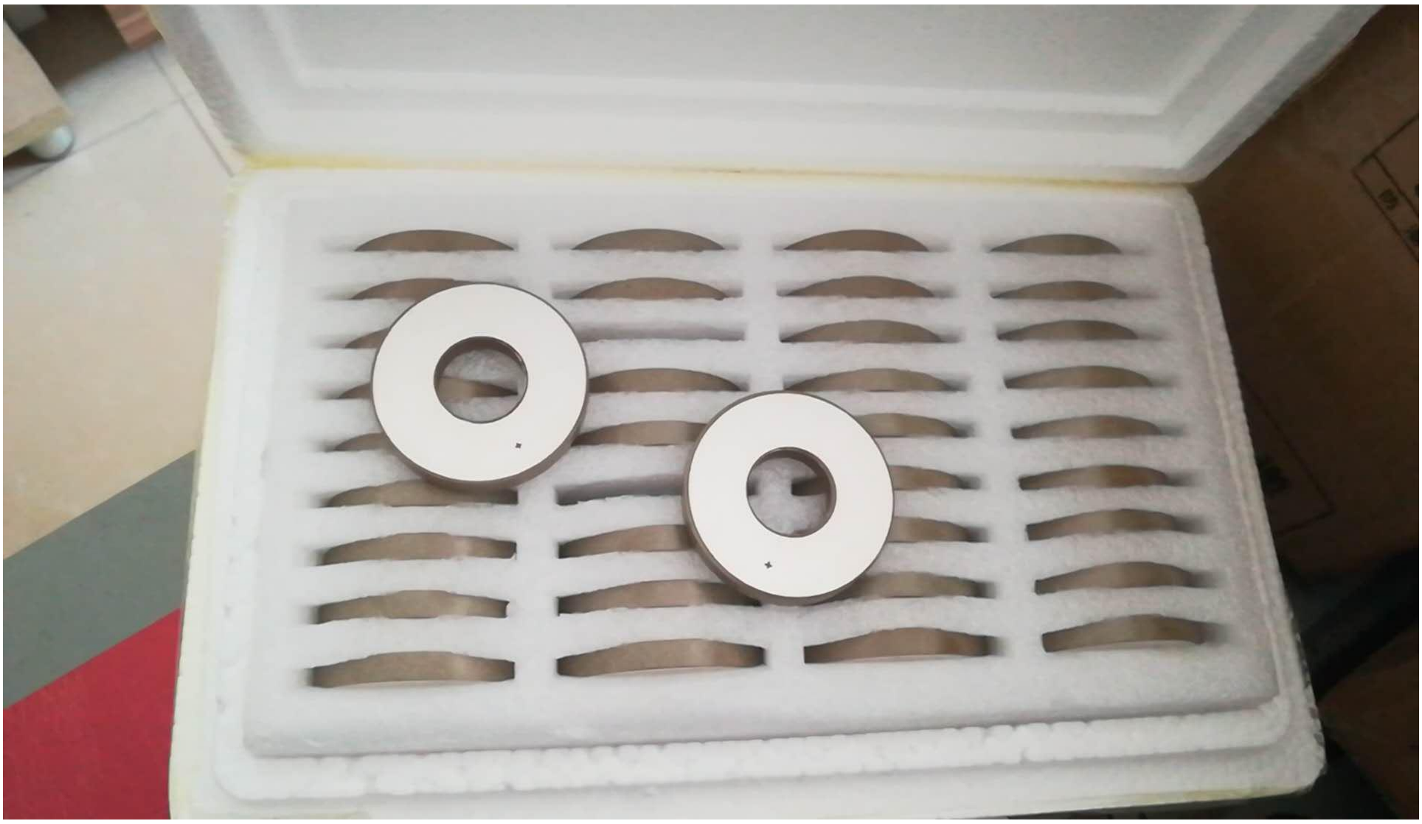
Piezoelectric Ceramic Disc

If you need other specifications please feel free to contact.

Material	Outer Diameter	Inter Diameter	Thickness (mm)
PZT8	15	7	3
PZT8	25	10	5
PZT8	30	12	5
PZT8	35	15	5
PZT8	38	15	5
PZT8	45	15	5
PZT8	50	17	5
PZT8	50	17	6.5
PZT8	50	20	5
PZT8	50	20	6
PZT8	60	30	10
Material	Outer Diameter	Inter Diameter	Thickness (mm)
PZT4	10	5	2
PZT4	25	10	4
PZT4	25	10	5
PZT4	30	12	5
PZT4	35	15	5
PZT4	38	15	5
PZT4	38	15	6
PZT4	38	13	6.5
PZT4	38	13	6.35
PZT4	45	15	5
PZT4	50	20	6
PZT4	50	17	6.5
PZT4	50	17	5
PZT4	60	30	10

Add: No.9 Dezheng West Road, Changan Town, Dongguan City, 523843 Guangdong Province, China.

