

Properties of TRS Soft Piezoelectrics

Dielectric & Elastic Properties $\pm 20\%$; Piezoelectric Properties $\pm 10\%$

Property	TRS610
K_{33}^T	3420
K_{33}^s	1410
K_{11}^T	3515
K_{33}^s	1695
Loss	0.021
T _c (°C)	190
Density (g/cm ³)	7.65
P _{saturation} (μC/cm ²)	33
E _{coercive} (kV/cm)	7.5
Grain Size (μm)	< 1
Q _m	51
d ₃₃ (pC/N)	565
d ₃₃ from Meter	
Long Rods	630
Thin Plates	675
d ₃₁ (pC/N)	-255
d ₁₅ (pC/N)	860
g ₃₃ (mm-V/N)	18.7
g ₁₃ (mm-V/N)	-8.5
g ₁₅ (mm-V/N)	29
k ₃₃	0.74
k ₃₁	0.39
k ₁₅	0.72
k _p	0.64
k _t	0.54
N ₃₃ (Hz-m)	1355
N ₃₁ (Hz-m)	1510
N _p (Hz-m)	1950
N _t (Hz-m)	1905

Elastic Property	TRS610
s_{11}^E (m2/N)	1.46e-11
s_{33}^E (m2/N)	1.94e-11
s_{12}^E (m2/N)	-0.41e-11
s_{13}^E (m2/N)	-0.72e-11
s_{55}^E (m2/N)	4.86e-11
s_{66}^E (m2/N)	3.74e-11
σ_{12}^E	0.28
σ_{13}^E	0.37
Y_{11}^E (GPa)	69
Y_{33}^E (GPa)	52
s_{11}^D (m2/N)	1.24e-11
s_{33}^D (m2/N)	0.88e-11
s_{12}^D (m2/N)	-0.63e-11
s_{13}^D (m2/N)	-0.26e-11
s_{55}^D (m2/N)	2.34e-11
s_{66}^D (m2/N)	3.74e-11
c_{11}^E (GPa)	126
c_{33}^E (GPa)	113
c_{12}^E (GPa)	72
c_{13}^E (GPa)	74
c_{55}^E (GPa)	21
c_{66}^E (GPa)	27
c_{11}^D (GPa)	136
c_{33}^D (GPa)	151
c_{12}^D (GPa)	82
c_{13}^D (GPa)	64
c_{55}^D (GPa)	43
c_{66}^D (GPa)	27