

**Features:**

- ◆ Beryllia base for good thermal conduction
- ◆ Regulation temperature from 40°C to 100°C
- ◆ Electrically isolated from the case
- ◆ Epoxy sealed
- ◆ Hermetically sealed and military screened units available

**Miniature Proportionally  
Controlled Heater**

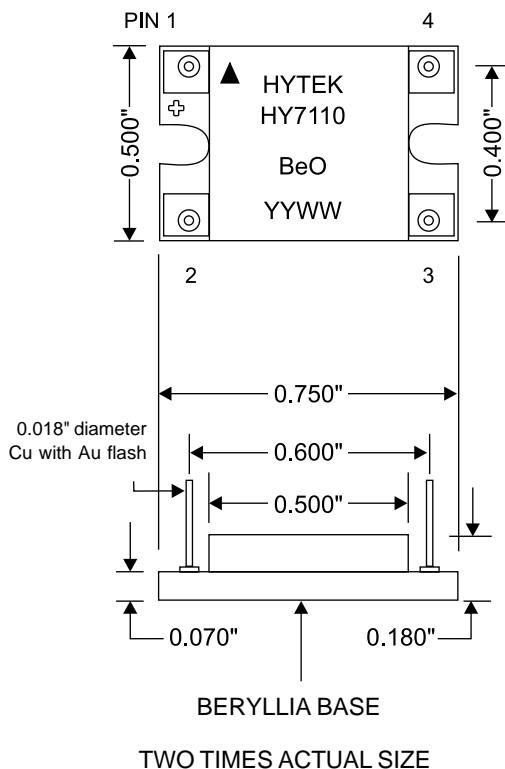
**Description:**

The HY7110 is a miniature proportionally controlled heater whose temperature can be programmed with a single external resistor. This device is ideally suited for regulating the temperature of sensitive electronic components such as microwave filters, optical waveguides, multiplexers and crystal oscillators. The HY7110 in a ceramic package can supply up to 28 Watts of power from an unregulated 28 Volt supply.

**Maximum ratings:**

| Rating                       | Symbol               | Value       | Unit  |
|------------------------------|----------------------|-------------|-------|
| Supply Voltage               | V <sub>DD</sub>      | 35          | Vdc   |
| Reverse Voltage              | V <sub>R</sub>       | -50         | Vdc   |
| Power Dissipation            | P <sub>D</sub>       | 35          | Watts |
| Operating Temperature (Case) | T <sub>MAX/MIN</sub> | 100/-20     | °C    |
| Storage Temperature Range    |                      | -65 to +150 | °C    |

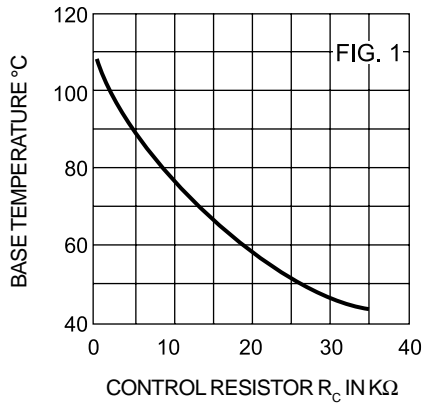
**OUTLINE DIMENSIONS**



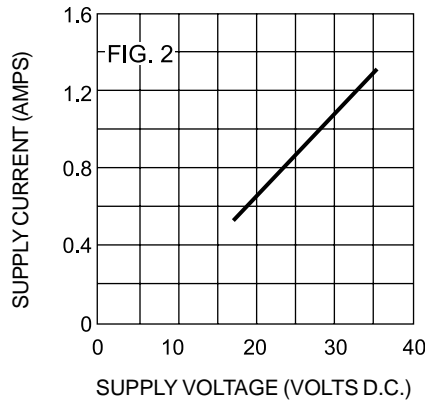
**Operating characteristics:**

| Characteristic  | Symbol           | Min   | Max | Unit  |
|---|------------------|-------|-----|-------|
| Supply Voltage (Pin 1 to Pin 2)                         | V <sub>DD</sub>  | +8    | +35 | Vdc   |
| Steady State Supply Current @ V <sub>DD</sub> = +35 Vdc | I <sub>s</sub>   | 0.015 | 1.0 | Adc   |
| Temperature variation over operating voltage            | ΔT <sub>v</sub>  |       | 2   | °C    |
| Temperature variation with load                         | ΔT <sub>L</sub>  |       | 10  | °C    |
| Control Temperature Range                               | T <sub>c</sub>   | 50    | 100 | °C    |
| Control Resistor Value Pin 3 to Pin 4 (See Figure 1)    | R <sub>c</sub>   | 0     | 35K | Ω     |
| Maximum Control Temperature when R <sub>c</sub> = 0Ω    | T <sub>MAX</sub> |       | 110 | °C    |
| Turn on power at start-up @V <sub>DD</sub> = +28 Volts  | P <sub>D</sub>   | 25    | 28  | Watts |

