

TH 338

TRIODE

The TH 338 is a forced-air cooled, ceramic/metal, high-gain triode of planar structure. It is especially designed for highly linear amplifiers operating up to 1000 MHz without grid current in TV translators amplifying combined sound and video carriers.



The anode can dissipate 1200 W.

GENERAL CHARACTERISTICS

Electrical

Type of cathode	Oxide-coated	
Heating	Indirect	
Heater voltage (Note 1)	6.3 V \pm 2 %	
Heater current, approximate	6	A
Minimum preheating time	3	mn
Interelectrode capacitances (Note 2) :		
— grid-anode	7.3	pF
— grid-cathode	16	pF
— cathode-anode	0.13	pF
Amplification factor, approximate	80	
Transconductance ($I_a = 250$ mA)	45	mA/V

Mechanical

Mounting position	Any
Anode cooling	By forced air
Minimum airflow	See curves page 3
Corresponding air pressure drop	See curves page 3
Maximum inlet-air temperature	45 °C
Maximum outlet-air temperature	100 °C
Maximum temperature of electrode terminals (Note 3)	250 °C
Net weight, approximate	1200 g
Dimensions	See the Outline Drawing

NOTES

- 1 — In high-frequency operation, the cathode is subjected to considerable back-bombardment, which raises its temperature. After the circuit has been adjusted for proper tube operation, the heater voltage must be reduced to prevent overheating of the cathode, which may shorten the tube life. For any special application, please consult THOMSON.
- 2 — Measurements are made in appropriate mounting with minimum parasitic capacitances.
- 3 — For maximum tube life, this temperature must not exceed 200 °C. The cooling airflow must be established before application of any electrode voltage.

This data sheet cannot be considered to be a contractual specification. The information given herein may be modified without notice due to product improvement or further development. Consult THOMSON TUBES ELECTRONIQUES before making use of this information for equipment design.

OPERATING CONDITIONS

Maximum Ratings

Anode voltage	2.5	kVdc
Grid bias voltage	-200	Vdc
Peak cathode current	2.5	A
Anode direct current	0.6	A
Anode power dissipation	1200	W
Frequency	1000	MHz

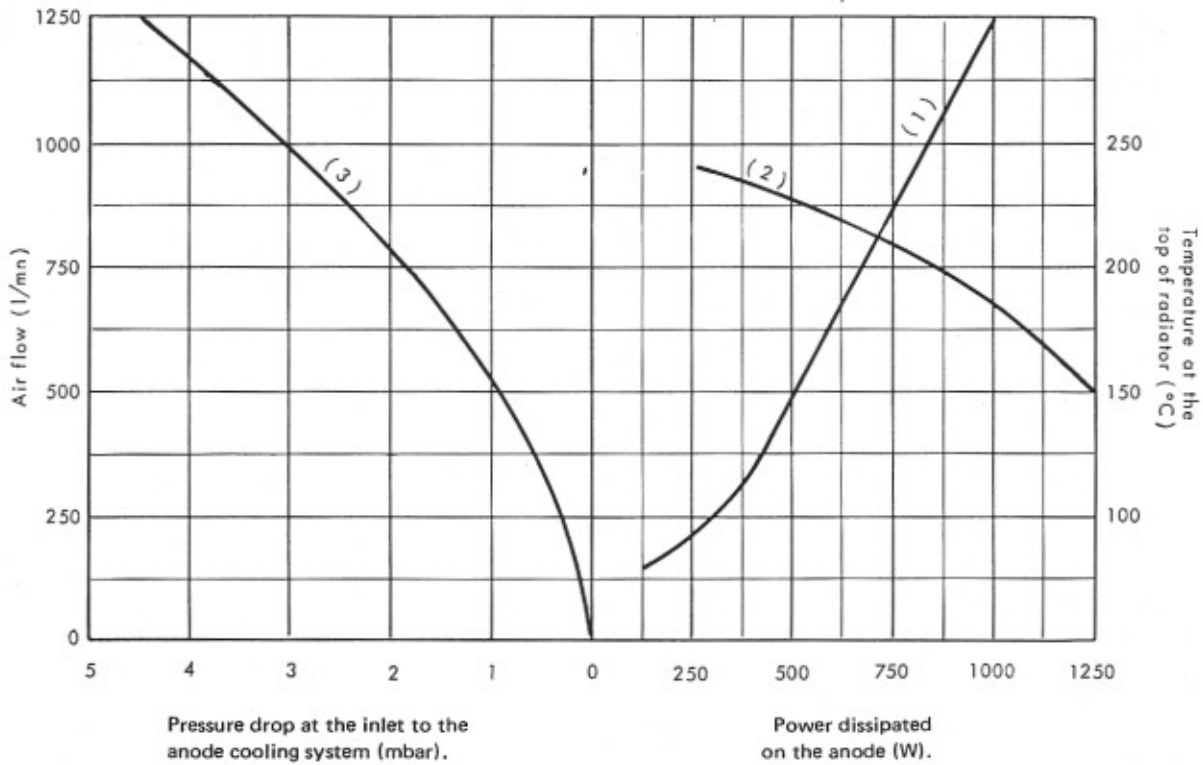
CLASS A - LINEAR AMPLIFIER FOR TELEVISION TRANSLATORS
 AMPLIFYING COMBINED VIDEO AND SOUND CARRIERS
 CCIR G STANDARD AT BLACK LEVEL

