



HPZ™ Piezoelectric Ceramic Datasheet

Supplier: Ionix Advanced Technologies

Material: HPZ580

Dielectric Properties			
Property	Symbol	Units	20 °C
Relative Permittivity	ϵ_r	-	670
Loss	$\tan\delta$	-	0.016
Curie Temperature	TC	°C	680

Table 1 – Dielectric Properties of HPZ580

Physical Properties			
Property	Symbol	Units	20 °C
Density	ρ	kg/m ³	7700
Compliance	s_{11}^E	m ² /N	1.24E ⁻¹¹
	s_{33}^E	m ² /N	1.32E ⁻¹¹
Acoustic Impedance	Z	MRayl	23.4
Speed of Sound	c	m/s	3000
Thermal Expansion Coefficient	TCE	K ⁻¹	8E ⁻⁶

Table 2 – Physical Properties of HPZ580

Electromechanical Properties			
Property	Symbol	Units	20 °C
<i>Coupling coefficients:</i>			
Planar	k_p	-	0.22
Length thickness extensional	k_{31}	-	0.20
Length extensional	k_{33}	-	0.37
Thickness extensional	k_t	-	0.34
<i>Charge coefficients:</i>			
Charge coefficients	d_{33}	pC/N	100
	d_{31}	pC/N	-40
<i>Voltage coefficients:</i>			
Voltage coefficients	g_{33}	Vm/N	0.017
	g_{31}	Vm/N	-0.007
<i>Frequency constants:</i>			
Frequency constants	N_p	m/s	2250
	N_1	m/s	1600
	N_3	m/s	1600
	N_t	m/s	1800

Table 3 – Electromechanical Properties of HPZ580

- Data presented was collected according to BS EN 50324 using the geometries and dimensions dictated by the standard.
- The values listed above are typical values for reference purposes only and cannot be applied to all geometries and dimensions.
- All data collected was determined after aging the parts at 580 °C for 16hrs after poling