



ELECTRONIC TUBE REFERENCE

2450A

Rectifier - Half Wave electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
RECTIFIER

Directly heated Eimac high-vacuum power rectifier for demanding rectifier and voltage-multiplier service. Rated for approximately 30 kV peak inverse voltage and 1 A DC output where gas-filled rectifiers are unsuitable.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	4
NOMINAL HEATER	7.5 V / —	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Rectifier	
MAXIMUM PLATE DISSIPATION	450 W
PEAK INVERSE VOLTAGE	30000 V
NOMINAL OUTPUT CURRENT	1 A
PEAK FORWARD CURRENT	8 A
<i>Published maximum ratings and characteristics audited; remaining numeric data retained in parameter table.</i>	

The Eimac 2-450A is a high-vacuum diode rectifier for high-power rectifier and voltage-multiplier service where high PIV, frequency, temperature, or transient conditions make gas-filled rectifiers unsuitable.



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 · Rectifier

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filament Current	25 A–28 A	Published Min/Max

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Single-Phase Full-Wave DC Output Current	2 A	ChokeInputFilter; TwoTubes
Single-Phase Bridge DC Output Voltage	18600 V	ChokeInputFilter; FourTubes
Three-Phase Full-Wave DC Output Voltage	28000 V	ChokeInputFilter; SixTubes



SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1965 Eimac Tube Manual

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

1965 EIMAC TUBE MANUAL

Section 1 · Rectifier

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filament: Thoriated Tungsten Mf	7	Filament: Thoriated Tungsten Mf7t. Nom. Mcz#.
Voltage	7.5 V	Voltage ----- 7.5 volts
Current [1]	25 A	Current ----- 25.0 28.0 amperes

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Current [2]	28 A	Current ----- 25.0 28.0 amperes
Recommended plate connector ----- Eimac HR	8	Recommended plate connector ----- Eimac HR-8
Plate seal	225	Plate seal ----- 225°C
The temperature of the plate seal and envelope must not be allowed to exceed	225	The temperature of the plate seal and envelope must not be allowed to exceed 225°C and
Peak Inverse plate voltage	30000 V	Peak Inverse plate voltage ---- 30,000 MAX. VOLTS
Plate Dissipation	450 W	Plate Dissipation ----- 450 MAX. WATT`S
D-C plate current	1 mA	D-C plate current ----- 1 MAX. AMPERE
Peak plate current	8 mA	Peak plate current ----- 8 MAX. AMPERES
The maximum d-c current rating of the [1]	2 mA	The maximum d-c current rating of the 2-450A is 1.0 amperes when the load incorporates a
The maximum d-c current rating of the [2]	-450 mA	The maximum d-c current rating of the 2-450A is 1.0 amperes when the load incorporates a
The maximum d-c current rating of the [3]	1 mA	The maximum d-c current rating of the 2-450A is 1.0 amperes when the load incorporates a
The [1]	2 mA	The 2-2000A has a maximum d-c current rating of 750 milliamperes and
The [2]	-2000 mA	The 2-2000A has a maximum d-c current rating of 750 milliamperes and
The [3]	750 mA	The 2-2000A has a maximum d-c current rating of 750 milliamperes and
a maximum peak inverse voltage rating of	75 V	a maximum peak inverse voltage rating of 75.000 volts. Cooling is by forced
citor-input filter with [1]	26.5	citor-input filter with 26.500 volts single-phase supply. Four 2-2000A's in a
citor-input filter with [2]	2	citor-input filter with 26.500 volts single-phase supply. Four 2-2000A's in a
citor-input filter with [3]	-2000	citor-input filter with 26.500 volts single-phase supply. Four 2-2000A's in a
Current	25 A	Current----- 25.0 amperes
Maximum Temperature of plate seal	225	Maximum Temperature of plate seal - - 225OC
PEAK INVERSE PLATE VOLTAGE	75000 V	PEAK INVERSE PLATE VOLTAGE - 75,000 MAX. VOLTS
PLATE DISSIPATION	1200 W	PLATE DISSIPATION - - - 1200 MAX. WATTS