Typical Operation

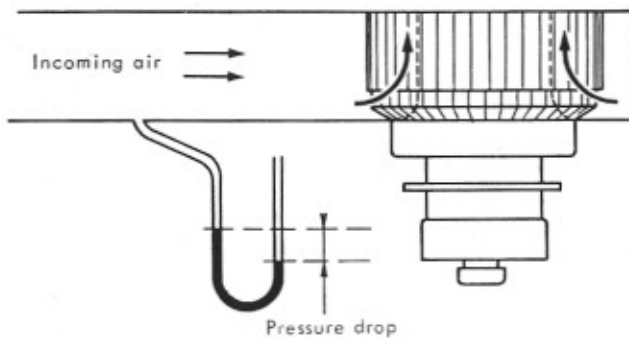
Frequency	780	MHz
Heater voltage	5.7	V
Anode voltage	2.4	kVdc
Anode direct current at zero signal	0.4	A
Anode direct current, at black level	0.51	A
Bandwidth (at - 1 dB)	10	MHz
Output power in the load (peak of sync.)	220	W
Gain	16	dB
Intermodulation products (1)	55	dB

- (1) Third-order IMD ratio measured using a three-tone test, with :
- a - a reference level at peak power,
 - b - a vision carrier 8 dB below the reference level,
 - c - a sound carrier 10 dB below the reference level,
 - d - a third signal 16 dB below the reference level,
 - e - 5.5 MHz difference between the vision and sound-carrier frequencies,
 - f - the frequency of the third signal varied over the full range between the vision and the sound carriers,
 - g - and a third-order IMD ratio at the input, measured under the same conditions, equal to or greater than 70 dB.

