

PROPERTIES OF PIEZOCERAMIC MATERIAL PZS- 80

Property	Symbol & Unit	Value
<i>DIELECTRICAL DATA</i>		
Permittivity	$\epsilon_{33}^T / \epsilon_0$	1050
Dielectric Loss Factor	$\text{tg}\delta [10^{-4}]$	20
Dielectric Loss Factor (at 400 V/m)	$\text{tg}\delta(4) [10^{-4}]$	100
<i>ELECTROMECHANICAL DATA</i>		
Coupling Factor	K_p	0.53
Coupling Factor	K_{31}	0.30
Coupling Factor	K_{33}	0.65
Piezoelectric Charge Constant	$-d_{31} [10^{-12} \text{ C/N}]$	95
Piezoelectric Charge Constant	$d_{33} [10^{-12} \text{ C/N}]$	250
Piezoelectric Voltage Constant	$-g_{31} [10^3 \text{ Vm/N}]$	10.7
Piezoelectric Voltage Constant	$g_{33} [10^3 \text{ Vm/N}]$	25.4
<i>MECHANICAL DATA</i>		
Elastic Compliance	$s_{11}^E [10^{-12} \text{ m}^2/\text{N}]$	11.5
Elastic Compliance	$s_{33}^E [10^{-12} \text{ m}^2/\text{N}]$	13.5
Radial Frequency Constant	$N_p^E [\text{m/s}]$	2300
Thickness Frequency Constant	$N_t^D [\text{m/s}]$	2080
Transverse Frequency Constant	$N_1^E [\text{m/s}]$	1690
Longitudinal Frequency Constant	$N_3^D [\text{m/s}]$	1510
Mechanical Quality Factor	Q_m	1000
Density	$\rho [10^3 \text{ kg/m}^3]$	7.60
<i>THERMAL DATA</i>		
Curie Temperature	$T_c [^\circ\text{C}]$	315