



ELECTRONIC TUBE REFERENCE

EM1086

Specialized - Magnetron electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
MAGNETRON

Ruggedized ceramic-and-metal packaged voltage-tunable magnetron covering 940-1060 MHz and delivering at least 15 W into 50 ohms. Its electron-injection design and three-terminal output circuit support stable, controllable microwave oscillator operation.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	6.3 V / 1 A	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Magnetron	
MAXIMUM PLATE VOLTAGE	2500 V
<i>Promoted fields populated only where the published value maps directly to the schema; device-specific values retained as parameters.</i>	

The Eimac EM-1086 is a ruggedized, ceramic and metal packaged voltage- tunable magnetron capable of delivering a minimum output power of 15 watts into a 50 ohm termination over the frequency range of 940-1060 megacycles. Eimac's three terminal YVTM circuit has been used in this tube to give a more uniform output circuit with the added advantage of one-third more heat dissipating area extending out of the YTM envelope. The electron injection design incorporated in this magnetron minimizes

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1962 Eimac

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

1962 EIMAC

Section 1 · Magnetron

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The Eimac EM	1086	The Eimac EM-1086 is a ruggedized, ceramic and metal packaged voltage-
tunable magnetron capable of delivering a minimum output power of	15 W	tunable magnetron capable of delivering a minimum output power of 15 watts
into a [1]	50 MHz	into a 50 ohm termination over the frequency range of 940-1060 megacycles.
into a [2]	940 MHz	into a 50 ohm termination over the frequency range of 940-1060 megacycles.
into a [3]	-1060 MHz	into a 50 ohm termination over the frequency range of 940-1060 megacycles.
Warm-up Time	30 s	Warm-up Time - 30 seconds
Heater: Voltage (ACorDC; - - - . <« . <« =« <« =« <« =« =«	6.3 V	Heater: Voltage (ACorDC; - - - . <« . <« =« <« =« <« =« =« <« =« =« 6.3 volts
Current - - - - . . < . . . < [1]	4 A	Current - - - - . . < . . . < 4 - 4 e - 1.0 ampere
Current - - - - . . < . . . < [2]	4 A	Current - - - - . . < . . . < 4 - 4 e - 1.0 ampere
Current - - - - . . < . . . < [3]	1 A	Current - - - - . . < . . . < 4 - 4 e - 1.0 ampere
Minimum Output Power - e e e e e e e e e e	15 W	Minimum Output Power - e e e e e e e e e e . 15 watts
Frequency Range - < [1]	940 MHz	Frequency Range - < 940 to 1060 megacycles
Frequency Range - < [2]	1060 MHz	Frequency Range - < 940 to 1060 megacycles
Anode Voltage* - - . +	2500 V	Anode Voltage* - - . + ... 2500 volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Cathode Current e	35 mA	Cathode Current e 35 milliamperes
Injection Anode Voltage*	750 V	Injection Anode Voltage* - - - 750 volts
Injection Anode Current	1	Injection Anode Current - 1 milliampere
Frequency Range - - . - - < [1]	940 MHz	Frequency Range - - - - - < .. 940-1060 megacycles
Frequency Range - - . - - < [2]	-1060 MHz	Frequency Range - - - - - < .. 940-1060 megacycles
Anode Voltage* (Note [1])	1 V	Anode Voltage* (Note 1) - - « . - ... 1840-2075 volts
Anode Voltage* (Note [2])	1840 V	Anode Voltage* (Note 1) - - « . - ... 1840-2075 volts
Anode Voltage* (Note [3])	-2075 V	Anode Voltage* (Note 1) - - « . - ... 1840-2075 volts
Cathode Current - - . . . - . < =« =« =« . < <« [1]	21 mA	Cathode Current - - . . . - < =« =« =« . < <« 21 - 25 milliamperes
Cathode Current - - . . . - . < =« =« =« . < <« [2]	25 mA	Cathode Current - - . . . - < =« =« =« . < <« 21 - 25 milliamperes
Typical Power Output [1]	16 W	Typical Power Output - - - - - . 16-16 watts
Typical Power Output [2]	-16 W	Typical Power Output - - - - - . 16-16 watts
Anode FM Sensitivity - . . - . . . - . +	50	Anode FM Sensitivity - . . . - . + ... 50 Me/volt
Injection Anode Voltage	500 V	Injection Anode Voltage - - - - - 500 volts
Injection Anode Current	2 mA	Injection Anode Current - . - - - - 02 milliamperes
Heater Current {AC} « =«	800 mA	Heater Current {AC} « =« . . 0.8 amperes
Note	1	Note 1. The operating frequency is determined by the Anode Voltage.
Published value [1]	1086	1086 magnet temperature does not exceed 70°C.
Published value [2]	70	1086 magnet temperature does not exceed 70°C.
The heater voltage should be maintained within [1]	5 V	The heater voltage should be maintained within - 5% of the rated value of 6.3 volts if variations in per-

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The heater voltage should be maintained within [2]	6.3 V	The heater voltage should be maintained within - 5% of the rated value of 6.3 volts if variations in per-
Temperature Stability: The permanent magnet for the EM	1086	Temperature Stability: The permanent magnet for the EM-1086 has been temperature stabilized to minimize
operating frequency of [1]	1000 MHz	operating frequency of 1,000 megacycles, the temperature/frequency coefficient is typically 200 kilocycles
operating frequency of [2]	200 MHz	operating frequency of 1,000 megacycles, the temperature/frequency coefficient is typically 200 kilocycles
INJECTION ANODE VOLTAGE:=	380	INJECTION ANODE VOLTAGE:=380V .
power '	3	power '3