Package 1: 72pcs/BOX Size:18x16x28CM



Package 2: 200pcs/BOX Size:20X23X36CM

Physical property parameters of piezoelectric ceramic

Products Item	Electromechanical Coupling Coefficient				dielectric constant	Dielectric Loss	Piezoelectric Constant				Elastic Compliance Constant	Mechanical Quality Factor	Sound velocity(m/s)				Mass density	Curie Temperature	Young modulus	Poisson ratio
	Kp	K31	K33	Kt	ε^T_{r3}	Tg δ %	d31 (-10^{-12}m/v)	d33 (10^{-12}m/v)	g31 (10^{-3}vm/n)	g33 (10^{-3}vm/n)	S^e_{11} ($10^{-12}m^2/n$)	Qm	V_d	V_1	V_3	V_t	ρ ($10^3Kg/m^3$)	Tc (℃)	Y^E_{11}<$10^9N/m^2$	σ E
P-51	0.62	0.35	0.68	0.50	2200	2	186	500	9.6	25.6	16.7	80	3000	2900	3800	4500	7.6	270	60	0.36
p-52	0.63	0.35	0.70	0.50	2400	2	204	520	9.8	24.5	17	75	3000	2900	3800	4000	7.6	270	59	0.36
P-53	0.64	0.36	0.70	0.50	2600	2	227	550	9.9	23.9	17.4	75	2950	2830	3510	3950	7.6	270	57.5	0.36
PSnN-5	0.60	0.35	0.68	0.50	1600	2	170	400	12	28	16.6	85	3100	2950	3650	4000	7.5	350	60	0.36
PMgN-51	0.64	0.35	0.70	0..52	3800	1.8	270	600	8	18	18	70	3000	2900	3600	3850	7.6	270	56	0.36
P-41	0.58	0.32	0.66	0.48	1050	0. 3	106	260	11.4	28	11.8	1000	3475	3300	3900	4200	7.5	320	85	0.30
P-42	0.58	0.33	0.67	0.48	1250	0.4	124	280	11.2	25.3	12.7	800	3380	3240	3800	4160	7.5	320	79	0.30
P-43	0.58	0.34	0.68	0.48	1420	0.5	138	300	11	24	13.2	600	3360	3200	3750	4150	7.5	320	76	0.30
P-82	0.52	0.30	0.57	0.40	1100	0.3	100	240	10.3	25	11.6	1200	3500	3500	3900	4200	7.6	310	86	0.30
PZT-5H	0.68	0.38	0.76	0.52	3200	2	275	620	9.7	22	18	70	2850	2800	3100	3900	7.5	230	56	0.36
PZT-5X	0.70	0.40	0.77	0.53	4500	2	300	750	7.5	18.8	19	65	2850	2800	3100	3850	7.5	165	53	0.39
PCrN-4	0.60	0.35	0.68	0.45	1600	0.6	156	350	11	24.7	14	400	3300	3100	3700	4100	7.5	310	71	0.30
PliS-51	0.62	0.35	0.70	0.52	2000	2	197	450	11.1	25.4	18	80	3100	2950	3850	4500	7.5	345	56	0.36
PbaS-4	0.59	0.34	0.68	0.49	1900	0.5	160	380	9.5	22.6	13.2	2200	3400	3200	3700	4250	7.5	310	76	0.33
BaTio3	0.34	0.196	0.43	0.32	1260	0.5	60	160	5.4	14.3	8.4	1200	4800	Frequency constant NP 3180	N12280	5350	5.6	115	119	0.33

Piezoelectric Ceramic Disc

The below list material PZT4, If you need other specifications we can customize it for you, Just contact us!

Specification (mm)	Capacitance (pF)	Loss tgδ (%)	Resonant Frequency (KHz)	Anti Frequency (KHz)	Broadband	Impedance (Ω)	Coupling Coefficient (Kp%/Kt%)	Qm
Φ25×Φ9.5×5	943.06	0.287	61.09	65.945	4.854	14.19726	60	1000
Φ30×Φ9×5	1493.95	0.369	55.719	61.01	5.291	8.473249	60	1000
Φ30×Φ12×5	1316.095	0.305	49.828	54.172	4.345	66.47574	60	1000
Φ30×Φ12×6.25	1101.142	0.303	50.052	54.448	4.397	37.82924	60	1000
Φ35×Φ15×5	1888.458	0.3	41.714	44.878	3.163	30.83387	60	1000
Φ35×Φ15×5.5	1592.021	0.365	41.602	45.153	3.551	40.74641	60	1000
Φ38×Φ13×6.35	1812.788	0.321	42.905	46.957	4.07	11.53928	60	1000
Φ38×Φ13×6.5	1507.638	0.326	43.714	47.633	3.918	7.880084	60	1000
Φ38×Φ15×5	2399.721	0.308	40.442	43.842	3.399	7.665609	60	1000
Φ38×Φ15×6	1892.473	0.355	39.427	43.031	3.306	29.52678	60	1000
Φ38×Φ15×6.5	1820.514	0.316	39.459	42.673	3.214	24.97847	60	1000
Φ45×Φ15×5	2784.255	0.425	38.156	41.623	3.467	8.77844	60	1000
Φ50×Φ17×5	3983.835	0.322	31.333	34.167	2.833	4.269715	60	1000
Φ50×Φ17×6	3633.66	0.351	31.947	34.789	2.842	29.46201	60	1000
Φ50×Φ17×6.5	2953.529	0.34	32.034	35.138	3.103	56.53473	60	1000
Φ50×Φ18×6.5	3156.778	0.378	31.359	34.141	2.781	7.387016	60	1000
Φ50×Φ20×6.5	3025.595	0.321	30.779	33.372	2.593	7.384663	60	1000
Φ50×Φ20×6	2861.958	0.319	30.442	33.136	2.693	12.99919	60	1000
Φ60×Φ30×10	2421.17	0.338	22.758	24.545	1.788	16.0317	60	1000
PZT8 Ring are avaliable as following:								
Φ50×Φ17×5	3687.273	0.132	35.327	37.143	2.816	16.17849	53	800
Φ50×Φ20×6	2461.695	0.08	35.286	37.589	2.312	13.65751	53	800
Φ50×Φ20×6.5	2201	0.088	34.06	36.392	2.332	14.53849	53	800
Φ60×Φ30×10	2379.264	0.142	25.864	27.712	1.848	24.80131	53	800

