



TECHNICAL  
INFORMATION  
SERVICE

# Technical Information

## 3B24WA

### HALF-WAVE RECTIFIER

The 3B24WA is a half-wave, high vacuum rectifier tube with a "bonded thoria" tungsten filament. Its rugged construction makes it ideal for applications involving severe shock and vibration. The tube may be operated with either half of the filament functioning separately, or with the two halves connected in series or parallel. When operating with half the filament energized, it is equivalent to the older type RK-72 diode. Convection cooling is normally used with this tube. As is the case with most other electrical components, operation of the 3B24WA at or near its maximum ratings is not conducive to long life, economy or reliability.

#### MECHANICAL RATINGS: (Absolute Max.)

Impact Acceleration .....	450 G
Fatigue (Vibrational Acceleration for Extended Periods) .....	2.5 G
Altitude .....	10,000 ft.

#### ELECTRICAL DATA

Ratings and Normal Operation	MIL-E-1 Symbol	Test Limit or Absol. Min.	Normal Oper.	Test Limit or Absol. Max.	MIL-E-1 Units
Heater Voltage	Ef	4.75	5.0	5.25	V
	Ef(note 1)	2.375	2.5	2.625	V
Peak Plate Inverse Voltage	epx	---	---	20	Kv
Peak Plate Current	ib	---	---	300	ma
	ib	---	---	150 (note 1)	ma
DC Output Current	lo	---	---	60	mAdc
	lo	---	---	30 (note 1)	mAdc
Filament Current	if	2.75	3.0	3.25	Aac
Ef=2.5 Vac (Notes 1&2)					
Plate Current	lb	135	---	---	mAdc
Eb=250 Vdc Ef=5.0 V					
Gas (Note 3)	$\Delta$ lb	---	---	5	mAdc
Pp=50 w min.; t=30; Ef=5.0 Vac					
Operation	lo	60	---	---	mAdc
Ef=5.0 Vac; t=60; epx=20 Kv					
Emission (1)	is	750	---	---	mac
Ef=5.0 Vac; eb= 1000 V max.					
Emission (2)	is	375	---	---	mac
Ef=2.5 Vac; eb= 1000 V max. (Note 2)					

Note 1: Using one-half of filament.

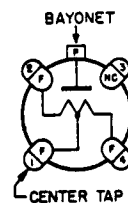
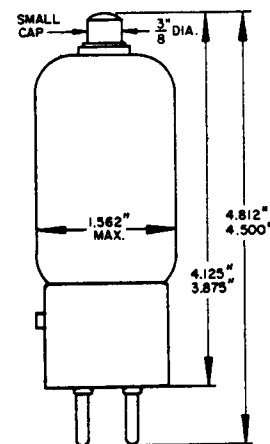
Note 2: Test each half of filament separately.

Note 3: The plate current shall not vary from the initial value at any time during the test by more than the specified amount.

#### MECHANICAL DATA

ENVELOPE ..... Glass T-12  
BASE ..... Medium 4 Pin Bayonet,  
Phenolic Low Loss, A4-10  
MOUNTING POSITION ..... Any

#### PHYSICAL DIMENSIONS



#### TERMINAL CONNECTIONS:

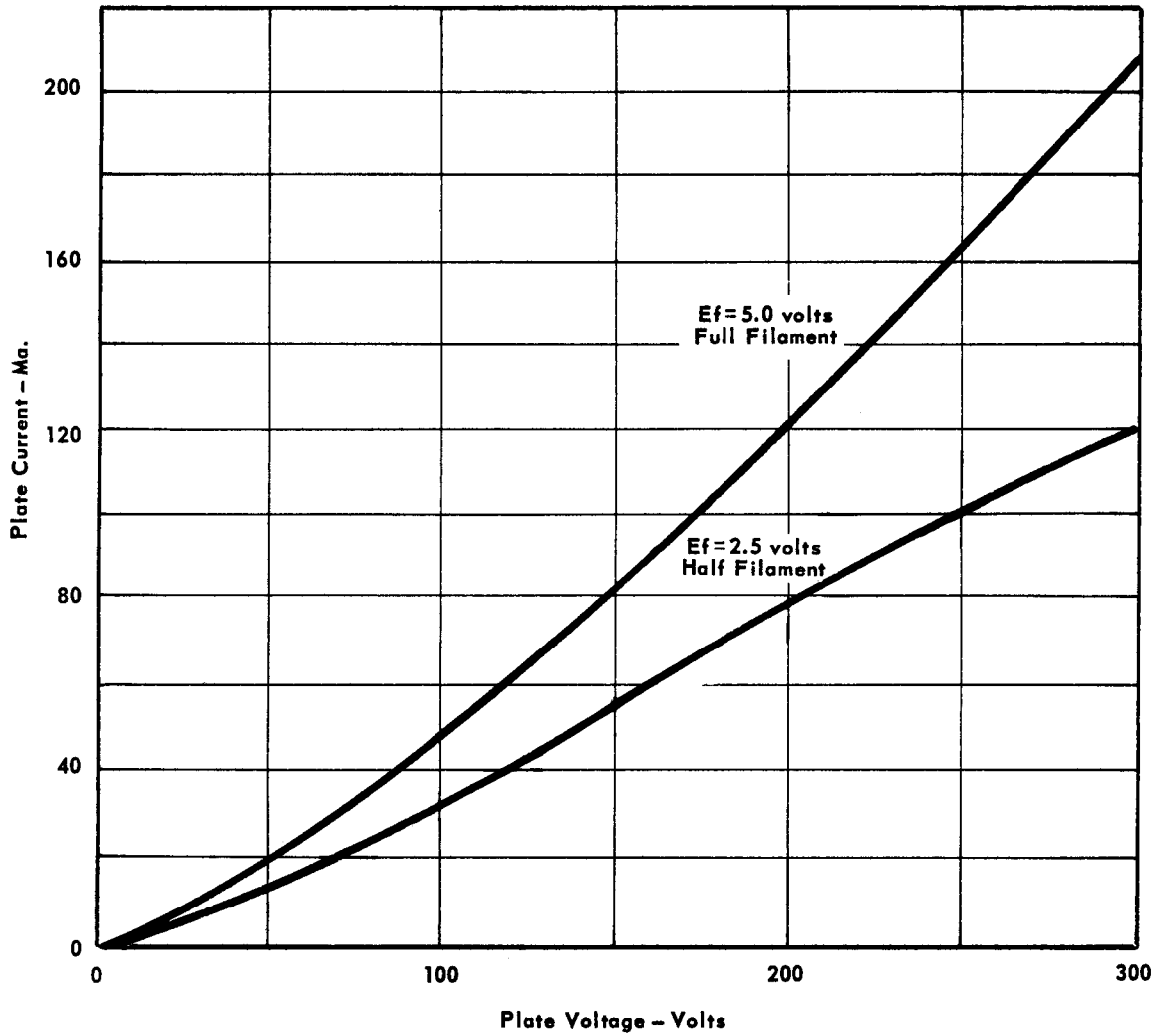
- Pin 1 Filament Center Tap
- Pin 2 Filament
- Pin 3 No Connection
- Pin 4 Filament
- Cap Plate



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VOLTAGE CHARACTERISTICS



The above curves show graphically the voltage characteristics on average tubes for both half and full filament operation under normal operating conditions.