



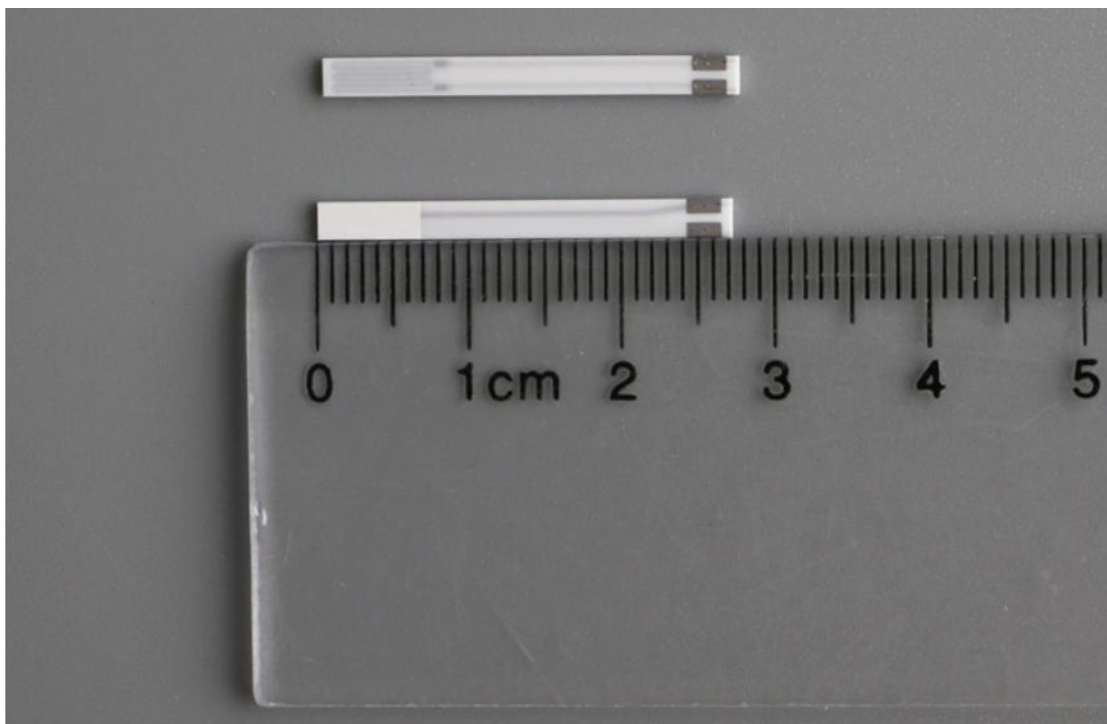
Plate-Type Heating Core For Automotive O Air-fuel Oxygen Sensor

High quality Plate-Type Heating Core For Automotive O Air-fuel Oxygen Sensor is offered by China manufacturer GREENWAY.

Model:MX

Plate-Type Heating Core for Automotive o Air-fuel oxygen sensor

Plate-Type Heating Core for Automotive o Air-fuel oxygen sensor are produced by implementing ceramic lamination processes. Due to the compactness, high power and rapid heating speed .Ceramic Heater can provide higher reliability than ever before. Mainly applications include use as innovative types of heaters in the automotive, medical and semiconductor industries.



Process of Plate-Type Heating Core for Automotive o Air-fuel oxygen sensor

- 1.Product matrix material use white alumina ceramic
 - a) Density \geq 3.94 g/cm³;

b) Strength > 500 MPa.

2. Electrolyte material use YSZ electrolyte ceramic

a) Density ≥ 5.75 g/cm³;

b) Strength > 400 MPa;

c) Aging test: 230°C × 50 h.

3. Electrodes, heaters, leads, pads all use Pt materials (Choose different Pt content material according to the function)

Engine Test

After the assembly of the product, then test the leak rate under the temperature of 25°C ± 10°C and the air pressure of 3.4 bar, and the engine bench test is carried out under the condition that the leakage rate is less than 0.2 cm³ / min.

