

### LOW VOLTAGE PIEZOELECTRIC STACKS



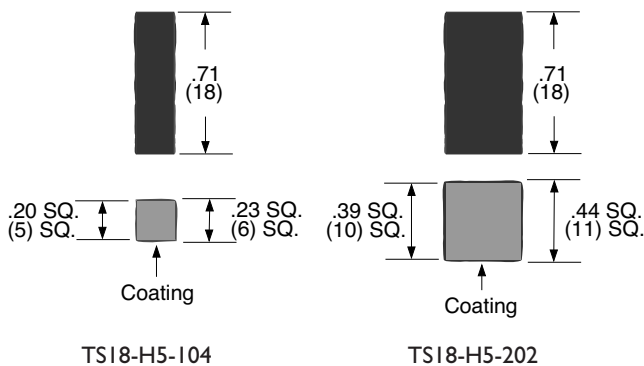
#### DESCRIPTION

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.

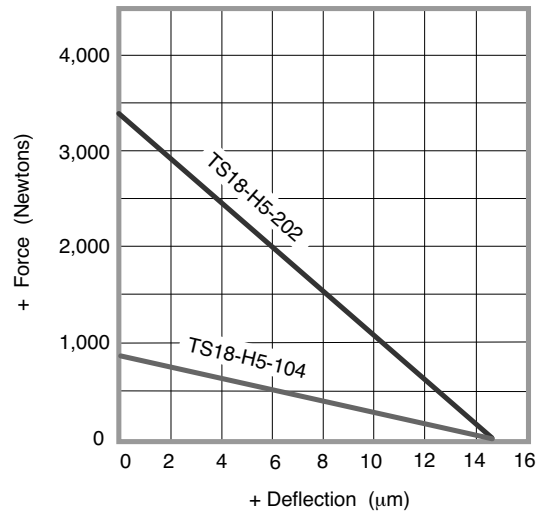
Motion may be increased, at the expense of force, by mechanical amplification. The stack offers a high energy density in a small package. Due to its superior compressive strength, it provides a high load bearing capability. However, it is relatively weak in tension.

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

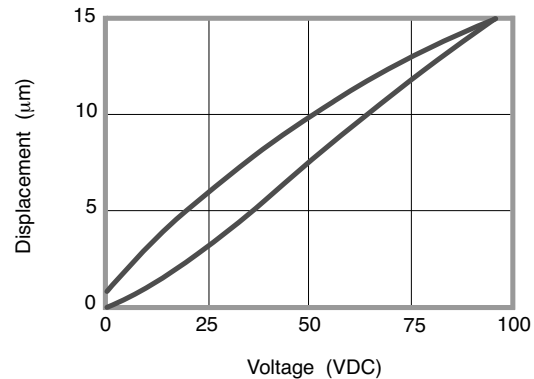
Hysteresis is typically about 15% in static applications.



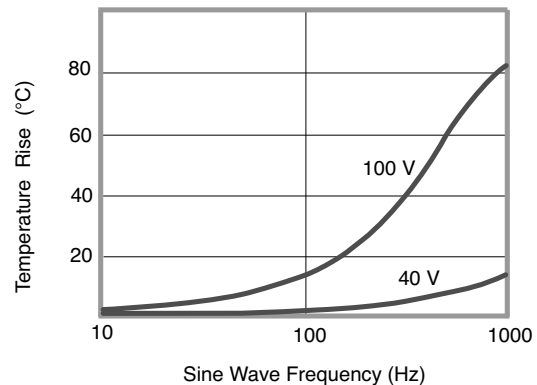
#### STACK PERFORMANCE



TS18-H5-104 & TS18-H5-202



TS18-H5-104



#### ORDERING INFORMATION

Low Voltage Piezoelectric Stack (small)  
Low Voltage Piezoelectric Stack (large)

#### PART NO.

TS18-H5-104  
TS18-H5-202

#### 1 pc.

\$350  
\$499

#### 5 pc.

\$300  
\$425

#### 25 pc.

\$250  
\$350

#### 100 pc.

\$200  
\$275



**SPECIFICATIONS**

**PIEZOELECTRIC STACKS**

		<b>TS18-H5-104</b>	<b>TS18-H5-202</b>
<b>MECHANICAL</b>			
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 <sup>2</sup>	8.8 x 10 <sup>8</sup>	8.8 x 10 <sup>8</sup>
Tensile Strength	N/m <sup>2</sup>	4.9 x 10 <sup>6</sup>	4.9 x 10 <sup>6</sup>
Young's Modulus	N/m <sup>2</sup>	4.4 x 10 <sup>10</sup>	4.4 x 10 <sup>10</sup>
Poisson Ratio		0.34	0.34
Density	Kg/m <sup>3</sup>	7,900	7,900
Weight	grams	4.5	16.
Wires		.002 x 50 Stranded, Red wire positive	
<b>ELECTRICAL</b>			
Rated Voltage (Positive Only)		+100 VDC	+100 VDC
Capacitance	nF	1600	6,500
<b>PERFORMANCE (@ =100 VDC)</b>			
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 <sup>7</sup>	2.3 x 10 <sup>8</sup>
Response Time	µs	50	50
<b>ENVIRONMENTAL</b>			
Thermal Operating Range	° C	-20° to +80°	
Thermal Storage Range	° C	-30° to +85°	
Humidity	%	< 50%	
<b>ROHS:</b>		<b>Compliant.</b>	