



**E I M A C**  
 Division of Varian  
 SAN CARLOS  
 CALIFORNIA

**2X3000F**  
**HIGH-VACUUM**  
**RECTIFIER**

The EIMAC 2X3000F is a high-vacuum, forced-air cooled, external-anode diode intended for use in high-power rectifier units whenever high peak-inverse voltages, extreme ambient temperatures, high operating frequency, or the production of high-frequency transients would prevent the use of mercury-vapor or gas-filled rectifier tubes.

**CHARACTERISTICS**

**ELECTRICAL**

Filament: Thoriated Tungsten

Voltage - - - - - 7.5 volts  
 Current - - - - - 51 amperes

**MECHANICAL**

Operating Position - - - - - Vertical, base down or up

Maximum Operating Temperatures:

Glass-to-Metal Seals - - - - - 175° C  
 Anode Core - - - - - 175° C

Net Weight - - - - - 5.7 pounds

Shipping Weight (Approximate) - - - - - 17 pounds

**MAXIMUM RATINGS**

PEAK INVERSE PLATE VOLTAGE - - - - - 25,000 VOLTS  
 PLATE DISSIPATION - - - - - 3,000 WATTS  
 DC PLATE CURRENT - - - - - 3 AMPERES  
 PEAK PLATE CURRENT - - - - - 20 AMPERES

**TYPICAL POWER-SUPPLY CAPABILITIES\***

Circuit	Maximum AC Input Voltage (volts rms)	Approx. DC Output Voltage (volts)	Maximum DC Output Current (amps)
Single-Phase, Full-Wave (2 tubes) - -	17,700 total	8,000	6.0
Single-Phase, Bridge (4 tubes) - - -	17,700 total	16,000	6.0
Three-Phase, Full-Wave (6 tubes) - -	10,200 per leg	24,000	9.0

\*Choke-input filter with L equal to or greater than twice "critical"; zero circuit loss assumed.

**COOLING**

Sufficient forced air cooling must be provided to maintain seal and core temperature at 175°C or below. Air-flow must be started when filament power is applied and it is advisable to continue air-cooling for two minutes after all voltages are removed.

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°C and sea level. A separate supply of approximately six cubic feet

per minute, directed into the filament structure is also required to maintain rated filament seal temperatures. This is best accomplished using a small diameter insulating tubing directed into the stem, between the filament seals.

Plate Dissipation (Watts)	MINIMUM COOLING AIR-FLOW REQUIREMENTS			
	BASE-TO-ANODE FLOW		ANODE-TO-BASE FLOW	
	Air-Flow (cfm)	Pressure Drop (inches of water)	Air-Flow (cfm)	Pressure Drop (inches of water)
1000	15	0.1	25	0.2
2000	45	0.4	75	1.2
3000	95	1.4	155	4.5

Note: An extra 375 watts have been added to these plate dissipation figures in preparing this tabulation, to compensate for filament dissipation.

For operation at high altitudes or higher ambient temperatures, these quantities should be increased. In all cases it is suggested that actual temperatures be measured to insure adequate cooling.



