

# SSTL

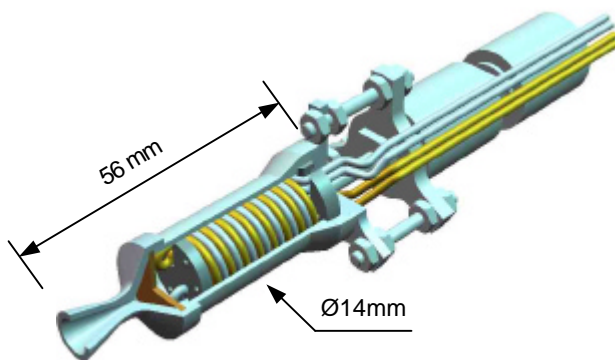
## Low Power Resistojet



The SSTL Low Power Resistojet is designed for low-cost small satellite applications such as orbit correction and station keeping.

The SSTL low power resistojet is a thruster designed to produce maximum performance for minimum cost. It can be used to augment the specific impulse performance achieved from a cold gas or a liquefied gas propulsion system. The design is very flexible and the parameters specified can be varied over a large range to customise the thruster to any mission requirements.

The achieved thruster specific impulse will vary according to propellant, power input, firing duration and thrust levels. However, firing with nitrogen at 296° C (13.7 W input power) at a thrust of 16.5 mN the Isp was measured at 99.4 sec. This represents an increase of 57% over the Isp measured at ambient temperature.



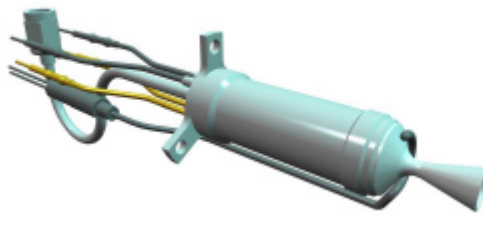
The thruster uses commercial parts and low cost construction techniques to give low cost hardware.

Redundant heater coils are wound inside the thrust chamber. This allows the propellant to be heated up to 500° C. The flow control valves are supplied by

Polyflex Aerospace and are of a flight proven design. Flight heritage on SNAP-1 and will be flown on ALSAT-1, UK-DMC and CRYOSAT.

A 15 W version of the thruster is being used on ALSAT-1 and UK-DMC spacecraft. Launch date - late 2002.

The flow control valves are located remotely inside the spacecraft.



*Qualification Thruster - Disaster Monitoring Constellation*

Surrey Satellite Technology Ltd (SSTL) is a leading manufacturer of small satellites and sub-systems. SSTL has built and launched 20 satellites from UoSAT-1 in 1980 to PICOSAT in 2001.

Polyflex Aerospace Ltd (PAL) is a leading manufacturer of valves and components for spacecraft propulsion systems. PAL have supplied to scientific and commercial platforms from SNAP-1 to EUROSTAR 3000.

### Applications

- Enhancing performance of cold gas propulsion systems

### Specifications

- Propellant: Nitrogen, Xenon, butane & most gases
- Thrust: up to 100 mN
- Feed pressure: up to 10 bar
- Operation temperature to 500°C
- K type thermocouple to monitor chamber temperature
- Remote, single or dual valve configurations

### Physical Characteristics

- Interface: 3 x Ø3 mm holes
- Mass: 150 g maximum

### Power Supply

- Heater power up to 50 W @ 28 V
- Operates from bus voltage ( no PPU required)

### Contact



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