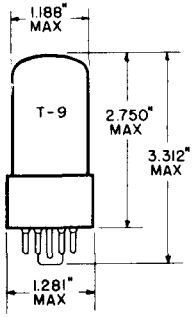
TUNG-SOL

FULL WAVE HIGH VACUUM RECTIFIER

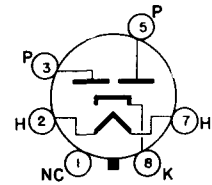


GLASS BULB
INTERMEDIATE SHELL
6 PIN OCTAL BASE E6-8
OUTLINE DRAWING
JEDEC 9-11

UNIPOTENTIAL CATHODE

FOR

RECTIFIER SERVICE IN
BATTERY OPERATED OR
AC RECEIVERS



BOTTOM VIEW

BASING DIAGRAM
JEDEC 6S

THE 6X5GT IS DESIGNED FOR SERVICE IN STORAGE BATTERY OR AC OPERATED RECEIVERS.

HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS	6.3 VOLTS	600	MA.
HEATER SUPPLY LIMITS:			
VOLTAGE OPERATION		6.3±0.6	VOLTS
MAXIMUM HEATER-CATHODE VOLTAGE:			
HEATER NEGATIVE WITH RESPECT TO CATHODE			
DC		450	VOLTS
TOTAL DC AND PEAK		450	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE			
DC		100	VOLTS
TOTAL DC AND PEAK		200	VOLTS

→ MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

PEAK INVERSE PLATE VOLTAGE		1250	VOLTS
STEADY-STATE PEAK PLATE CURRENT	(see rating chart 2)	245	MA.
TRANSIENT PEAK PLATE CURRENT PER PLATE	(see rating chart 3)	1.1	AMP.
DC OUTPUT CURRENT PER PLATE	(see rating chart 1)		
AC PLATE VOLTAGE PER PLATE (RMS):			
CAPACITOR INPUT	(see rating chart 1)		
CHOKE INPUT	(see rating chart 1)		
VIBRATOR OPERATION (MIN. DUTY CYCLE OF 75%):			
DC OUTPUT VOLTAGE AT FILTER INPUT		350	VOLTS
DC OUTPUT CURRENT PER PLATE		45	MA.