1.Piezoelectricity is a type of electricity that occurs when materials possessing piezoelectric properties are exposed to pressure or stress. Examples of these materials are ceramics, also called piezoceramics , and crystals.

Piezoelectric Ceramics (piezoceramics), such as Piezoelectric Ceramic Ring, Piezoelectric Ceramic Disc, Piezoelectric Ceramic Tube, Piezoelectric Ceramic Ball/Hemisphere, Piezoelectric Ceramic Cylinder and Piezoelectric Ceramic Square/Rectangular.

2.Piezoelectric Ceramics:Piezoelectric Material PZT8
PZT8 piezoelectric ceramic has high mechanical quality factor , high electromechanical coupling factors , high stability , low dissipation factor, compatible with high voltages and high mechanical loads, so widely used in ultrasonic cleaner, ultrasonic welding, ultrasonic detector, ultrasonic motor, ultrasonic transformer and other high-power emanant transducers and so on.

3. Piezoelectric Ceramics:Piezoelectric Material PZT4
PZT4 piezoelectric ceramic has characteristics similar to P8 , but PZT4 is the middle power transmitting and receiving matrial,. It' s widely used in ultrasonic cleaners, ultrasonic welding, vibratory motors. high frequency transducers and stress pressure sensors and so on.

4. Piezoelectric Ceramics:Piezoelectric Material PZT5
PZT5 piezoelectric ceramic has the function of large displacements and high sensitivity, which is the soft material, so widely used in flow meters, medical ultrasound, level sensors, microphones and so on

5. Technical Piezo Ceramics description

Piezoelectricity is the property of nearly all materials that have a non-centrosymmetric crystal structure.

Some naturally occuring crystalline materials that possess these properties are quartz and tourmaline .Some aritficially produced piezoelectric crystals are Rochelle salt, ammonium dihydrogen phosphate and lithium sulphate. Another class of materials possessing these properties is polarized piezoelectric ceramic. In contrast to the naturally occurring piezo-electric crystals, piezoelectric ceramics have a polycrystalline structure.

The most commonly produced piezoelectric ceramics are lead zirconate titanate (PZT), barium titanate and lead titan-ate. Ceramic materials have several advantages over single crystals, especially the ease of fabrication into a variety of shapes and sizes. In contrast, single crystals must be cut along certain crystallographic directions, limiting the possible
geometric shapes.

PZT (and many other piezoelectric materials) have crystal structures belonging to the perovskite family with the general formula AB03-tric) structure are shown.

A piezoelectric ceramic material consists of small grains (crystallites), each containing domains in which the polar direction of the unit cells are aligned. Before poling, these grains and domains are randomly oriented; hence the net polarization of the material is zero, i.e. the ceramic does not exhibit piezoelectric proper-ties.The application of a sufficiently high DC field(called poling process) will orient the domains in the field direction and lead to a rem-anent polarization of the material.

PZT8 and PZT4 are the common “ hard” piezoceramic materials used in power ultrasonic transducers (e.g., welding, cutting, sonar, etc.).

PZT8 is perceived as the better choice for resonant devices, primarily due to its higher mechanical quality factor Qm. PZT8 is also considered a “ harder” material compared to PZT4, since it has better stability at higher preloads and drive levels.

Many transducer designers never consider PZT4 for their applications, even though it has clear advantages such as higher output (i.e., higher d33).

Even the perceived advantage of PZT8 regarding Qm may not be significant for most Langevin, bolted stack type transducers if the mechanical joint losses dominate.

This research is a case study on the performance of identical ultrasonic transducers used for semiconductor wire bonding, assembled with either PZT8 or PZT4 materials.

The main purpose of the study is to establish rule-of-thumb transducer design guidelines for the selection of PZT8 versus PZT4 materials. Several metrics are investigated such as impedance, frequency, capacitance, dielectric loss, Qm, heating, displacement gain, and electro-mechanical coupling factor.

The experimental and theoretical research methods include Bode plots, thermal IR camera imaging, scanning laser vibrometry and coupled-field finite element analysis.