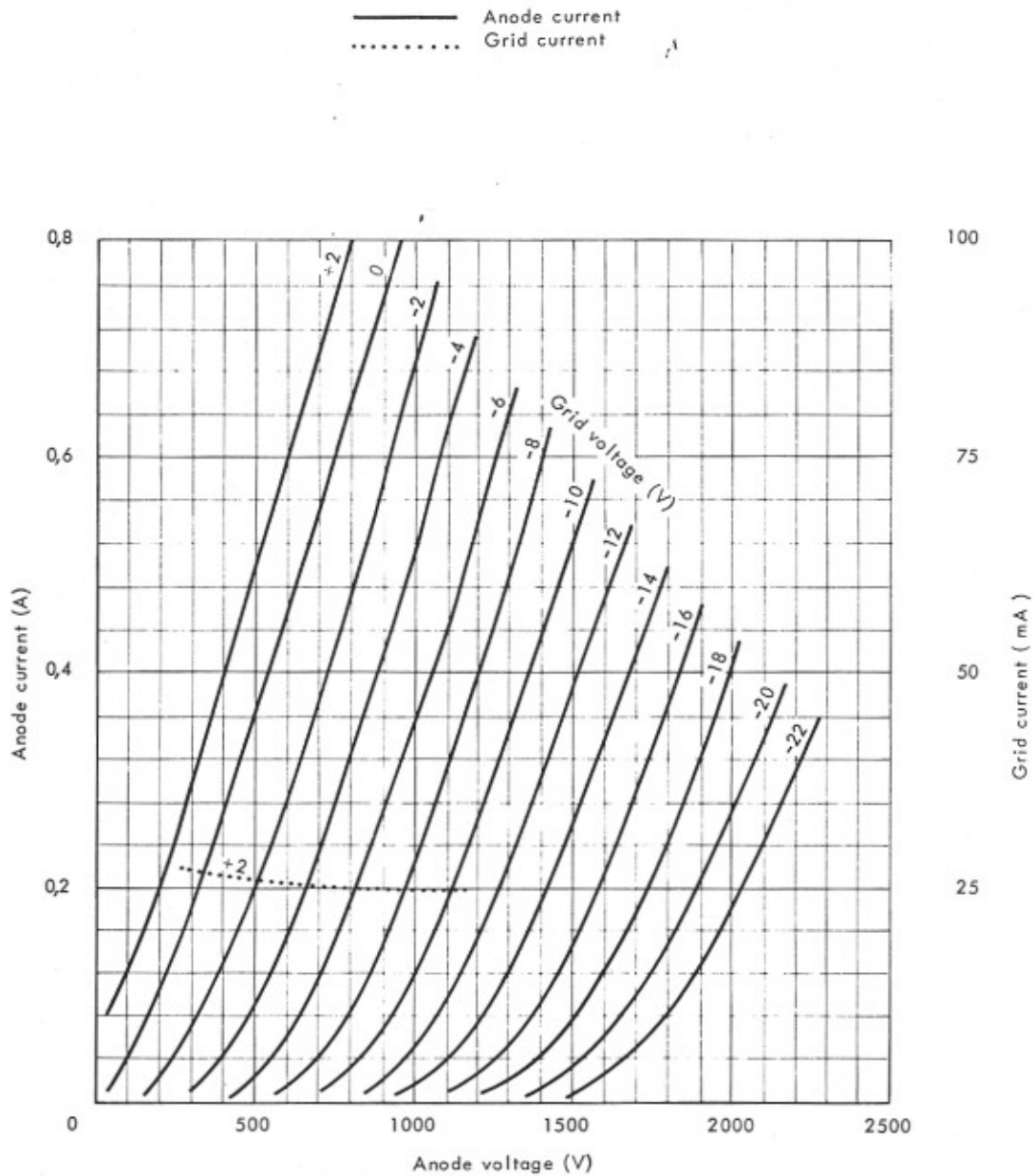
ANODE COOLING CHARACTERISTICS



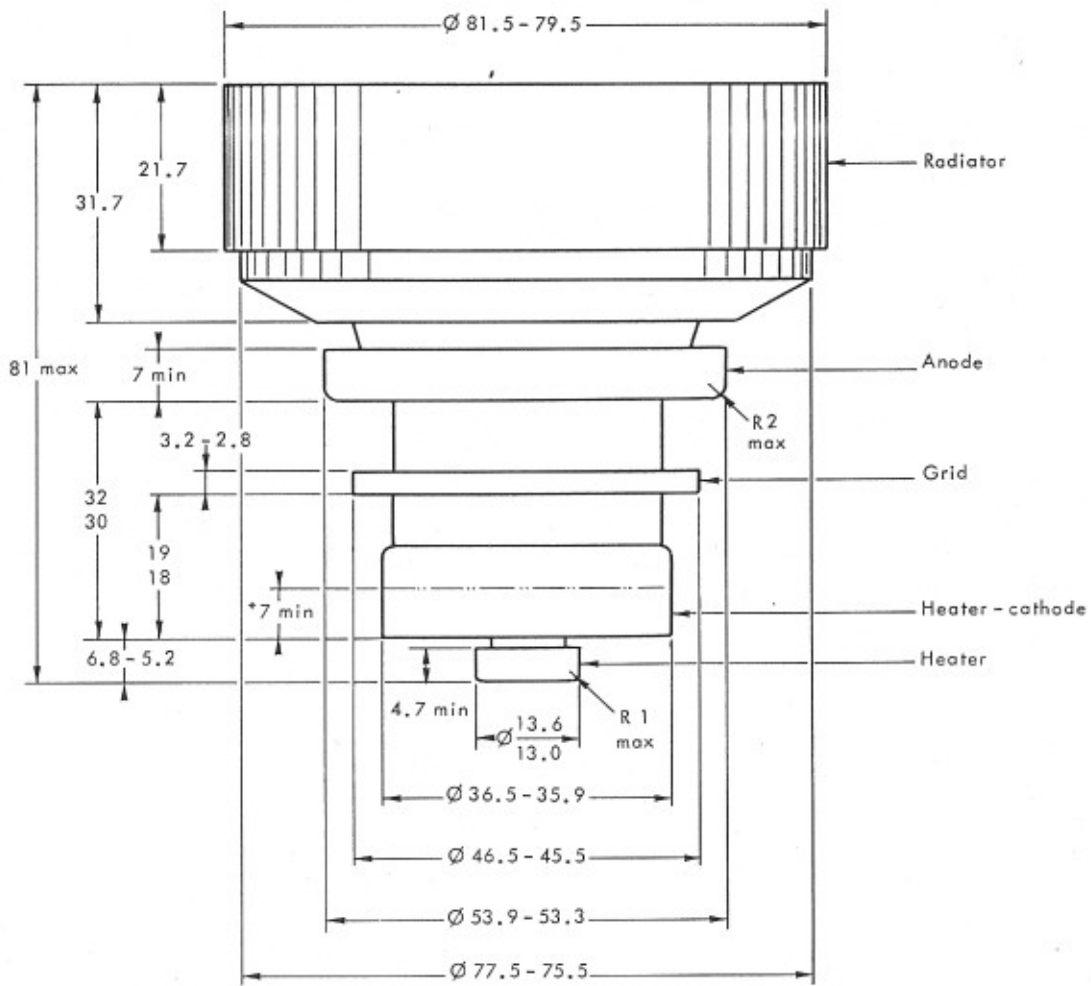
- (1) Air flow versus power dissipated on the anode.
- (2) Temperature measured at the top of the radiator versus anode dissipation.
- (3) Pressure drop at the inlet to the anode cooling system versus the air flow, the temperature of the inlet air being 25°C and the air pressure being 1 bar.



CURRENT CHARACTERISTICS



OUTLINE DRAWING



* cylindrical zone for connection

Dimensions in mm.