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TUNG-SOL

CONTINUED FROM PRECEDING PAGE

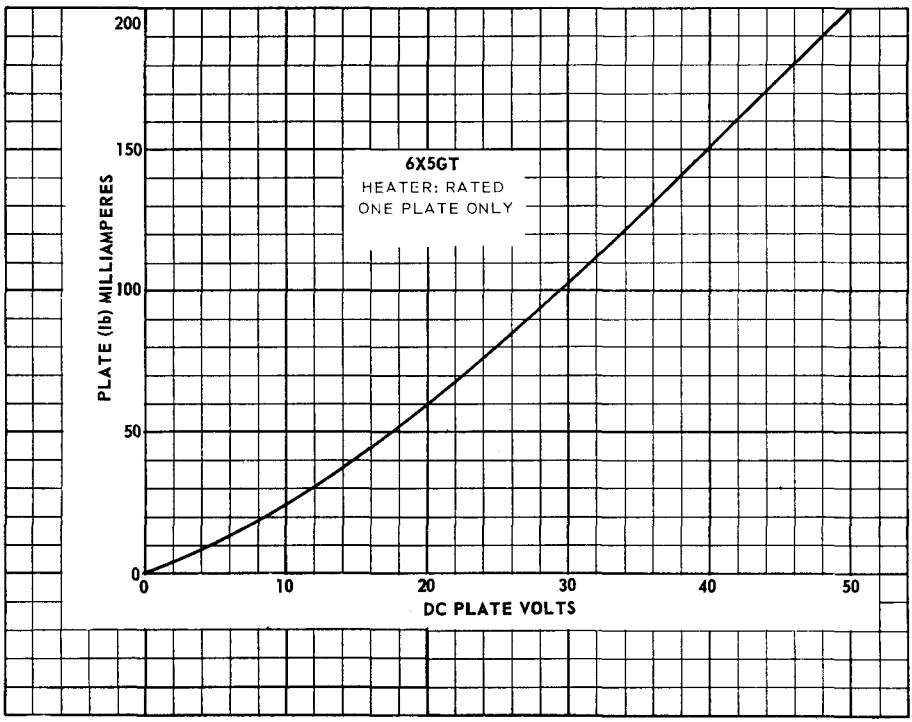
→ TYPICAL OPERATING CHARACTERISTICS

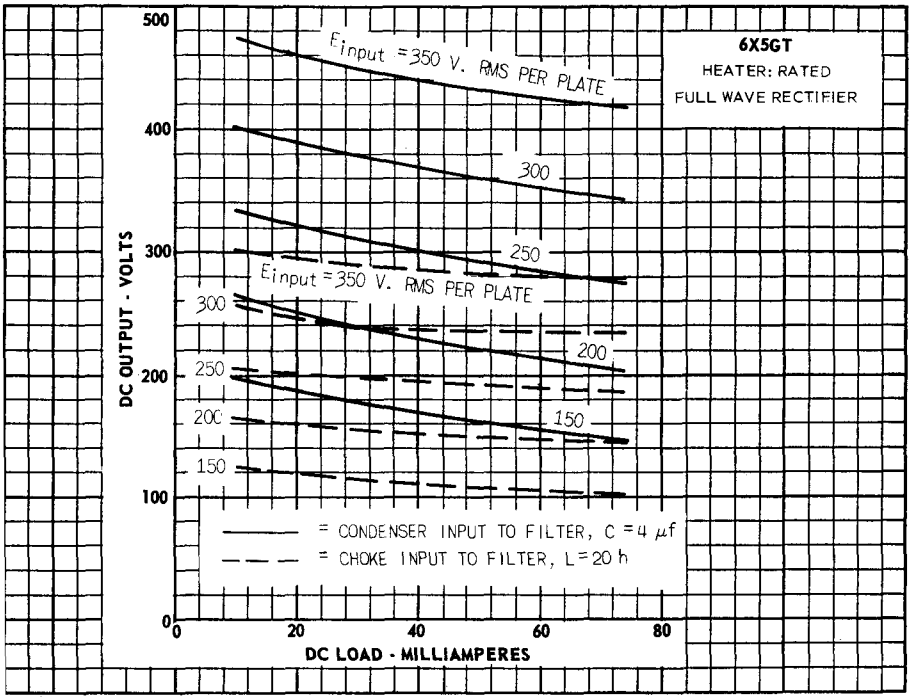
FULL-WAVE RECTIFIER

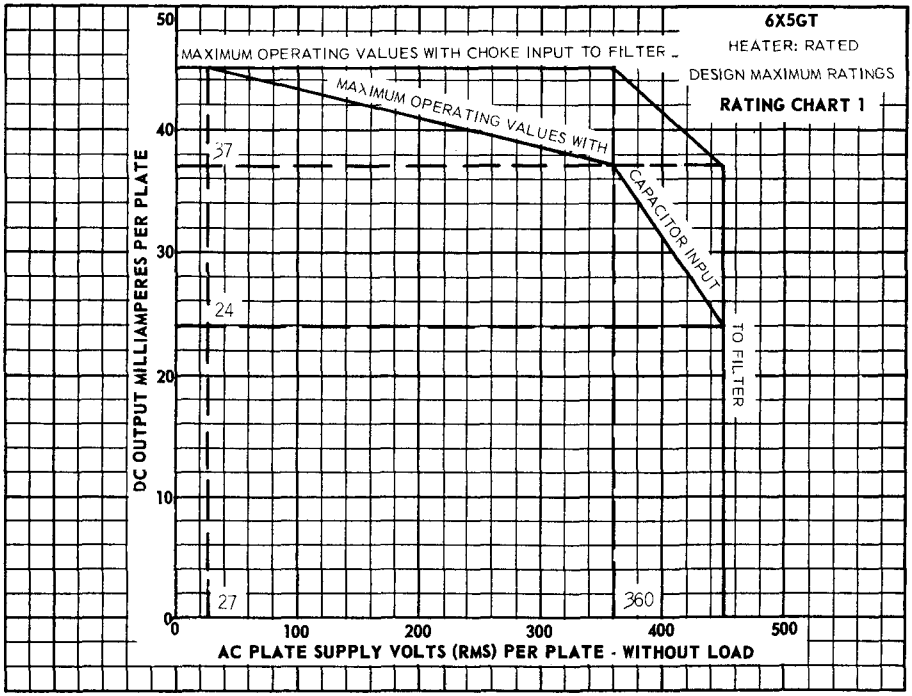
	SINE-WAVE OPERATION	VIBRATOR OPERATION	
CAPACITOR INPUT TO FILTER:			
AC PLATE VOLTAGE PER PLATE (RMS, NO LOAD)	325	----	VOLTS
INPUT CAPACITOR	10	10	μf
TOTAL EFFECTIVE PLATE SUPPLY IMPEDANCE PER PLATE	525	----	OHMS
DC OUTPUT CURRENT	70	70	MA.
DC OUTPUT VOLTAGE AT FILTER INPUT (APPROX.)	310	240	VOLTS
CHOKE INPUT TO FILTER:			
AC PLATE VOLTAGE PER PLATE (RMS, NO LOAD)	400	----	VOLTS
INPUT CHOKE	10	----	HENRYS
DC OUTPUT CURRENT	70	----	MA.
DC OUTPUT VOLTAGE AT FILTER INPUT (APPROX.)	340	----	VOLTS
TUBE VOLTAGE DROP AT 70 MA. PER PLATE	22	----	VOLTS