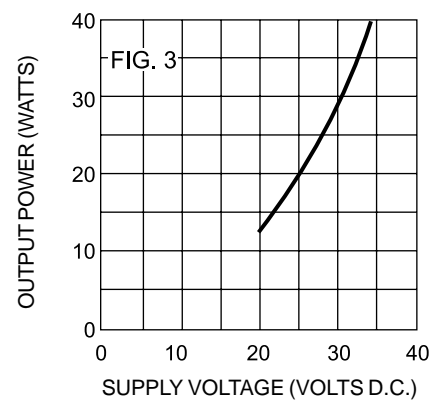
TYPICAL  
BASE TEMPERATURE  
VS  
CONTROL RESISTOR



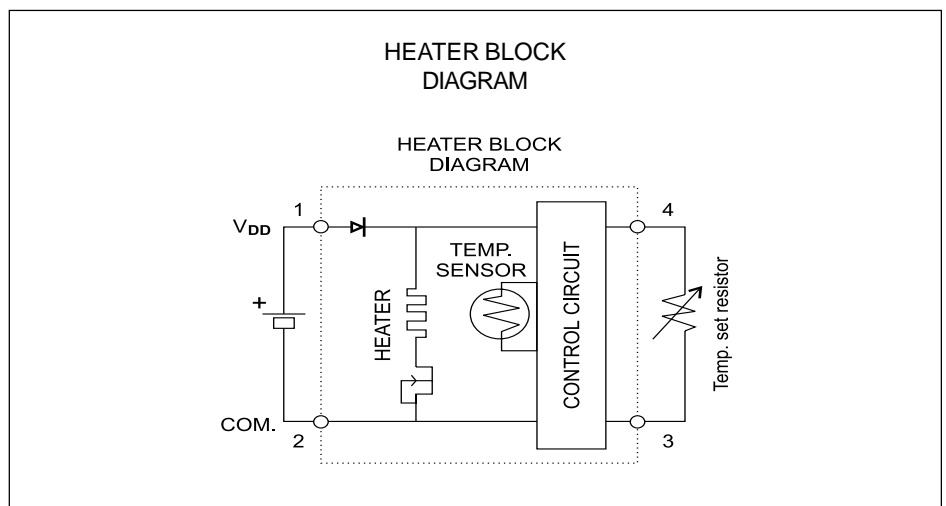
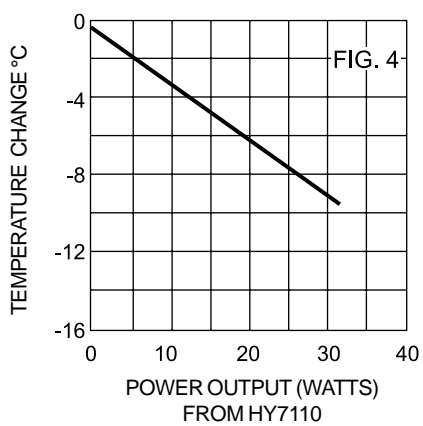
MAX START-UP CURRENT  
VS  
SUPPLY VOLTAGE



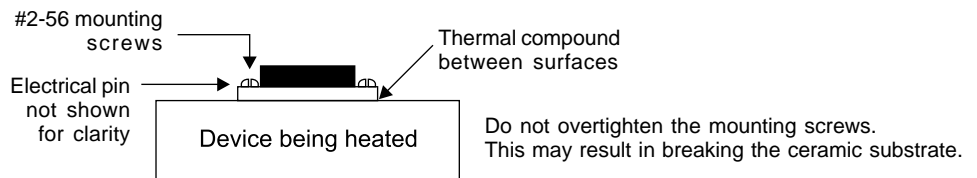
MAX THERMAL POWER  
AVAILABLE  
VS  
SUPPLY VOLTAGE



TYPICAL BASE TEMPERATURE  
LOSS WITH  
POWER DISSIPATION



**MOUNTING THE HY7110 HEATER**



**NOTES:**

1. Optimum heat transfer between the HY7110 and the device being heated occurs when a thermal compound, such as Dow Corning 340, is applied to the mounting surface of the heater.
2. Operation is possible from 100 °C to 120°C, however electrical performance is not guaranteed.
3. Special environmental and electrical screening is available on request.
4. Special custom engineered micro-heater available on request.