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
D-C PLATE CURRENT]	750 mA	D-C PLATE CURRENT] - - - 750 MAX. MA
PEAK PLATE CURRENT	12 mA	PEAK PLATE CURRENT 12 MAX. AMPERES
MECHANICAL Cooling-The [1]	2	MECHANICAL Cooling-The 2-2000A is cooled by forced air. convec+ion. and
MECHANICAL Cooling-The [2]	-2000	MECHANICAL Cooling-The 2-2000A is cooled by forced air. convec+ion. and
seals [1]	1	seals.1{ an E. F. Johnson Co. No.124-214 socket is used, air a+
seals [2]	124	seals.1{ an E. F. Johnson Co. No.124-214 socket is used, air a+
seals [3]	-214	seals.1{ an E. F. Johnson Co. No.124-214 socket is used, air a+
base either down or up. The lead +o the plate terminal of the a s+a+ic pressure of	4	base either down or up. The lead +o the plate terminal of the a s+a+ic pressure of 4 inches of water measured at the inlet of
+ube should be flexible. the I/	4	+ube should be flexible. the I/4-inch cooling tube in the socke+ will provide sufficient
The special [1]	4	The special 4-pin base fits an E. F. Johnson Co. No. 124- base cooling. The base of the +ube is provided with a I-inch
The special [2]	124	The special 4-pin base fits an E. F. Johnson Co. No. 124- base cooling. The base of the +ube is provided with a I-inch
of the voltage multipliers illustrated in Fig	2 V	of the voltage multipliers illustrated in Fig. 2, it may be neces- ing hole and the manifold is of the same diameter, a s+atic
come desirable. The maximum d-c current rating of the [1]	2 mA	come desirable. The maximum d-c current rating of the 2-2000A
come desirable. The maximum d-c current rating of the [2]	-2000 mA	come desirable. The maximum d-c current rating of the 2-2000A
The thoria+®d-tungsten filament of +he [1]	2 A	The thoria+®d-tungsten filament of +he 2-2000A roaches the peak vdluo of current to which the +ub@s will bo subiectod
The thoria+®d-tungsten filament of +he [2]	-2000 A	The thoria+®d-tungsten filament of +he 2-2000A roaches the peak vdluo of current to which the +ub@s will bo subiectod
with fil.mont voltage. Fig	2 V	with fil.mont voltage. Fig. 2 as a percent.go of +ho o{fectivo load rosistanc® per tube