A
WHEN THE HEATER IS OPERATED IN AUTOMOTIVE SERVICE FROM A 6-VOLT BATTERY SOURCE, THE PERMISSIBLE RANGE IN HEATER VOLTAGE IS FROM 5.0 TO 8.0 VOLTS.

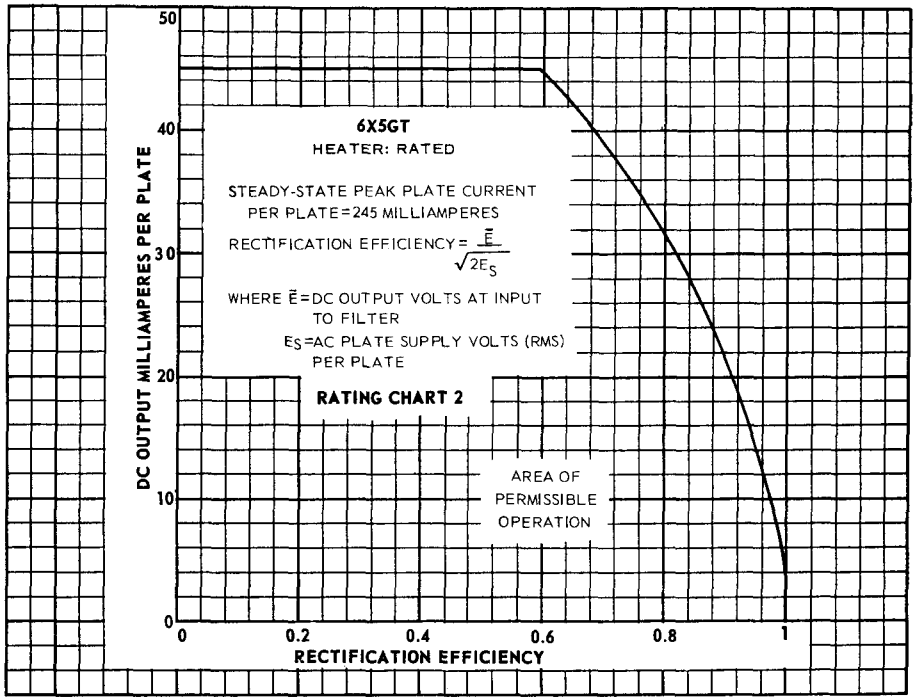
→ INDICATES A CHANGE.

