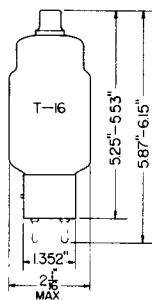


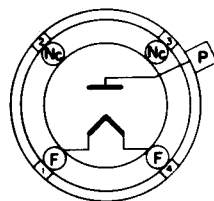
**TUNG-SOL**

DIODE



**GLASS BULB**

FILAMENT  
 2.5±5% VOLTS 5.0 AMP.  
 AC OR DC  
 ANY MOUNTING POSITION



**BOTTOM VIEW**

SMALL MEDIUM SHELL  
 4 PIN BAYONET BASE

4 P

THE 3B28 IS A XENON FILLED HALF WAVE RECTIFIER FOR USE IN HIGH VOLTAGE CIRCUITS. THE TUBE IS DESIGNED TO OPERATE OVER A WIDE TEMPERATURE RANGE WITHOUT THE NECESSITY OF HEATING OR COOLING DEVICES. ITS HARD GLASS ENVELOPE AND WELL SUPPORTED MOUNT MAKE IT PARTICULARLY SUITED FOR MILITARY AND INDUSTRIAL USE. AS CONTRASTED TO SIMILAR MERCURY-VAPOR TUBES, THE 3B28 MAY BE MOUNTED IN ANY POSITION AND IS NOT SUBJECT TO MERCURY-SPLASH PROBLEMS. ITS EFFICIENT OXIDE COATED FILAMENT IS FAST HEATING. AS CONSISTENT WITH FILAMENTARY GAS AND VAPOR RECTIFIER TUBE PRACTICE, QUADRATURE EXCITATION OF THE FILAMENT IS RECOMMENDED FOR OBTAINING THE LONGEST TUBE LIFE. IN QUADRATURE OPERATION, THE FILAMENT CURRENT IS PHASED TO BE AT A MINIMUM WHEN THE PEAK ANODE CURRENT FLOWS. HOWEVER THE TUBE CARRIES FULL RATINGS FOR IN PHASE OPERATION OF THE FILAMENT.

**MAXIMUM RATINGS**

MAXIMUM PEAK INVERSE VOLTAGE	5 000	10 000	VOLTS
MAXIMUM PEAK CATHODE CURRENT	2.	1.	AMP.
MAXIMUM AVERAGE CATHODE CURRENT	0.5	0.25	AMP.
MAXIMUM SURGE CATHODE CURRENT	20.	20.	AMP.
(MAXIMUM DURATION TIME 0.1 SECONDS)			
MAXIMUM AVERAGING TIME	30.	30.	SECONDS
MAXIMUM SUPPLY FREQUENCY	500	150	CPS
AMBIENT TEMPERATURE LIMITS	-55 TO +75	-55 TO +75	°C

**ELECTRICAL DATA**

FILAMENT VOLTAGE	2.5±5%	VOLTS
FILAMENT CURRENT AT 2.5 VOLTS	5.0	AMP.
MINIMUM CATHODE HEATING TIME	5.	SECONDS
AVERAGE ANODE VOLTAGE DROP	10.	VOLTS
PEAK ANODE VOLTAGE DROP	14.	VOLTS
CRITICAL ANODE VOLTAGE	50.	VOLTS

CONTINUED ON FOLLOWING PAGE

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CONTINUED FROM PRECEDING PAGE

## MECHANICAL DATA

MOUNTING POSITION	ANY	
OVERALL LENGTH	5.87 TO 6.15	INCHES
SEATED LENGTH	5.25 TO 5.53	INCHES
MAXIMUM DIAMETER	2.07	INCHES
BULB	T- 16	NONEX
CAP	MEDIUM METAL, C1-5	
BASE	MEDIUM 4 PIN BAYONET, A4-10	
WEIGHT (NET) MAX.	4	OUNCES

