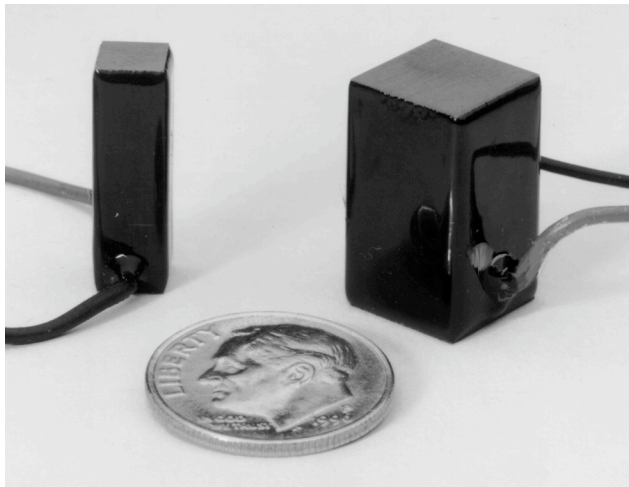


LOW VOLTAGE PIEZOELECTRIC STACKS



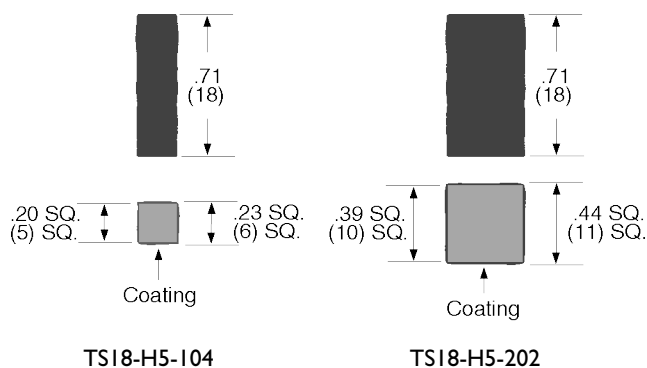
DESCRIPTION

A low voltage piezoelectric stack is a monolithic ceramic construction of many thin piezoceramic layers which are connected in parallel electrically. The principal characteristics of the stack are: a high energy conversion efficiency, low voltage operation, large force, low motion, fast response, and no EMI.

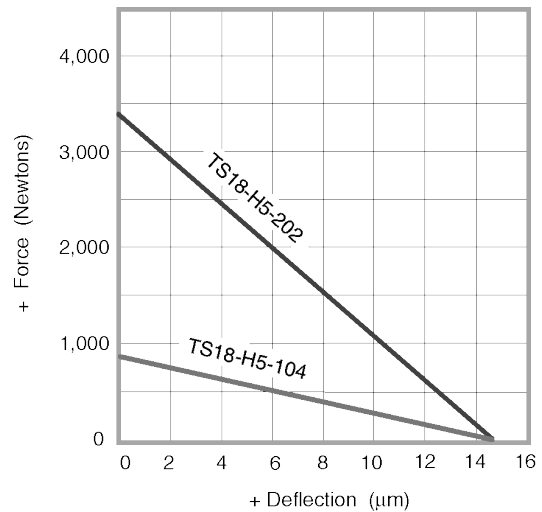
Motion may be increased, at the expense of force, by mechanical amplification. The stack offers a high energy density in a small package. Due to its superior compressive strength, it provides a high load bearing capability. However, it is relatively weak in tension.

Generally, excitation should be applied only in the direction of polarization.

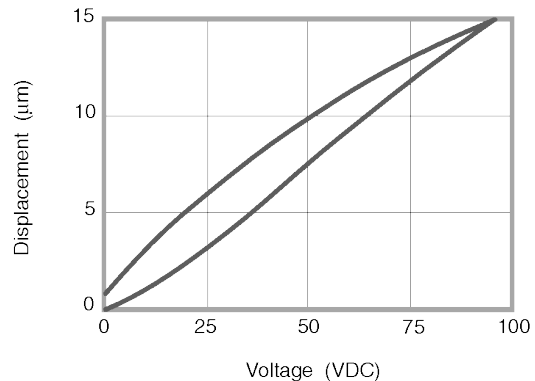
Hysteresis is typically about 15% in static applications.



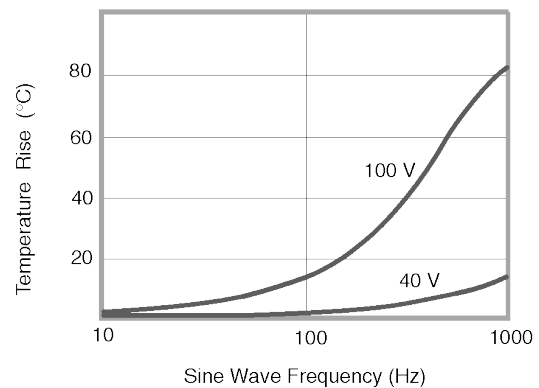
STACK PERFORMANCE



TS18-H5-104 & TS18-H5-202



TS18-H5-104



| ORDERING INFORMATION | PART NO. | 1 pc. | 5 pc. | 25 pc. | 100 pc. |
|---|-------------|-------|-------|--------|---------|
| Low Voltage Piezoelectric Stack (small) | TS18-H5-104 | \$375 | \$325 | \$275 | \$220 |
| Low Voltage Piezoelectric Stack (large) | TS18-H5-202 | \$549 | \$450 | \$385 | \$300 |



SPECIFICATIONS

PIEZOELECTRIC STACKS

| | | TS18-H5-104 | TS18-H5-202 |
|---------------------------------|-------------------|---------------------------------------|------------------------|
| MECHANICAL | | | |
| Dimensions (L x W x H) | Inches | 0.2 x 0.2 x 0.72 | 0.4 x 0.4 x 0.72 |
| | mm | 5 x 5 x 18 | 10 x 10 x 18 |
| Compressive Strength | N/m ² | 8.8 x 10 ⁸ | 8.8 x 10 ⁸ |
| Tensile Strength | N/m ² | 4.9 x 10 ⁶ | 4.9 x 10 ⁶ |
| Young's Modulus | N/m ² | 4.4 x 10 ¹⁰ | 4.4 x 10 ¹⁰ |
| Poisson Ratio | | 0.34 | 0.34 |
| Density | Kg/m ³ | 7,900 | 7,900 |
| Weight | grams | 4.5 | 16. |
| Wires | | .002 x 50 Stranded, Red wire positive | |
| ELECTRICAL | | | |
| Rated Voltage (Positive Only) | | +100VDC | +100VDC |
| Capacitance | nF | 1600 | 6,500 |
| PERFORMANCE (@ =100 VDC) | | | |
| Free Deflection | µm | +14.5 | +14.5 |
| Blocked Force | N | 840 | 3,388 |
| Resonant Frequency | Hz | 74,000 | 69,000 |
| Stiffness | N/m | 5.8 x 10 ⁷ | 2.3 x 10 ⁸ |
| Response Time | µs | 50 | 50 |
| ENVIRONMENTAL | | | |
| Thermal Operating Range | ° C | -20° to +80° | |
| Thermal Storage Range | ° C | -30° to +85° | |
| Humidity | % | < 50% | |

ROHS: Compliant. Piezo exempt.