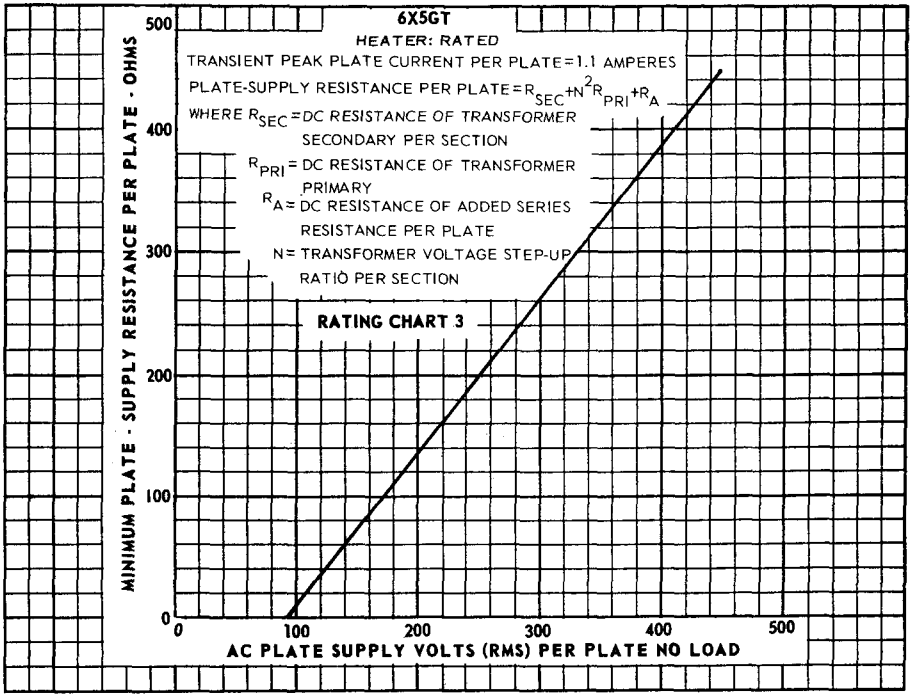



6X5GT
HEATER: RATED
FULL WAVE RECTIFIER
Einput = 350 V. RMS PER PLATE
300
250
Einput = 350 V. RMS PER PLATE
300
200
250
150
200
150
= CONDENSER INPUT TO FILTER, C = 4 μf
= CHOKE INPUT TO FILTER, L = 20 h
DC OUTPUT - VOLTS
DC LOAD - MILLIAMPERES
0
100
200
300
400
500
0
20
40
60
80


6X5GT
HEATER: RATED
DESIGN MAXIMUM RATINGS
RATING CHART 1
MAXIMUM OPERATING VALUES WITH CHOKE INPUT TO FILTER
MAXIMUM OPERATING VALUES WITH
CAPACITOR INPUT
TO FILTER
37
24
27
360
DC OUTPUT MILLIAMPERES PER PLATE
AC PLATE SUPPLY VOLTS (RMS) PER PLATE - WITHOUT LOAD
0
10
20
30
40
50
0
100
200
300
400
500

6X5GT


6X5GT
HEATER: RATED
STEADY-STATE PEAK PLATE CURRENT PER PLATE=245 MILLIAMPERES
RECTIFICATION EFFICIENCY= $\frac{\bar{E}}{\sqrt{2}E_S}$
WHERE $\bar{E}$=DC OUTPUT VOLTS AT INPUT TO FILTER
E_S=AC PLATE SUPPLY VOLTS (RMS) PER PLATE
RATING CHART 2
AREA OF PERMISSIBLE OPERATION
DC OUTPUT MILLIAMPERES PER PLATE
0
10
20
30
40
50
0
0.2
0.4
0.6
0.8
1
RECTIFICATION EFFICIENCY


6X5GT
HEATER: RATED
TRANSIENT PEAK PLATE CURRENT PER PLATE=1.1 AMPERES
PLATE-SUPPLY RESISTANCE PER PLATE=$R_{SEC}+N^2R_{PRI}+R_A$
WHERE R_{SEC}=DC RESISTANCE OF TRANSFORMER SECONDARY PER SECTION
R_{PRI}= DC RESISTANCE OF TRANSFORMER PRIMARY
R_A= DC RESISTANCE OF ADDED SERIES RESISTANCE PER PLATE
N= TRANSFORMER VOLTAGE STEP-UP RATIO PER SECTION
RATING CHART 3
MINIMUM PLATE - SUPPLY RESISTANCE PER PLATE - OHMS
0
100
200
300
400
500
0
100
200
300
400
500
AC PLATE SUPPLY VOLTS (RMS) PER PLATE NO LOAD