## MAXIMUM CIRCUIT VALUES

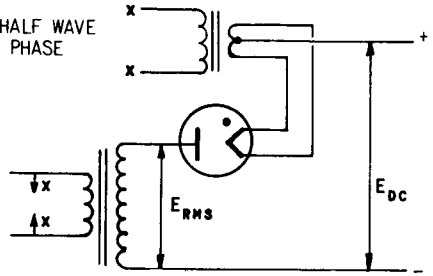
FIG.	CIRCUIT	TRANSFORMER	FILAMENT OPERATION	NO. OF TUBES	A. C. SECONDARY VOLTS ERMS	DC OUTPUT (APPROX.)		RIPPLE	
						E <sub>DC</sub> IN VOLTS	I <sub>DC</sub> IN AMPERES	VOLTS RMS	FREQ.
1	HALF WAVE SINGLE PHASE	SINGLE PHASE	IN PHASE	1	7000 <sup>A</sup> 3500 <sup>B</sup>	3200 1600	0.25 0.50	3500 1750	f
2	FULL WAVE SINGLE PHASE	SINGLE PHASE CENTER TAP	IN PHASE	2	3500 <sup>A</sup> 1750 <sup>B</sup>	3200 1600	0.50 1.00	1500 750	2f
3	BRIDGE CIRCUIT SINGLE PHASE	SINGLE PHASE	IN PHASE	4	7000 <sup>A</sup> 3500 <sup>B</sup>	6400 3200	0.50 1.00	3000 1500	2f
4	HALF WAVE THREE PHASE	DELTA-WYE	—	3	4000 <sup>A</sup> 2000 <sup>B</sup>	4800 2400	0.75 1.50	860 430	3f
5	FULL WAVE THREE PHASE	DELTA-WYE	QUADRATURE	6	4000 <sup>A</sup> 2000 <sup>B</sup>	9500 4750	0.75 1.50	400 200	6f
6	FULL WAVE THREE PHASE	DELTA-DELTA	QUADRATURE	6	7000 <sup>A</sup> 3500 <sup>B</sup>	9500 4750	0.75 1.50	400 200	6f
7	HALF WAVE SIX PHASE (THREE PHASE SUPPLY)	DELTA-STAR	QUADRATURE	6	3500 <sup>A</sup> 1750 <sup>B</sup>	4800 2400	1.0 2.0	200 100	6f

DC OUTPUT VALUES ARE THOSE SUPPLIED TO A CHOKE INPUT FILTER WITH A PURE SINE WAVE SUPPLY.

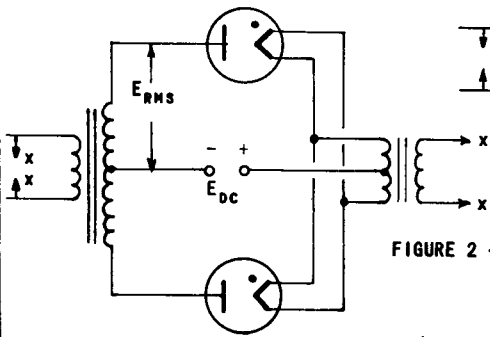
<sup>A</sup>VALUES ARE FOR A MAXIMUM OF 10KV PEAK INVERSE VOLTAGE PER TUBE AND 150 CPS MAXIMUM SUPPLY FREQUENCY.<sup>B</sup>VALUES FOR A MAXIMUM FO 5. KV PEAK INVERSE VOLTAGE PER TUBE AND 500 CPS MAXIMUM SUPPLY FREQUENCY.

