

Amperex[®] ELECTRONIC CORPORATION

220 DUFFY AVENUE, NICKSVILLE, L. I., N. Y.

**TUBE TYPE
8118**

The 8118 is an instant heating double tetrode for use as output amplifier, driver or frequency multiplier at frequencies up to 500 Mc. The filament service may be intermittent or continuous. The 8118 is especially intended for transistorized mobile equipment.

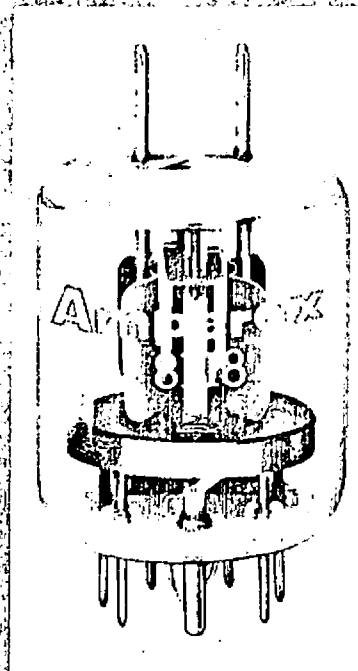
GENERAL CHARACTERISTICS

MECHANICAL

Mounting Position	any
Dimensions	see outline drawing
Base	septar
Maximum Temperature	
Of Bulb and Plate Seals	250°C
Of Bottom Pin Seals	180°C
Net Weight	1.9 oz.
Shipping Weight	4.9 oz.

ELECTRICAL

Filament	oxide coated
Voltage ¹	1.6 ± 15% volts
Current	4.25 amps
Warm-up Time (Power Output = 70% of Full Load)	≤0.5 sec.
Direct Interelectrode Capacitances (push-pull)	
Input	4.5 pf
Output	1.8 pf
Amplification Factor	
(Grid No. 1 to Grid No. 2)	9
Transconductance	2500 μmhos



Amperex

from JEDEC release #4524, Dec. 9, 1963,
and release #4524A, April 6, 1964

¹ The filament supply may be DC or 50 to 60 cps AC (sinusoidal or square wave). Sinusoidal supply voltages within the frequency range of 200 to 2000 cps should not be used.

Class C Telephony or FM Telephony
(Two Systems in Push-Pull)

Maximum Ratings, Absolute Values

Frequency	220	500	Mc
DC Plate Voltage	600	450	volts
DC Grid No. 2 Voltage	300	300	volts
Grid No. 2 Dissipation	2x1.5	2x1.5	watts
Grid No. 1 Dissipation	2x0.5	2x0.5	watts
DC Grid No. 1 Current	2x2.5	2x2.5	ma
DC Cathode Current	2x60	2x60	ma
DC Grid No. 1 Voltage	-75	-75	ma
Plate Dissipation	2x10	2x10	watts
Grid No. 1 Circuit Resistor (each section)			
Fixed Bias	50	50	k ohms
Automatic Bias	100	100	k ohms

Typical Operation

Frequency	200	200	200	460	Mc
DC Plate Voltage	300	400	600	400	volts
DC Grid No. 2 Voltage	250	250	250	250	volts
DC Grid No. 1 Voltage	-40	-50	-60	-50	volts
Peak Voltage between the Two Control Grids	116	136	156	140	volts
DC Plate Current	2x50	2x50	2x50	2x50	ma
DC Grid No. 2 Current	2x4	2x3.5	2x3	2x3	ma
DC Grid No. 1 Current	2x1.5	2x1.5	2x1.0	2x0.6	ma
Driving Power	1.2	1.3	1.5	5	watts
Plate Dissipation	2x5.5	2x6.0	2x7.5	2x9.5	watts
Power Output	19	28	45	21	watts
Efficiency	63	70	75	52.5	%
Useful Output Power to Load	16	22	35	17	watts

Class C, Plate and Screen Modulation
(Two Systems in Push-Pull)