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Operation-The plate of the [1]	2	Plate Operation-The plate of the 2-2000A op@rat@s at dull rod (Ec/lp). The total charging-circuit iesistanc® involves the in.
Plate Operation-The plate of the [2]	-2000	Plate Operation-The plate of the 2-2000A op@rat@s at dull rod (Ec/lp). The total charging-circuit iesistanc® involves the in.
color et the maximum plato dissipation rating of	1200 W	color et the maximum plato dissipation rating of 1200 wa+ts.
Published value	2.2 V	2.2000A MAXIMUM.PERFORMANCE CAPABILITIES may bo taken as the regulation of the high-voltage supply ®i-
Fig	2	Fig. 2, the plate resistance (Rp) will be half as great and the
peak curren+ usually limits the d-c current which the [1]	2 A	peak curren+ usually limits the d-c current which the 2-2000A is
peak curren+ usually limits the d-c current which the [2]	-2000 A	peak curren+ usually limits the d-c current which the 2-2000A is
of ripple and its wave-shape, circuit conditions will de+ermine [1]	2 W	of ripple and its wave-shape, circuit conditions will de+ermine 2-2000A is 75,000 volts. In single-phase power-supply rectifier
of ripple and its wave-shape, circuit conditions will de+ermine [2]	-2000 W	of ripple and its wave-shape, circuit conditions will de+ermine 2-2000A is 75,000 volts. In single-phase power-supply rectifier
of ripple and its wave-shape, circuit conditions will de+ermine [3]	75000 W	of ripple and its wave-shape, circuit conditions will de+ermine 2-2000A is 75,000 volts. In single-phase power-supply rectifier
Choke-Input Fil.er-The maximum d-c curren+ rating of the peak a-c supply voltage (I [1]	41 V	Choke-Input Fil.er-The maximum d-c curren+ rating of the peak a-c supply voltage (I.41 times Erms in Fig. 2) in the case
Choke-Input Fil.er-The maximum d-c curren+ rating of the peak a-c supply voltage (I [2]	2 V	Choke-Input Fil.er-The maximum d-c curren+ rating of the peak a-c supply voltage (I.41 times Erms in Fig. 2) in the case
low, +he [1]	2	low, +he 2-2000A is capable of larger d-c output curren+s.
low, +he [2]	-2000	low, +he 2-2000A is capable of larger d-c output curren+s.
Load voltage (volts) maximum current rating of +ho [1]	2 V	Load voltage (volts) maximum current rating of +ho 2-2000A is 1500 milliamperes.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Load voltage (volts) maximum current rating of +ho [2]	-2000 V	Load voltage (volts) maximum current rating of +ho 2-2000A is 1500 milliamperes.
Load voltage (volts) maximum current rating of +ho [3]	1500 V	Load voltage (volts) maximum current rating of +ho 2-2000A is 1500 milliamperes.
half-wave rec+ifiers. rating of	1200	half-wave rec+ifiers. rating of 1200 watts, the maximum peak-inverse-vol+ago ra+ing
Capacitor-Input Filler-The [1]	2 mA	Capacitor-Input Filler-The 2-2000A is particularly suitable for of 75,000 volts, and the max;mum peak plo+e current of 12
Capacitor-Input Filler-The [2]	-2000 mA	Capacitor-Input Filler-The 2-2000A is particularly suitable for of 75,000 volts, and the max;mum peak plo+e current of 12
Capacitor-Input Filler-The [3]	75000 mA	Capacitor-Input Filler-The 2-2000A is particularly suitable for of 75,000 volts, and the max;mum peak plo+e current of 12
Capacitor-Input Filler-The [4]	12 mA	Capacitor-Input Filler-The 2-2000A is particularly suitable for of 75,000 volts, and the max;mum peak plo+e current of 12
D-C Plato Current (Ip) [1]	550 A	D-C Plato Current (Ip) 550 boo 650 700 750 milliamperes per +ube
D-C Plato Current (Ip) [2]	650 A	D-C Plato Current (Ip) 550 boo 650 700 750 milliamperes per +ube
D-C Plato Current (Ip) [3]	700 A	D-C Plato Current (Ip) 550 boo 650 700 750 milliamperes per +ube
D-C Plato Current (Ip) [4]	750 A	D-C Plato Current (Ip) 550 boo 650 700 750 milliamperes per +ube
The Eimac [1]	2	The Eimac 2X3000F is a high-vacuum, forced-air cooled, external-anode diode
The Eimac [2]	0	The Eimac 2X3000F is a high-vacuum, forced-air cooled, external-anode diode
Voltage	7.5 V	Voltage - - 7.5 volts
Current	51 A	Current - - 51 amperes
Glass-to-Metal seals	175	Glass-to-Metal seals - - 175@ C
Anode core	175	Anode core - - 175. C
PEAK INVERSE PLATE VOLTAGE	-25000 V	PEAK INVERSE PLATE VOLTAGE -25,000 MAX. VOLTS
PLATE DISSIPATION	-3000 W	PLATE DISSIPATION -3,000 MAX. WATTS
DC PLATE CURRENT	3 mA	DC PLATE CURRENT 3 MAX. AMPERES
PEAK PLATE CURRENT	20 mA	PEAK PLATE CURRENT - - 20 MAX. AMPERES

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Sufficient forced air cooling must be provided to maintain seal and anode core temperature at	175	Sufficient forced air cooling must be provided to maintain seal and anode core temperature at 175°C or below.
The table below lists minimum air-flow requirements to maintain tube temperatures below	175	The table below lists minimum air-flow requirements to maintain tube temperatures below 175°C with air
flowing in both the base-to-anode and anode-to-base directions. This tabulation presumes air at	40	flowing in both the base-to-anode and anode-to-base directions. This tabulation presumes air at 40°C and sea
Note: An extra	375 W	Note: An extra 375 watts have been added to these plate dissipation figures in preparing this tabulation, to

TUBE TINKER

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