

MEASURED AND DERIVED ELASTIC COMPLIANCE CONSTANTS,  $s_{ij}$  ( $10^{-12}$  m<sup>2</sup>/N), AND ELASTIC STIFFNESS CONSTANTS,  $c_{ij}$  ( $10^{10}$  N/m<sup>2</sup>), FOR TRS X2B

Material	$s_{11}^E$	$s_{12}^E$	$s_{13}^E$	$s_{33}^E$	$s_{44}^E$	$s_{66}^E$	$s_{11}^D$	$s_{12}^D$	$s_{13}^D$	$s_{33}^D$	$s_{44}^D$	$s_{66}^D$
TRS X2B	52.1	-24.6	-26.4	59.9	16.0	28.3	41.8	-34.8	-3.9	10.3	14.0	28.3

  

Material	$c_{11}^E$	$c_{12}^E$	$c_{13}^E$	$c_{33}^E$	$c_{44}^E$	$c_{66}^E$	$c_{11}^D$	$c_{12}^D$	$c_{13}^D$	$c_{33}^D$	$c_{44}^D$	$c_{66}^D$
TRS X2B	12.4	11.1	10.4	10.8	6.3	3.5	12.6	11.3	9.3	16.8	7.1	3.5

TABLE II. Piezoelectric Coefficients,  $d_{ij}$  (pC/N),  $e_{ij}$  (C/m<sup>2</sup>),  $g_{ij}$  ( $10^{-3}$  Vm/N),  $h_{ij}$  ( $10^8$  V/m), and Electromechanical Coupling Factors,  $k_{ij}$ , For TRS X2B

Material	$d_{33}$	$d_{31}$	$d_{15}$	$e_{33}$	$e_{31}$	$e_{15}$
TRS X2B	1540	-699	164	22.3	-3.9	10.3

  

Material	$g_{33}$	$g_{31}$	$g_{15}$	$h_{33}$	$h_{31}$	$h_{15}$
TRS X2B	32.2	-14.6	11.9	27.7	-4.8	8.7

  

Material	$k_{33}$	$k_{31}$	$k_{15}$	$k_t$	$k_{31}$ (45°C)
TRS X2B	0.91	0.44	0.35	0.60	0.81

Dielectric Constants,  $\epsilon_{ij}$  ( $\epsilon_0$ ), and Dielectric Impermeability Constants,  $\beta$  ( $10^{-4}/\epsilon_0$ ), For TRS X2B

Material	$\epsilon_{33}^T$	$\epsilon_{11}^T$	$\epsilon_{33}^S$	$\epsilon_{11}^S$	$\beta_{33}^T$	$\beta_{11}^T$	$\beta_{33}^S$	$\beta_{11}^S$
TRS X2B	5400	1560	910	1340	1.85	6.41	10.99	7.46

\*  $E_c$ : 1.8-3kv/cm,  $Trt$ : 80-100°C