Maximum Ratings, Absolute Values

Frequency	220	500	Mc
DC Plate Voltage	500	375	volts
DC Grid No. 2 Voltage	300	300	volts
Grid No. 2 Dissipation	2x1.5	2x1.5	watts
Grid No. 1 Dissipation	2x0.5	2x0.5	watts
DC Grid No. 1 Current	2x2.5	2x2.5	ma
DC Cathode Current	2x55	2x55	ma
DC Grid No. 1 Voltage	-100	-100	volts
Plate Dissipation	2x7	2x7	watts
Grid No. 1 Circuit Resistor (each section)			
Fixed Bias	50	50	k ohms
Automatic Bias	100	100	k ohms

Typical Operation

Frequency	200	200	Mc
DC Plate Voltage	300	500	volts
DC Grid No. 2 Voltage	250	250	volts
DC Grid No. 1 Voltage	-50	-80	volts
Peak Voltage between the Two Control Grids	166	220	volts
DC Plate Current	2x40	2x40	ma
DC Grid No. 2 Current	2x3.5	2x4.0	ma
DC Grid No. 1 Current	2x1.5	2x1.5	ma
Driving Power	1.9	3.0	watts
Plate Dissipation	2x4	2x5.5	watts
Power Output	16	29	watts
Efficiency	67	73	%
Useful Output Power to Load	13	22	watts
Modulation Depth	100	100	%
Modulation Power	12	20	watts
Peak Grid No. 2 Voltage	185	185	volts

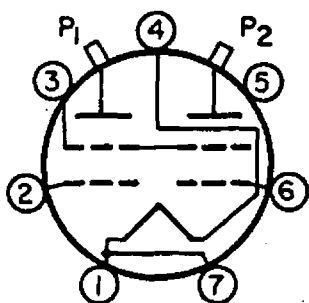
**Class C Frequency Tripler
(Two Systems in Push-Pull)
Maximum Ratings, Absolute Values**

8118

DC Plate Voltage	600	volts
DC Grid No. 2 Voltage	300	volts
DC Grid No. 1 Voltage	-200	volts
Plate Dissipation	2x10	watts
Grid No. 2 Dissipation	2x1.5	watts
Grid No. 1 Dissipation	2x0.5	watts
DC Grid No. 1 Current	2x4.5	ma
DC Cathode Current	2x55	ma
Peak Cathode Current	2x400	ma
Grid No. 1 Circuit Resistor (each section)		
Fixed Bias	50	k ohms
Automatic Bias	100	k ohms

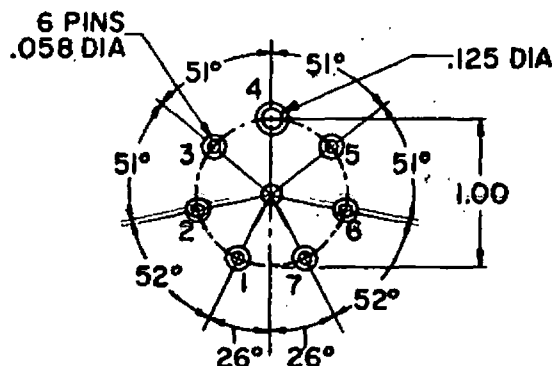
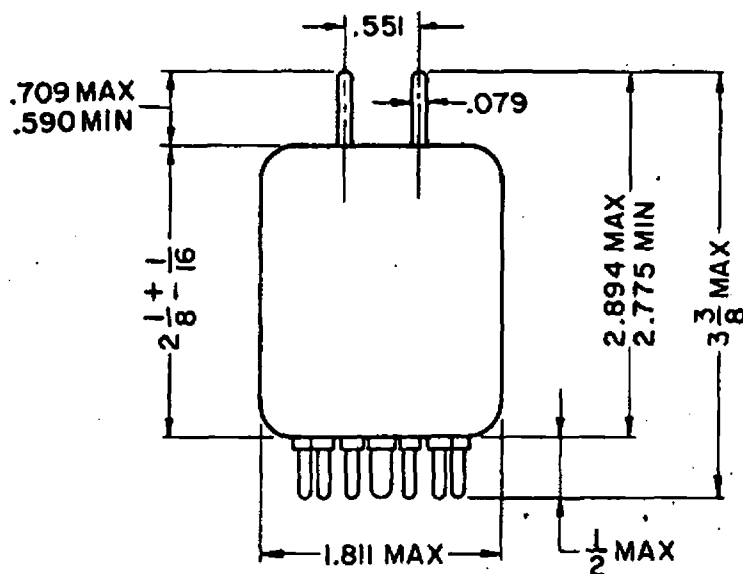
Typical Operation