Engine bench test parameters

| Engine Bench Test | New Oxygen Sensor | |
|--|-------------------|----------------|
| Exhausting gas Temperature | 350°C | 800°C |
| λ=0.95 Lambda = 0.95 , sensor voltage | 800 mV ± 65 mV | 700 mV ± 65 mV |
| λ=1.05 Lambda = 1.05 , sensor voltage | 50 mV ± 30 mV | 50 mV ± 30 mV |
| Response Time 600 mV ~ 300 mV | < 150 ms | < 150 ms |
| Response Time 300 mV ~ 600 mV | < 100 ms | < 60 ms |
| Internal Impedance | ≤ 500Ω | |
| Light-off Time | ≤ 12 s | |
| Heater Current | 0.5 A ± 0.1 A | |

Electrical Properties

Heater resistance at room temperature: 17Ω ± 3.0.

Heater rated voltage: 12V ± 14 V.

The heater steady-state current when loaded a 13.5 V voltage: 0.5 A ± 0.1 A.

Insulation resistance between Heater Pad and Electrode Pad: > 100 MΩ.

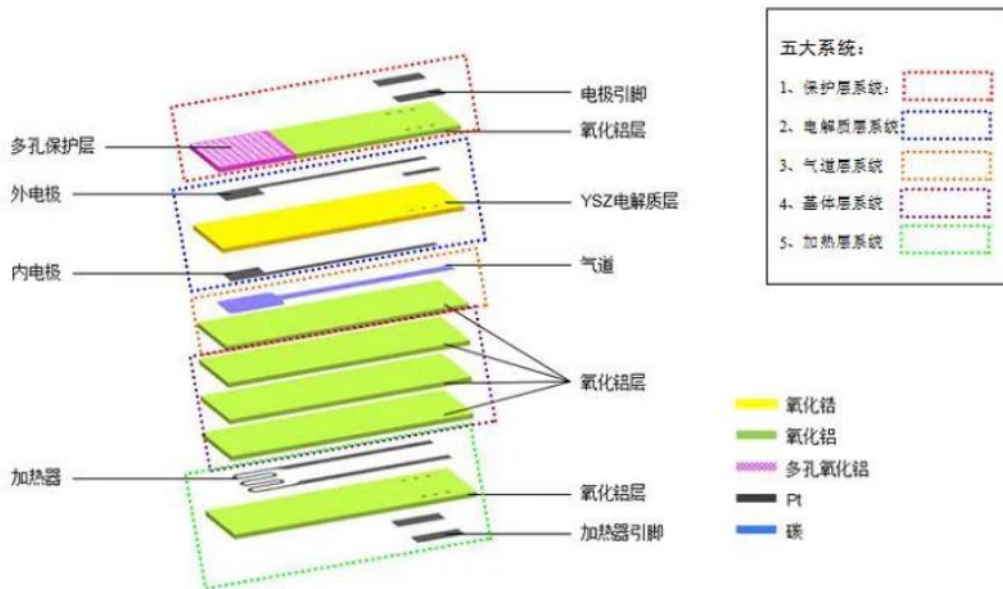
Durable Pressure Resistance

Heater 1100°C thermal cycling: 20 V, 3 min on, 1 min off, > 4500 times.

Heater Pressure: 32 V, 500 ms, 10 time) 。

Plate-Type Heating Core For Automotive O Air-fuel Oxygen Sensor Structure

The ceramic core B structure as show in Figure 1, the ceramic core includes five layers, and they are protective layer, electrolyte layer, air layer, base layer and heating layer. The protective layer system includes electrode pad, porous protective layer and aluminum oxide layer. The electrolyte layer system includes inner / outer electrode, YSZ electrolyte layer. And the airway layer consists of airway, alumina layer. The base layer has a number of alumina layers (Can adjust based on customer requirements on the product thickness). The heater layer system includes heater, heater pad and oxidation Aluminum layer.



Product Specification

| Item | Environmental Requirements | Standard Values | Test Method |
|-----------------|----------------------------|-----------------|---|
| Activation Time | Temperature: 23°C±3°C | ≤5 s | The voltage of 450 mV was loaded to both ends of the electrode through a 1 MΩresistor. And record the output voltage when 13.5 V was loaded. Test the time when the output voltage dropped to 300 mV by the acquisition card. |

| Item | Environmental Requirements | Standard Values | Test Method |
|------------------------|----------------------------|---|---|
| Electrical Signal Test | No wind environment | Internal and external Electrode Current > 100μA | Under air atmosphere, a DC source was used to charge 13.5 V voltage to the heater, and 450 mV voltage was loaded between the internal and external electrodes (the internal electrode was connected to the positive electrode), and observe the current value |

