



ELECTRONIC TUBE REFERENCE

F1091

Power - Triode electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Experimental very-high-power directly heated triode developed for hard-tube modulator service and demonstrated at more than 50 MW peak output.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	31 V / 975 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
MAXIMUM PLATE VOLTAGE	65000 V
MAXIMUM CATHODE CURRENT	1340 A
<i>Source is a technical news/test sheet rather than a full production datasheet; published test conditions are preserved. ITT F1091 experimental directly heated high-power modulator triode using a thoriated-tungsten mesh cathode. Documented tests at 65 kV / 900 A peak and 55 kV / 1340 A peak gave approximately 50.4 MW and 52 MW output pulses respectively. These currents and voltages are pulse test conditions, not unrestricted continuous cathode or anode limits. ITT also reported 390 kW plate dissipation and more than 90 MW peak pulse output in a separate 1968 announcement.</i>	

The ITT F1091 is a very-high-power directly heated triode developed for hard-tube modulator service and demonstrated at more than 50 MW peak output.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1962 ITT

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1962 ITT

Section 1 · Triode

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filament power	30 kW	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak power output condition 1	50.4 MW	Condition1
Peak power output condition 2	52 MW	Condition2
Plate supply voltage	65 kV	Condition1
Plate supply voltage	55 kV	Condition2
Output pulse voltage	56 kV	Condition1
Output pulse voltage	38.8 kV	Condition2
Peak plate current	900 A	Condition1
Peak plate current	1340 A	Condition2
Peak positive grid voltage	1400 V	Condition1
Peak positive grid voltage	1800 V	Condition2
Peak grid current	170 A	Condition1
Peak grid current	200 A	Condition2
Load resistance	62 ohm	Condition1
Load resistance	29 ohm	Condition2
Pulse duration	1000 us	—
Duty factor	0.01	—