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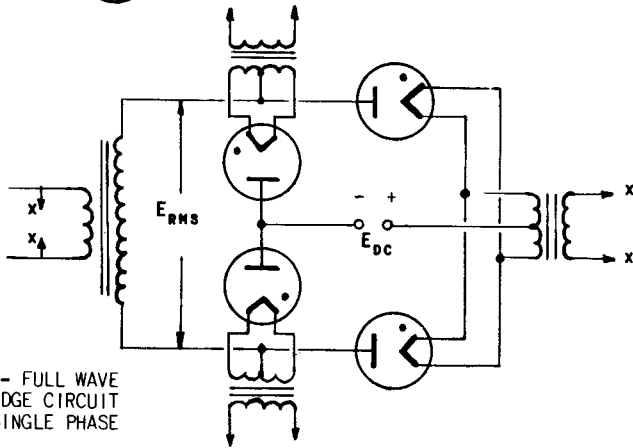
**FIGURE 1 - HALF WAVE  
-SINGLE PHASE**



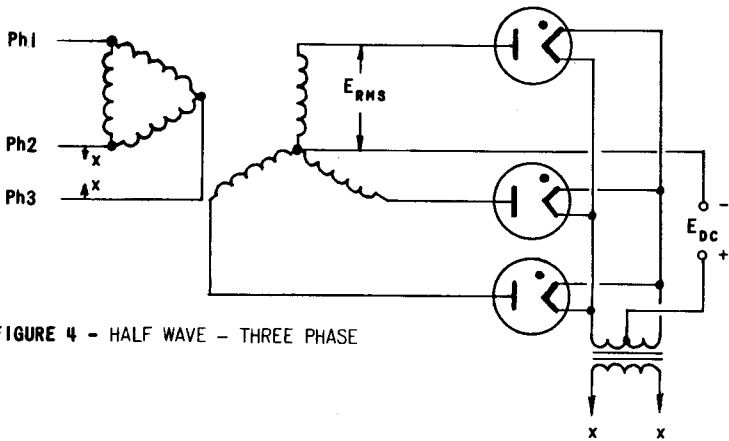
**FIGURE 2 - FULL WAVE - SINGLE PHASE**



**FIGURE 3 - FULL WAVE  
BRIDGE CIRCUIT  
-SINGLE PHASE**



**FIGURE 4 - HALF WAVE - THREE PHASE**



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FIGURE 5 - FULL WAVE-THREE PHASE

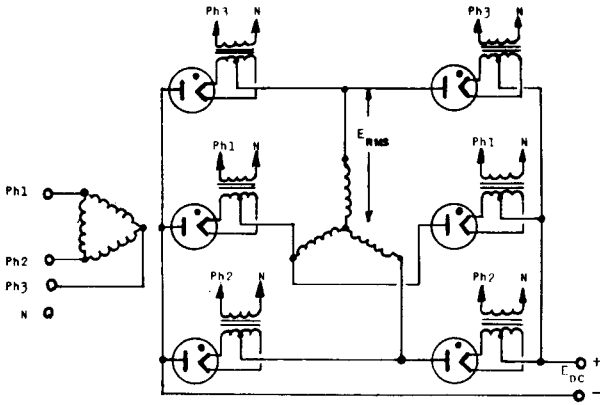


FIGURE 6 - FULL WAVE - THREE PHASE

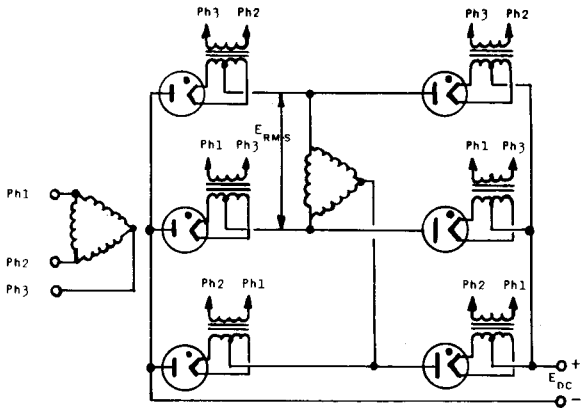


FIGURE 7 - HALF WAVE-SIX PHASE (3 PHASE SUPPLY)