| | | | |
|-----------------------|----------------------|---|---|
| | | | between the internal and external electrodes. |
| Maximum Temperature | No wind environment | 770°C±50°C | The maximum temperature of the heater at steady state was measured by a thermal imager. |
| 350°C Heating up Time | Temperature:23°C±3°C | ≤7 s | Test the time needed for the heater heating from room temperature to 350°C by thermal imager. |
| Cracking Test | None | No Cracks | Test the porcelain core crack situation through the magenta. |
| Exterior | None | The surface without cracks, no bubbles, no cracks and other defects | Visual inspection |
| Dimensions | None | (58.6 mm±0.5 mm) × (4.4 mm±0.1 mm) × (1.25 mm±0.1 mm) | Caliper measurement |

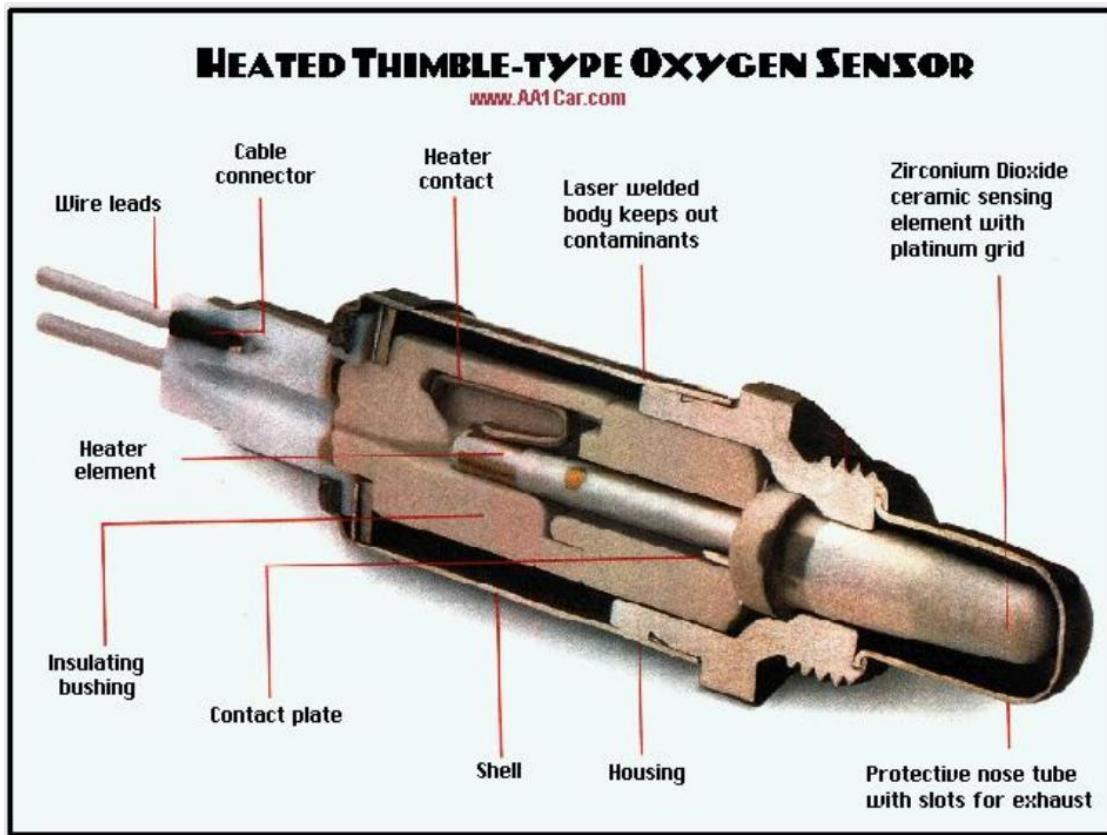
Recommended Use Conditions

Conventional operating temperature range: 350°C~850°C

Maximum continuous operating temperature (250 h) : 1000°C

Should be used in accordance with the provisions of the GB 17930 gasoline and meet the GB 18351 requirements of the vehicle ethanol gasoline.

Plate-Type Heating Core For Automotive O₂ Air-fuel Oxygen Sensor Application



Packing and Delivery

The suitable packing should be taken to avoid the breakage and contamination during the shipment.



Fast International Express Delivery such as DHL,TNT,FEDEX, UPS ect.