Frequency	86.7/200	153.3/460	Mc
DC Plate Voltage	300	300	volts
DC Grid No. 2 Voltage	250	250	volts
DC Grid No. 1 Voltage	-175	-175	volts
Peak Voltage between the Two Control Grids	410	410	volts
DC Plate Current	2x45	2x45	ma
DC Grid No. 2 Current	2x4	2x3.5	ma
DC Grid No. 1 Current	2x3	2x2.5	ma
Driving Power	3	5	watts
Plate Dissipation	2x9	2x10	watts
Power Output	9	7	watts
Efficiency	33	26	%
Useful Output Power to Load	7	5.5	watts



PIN CONNECTIONS

- 1-FILAMENT
- 2- GRID NO.1, UNIT NO.2
- 3- GRID NO.2, UNITS NO.1 & 2
- 4-FILAMENT
- 5- NO CONNECTION
- 6- GRID NO.1, UNIT NO.1
- 7-FILAMENT
- P₁-PLATE, UNIT NO.2
- P₂-PLATE, UNIT NO.1



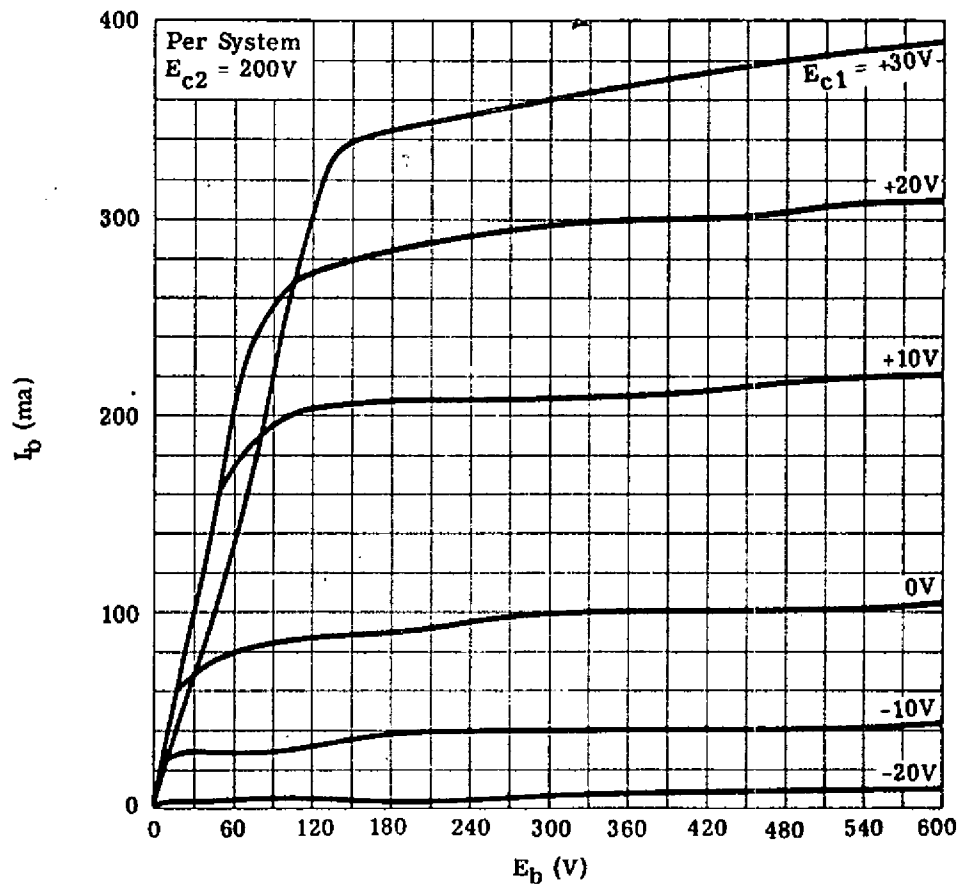


FIGURE 1. PLATE CHARACTERISTICS

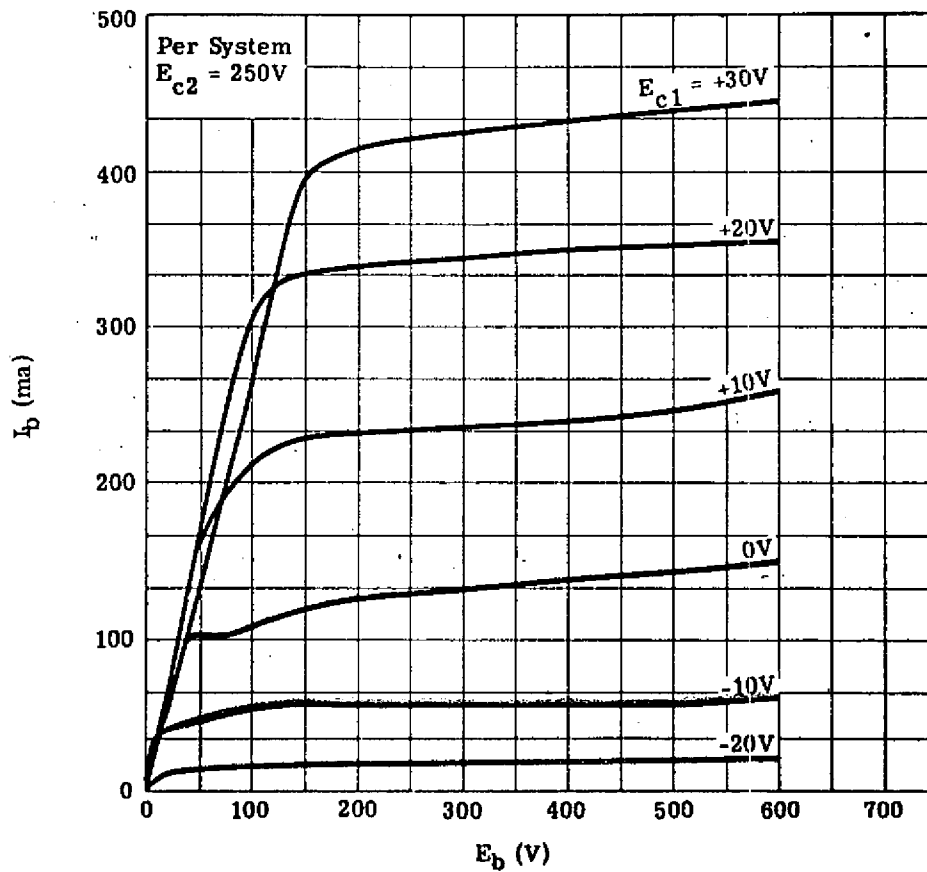


FIGURE 2. PLATE CHARACTERISTICS

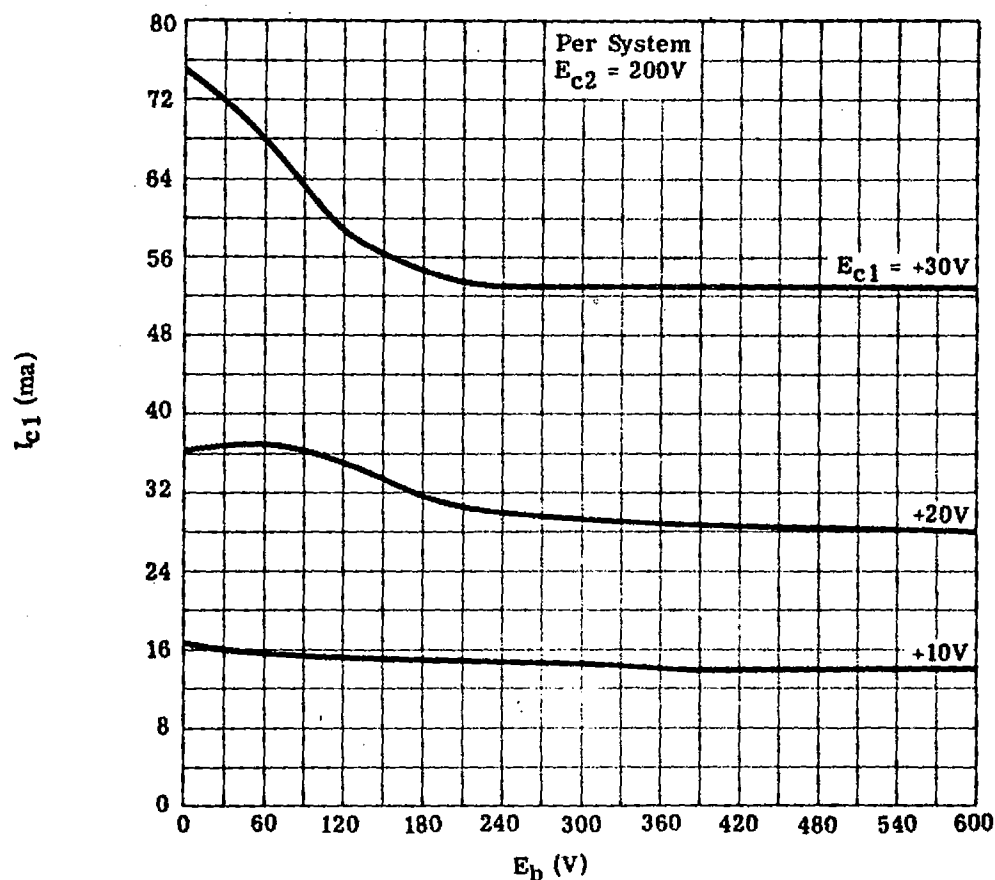


FIGURE 3. CONTROL GRID CHARACTERISTICS

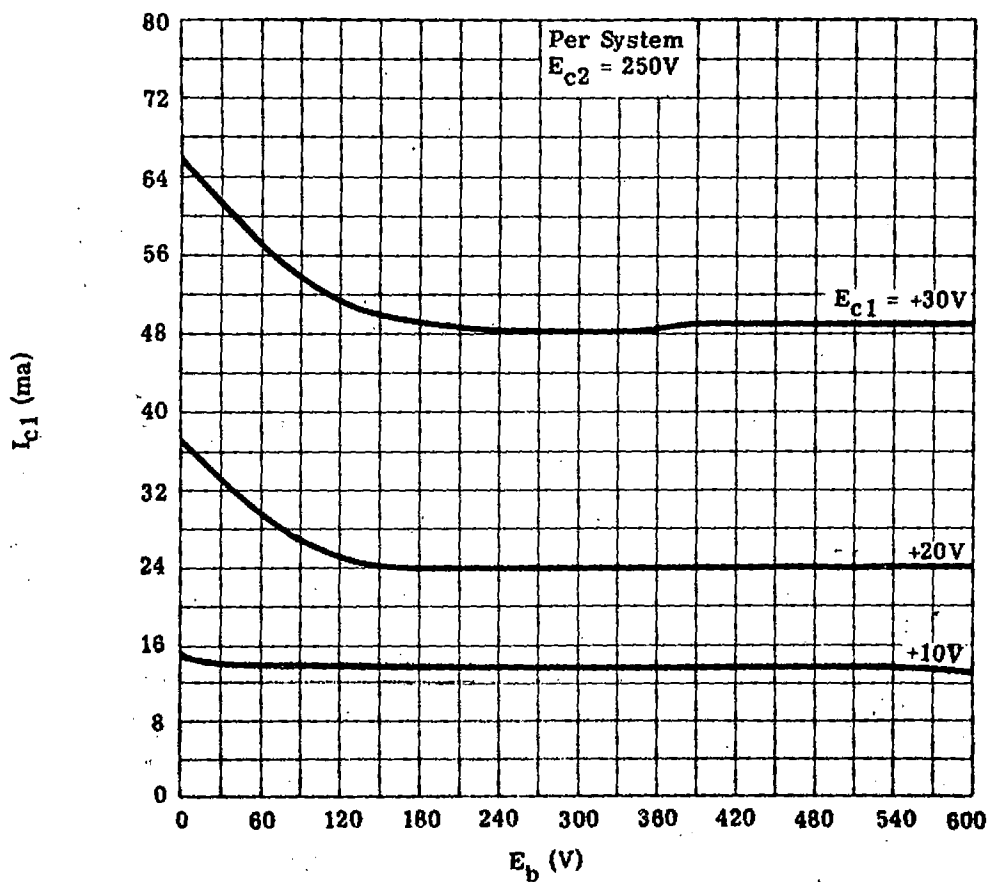


FIGURE 4. CONTROL GRID CHARACTERISTICS

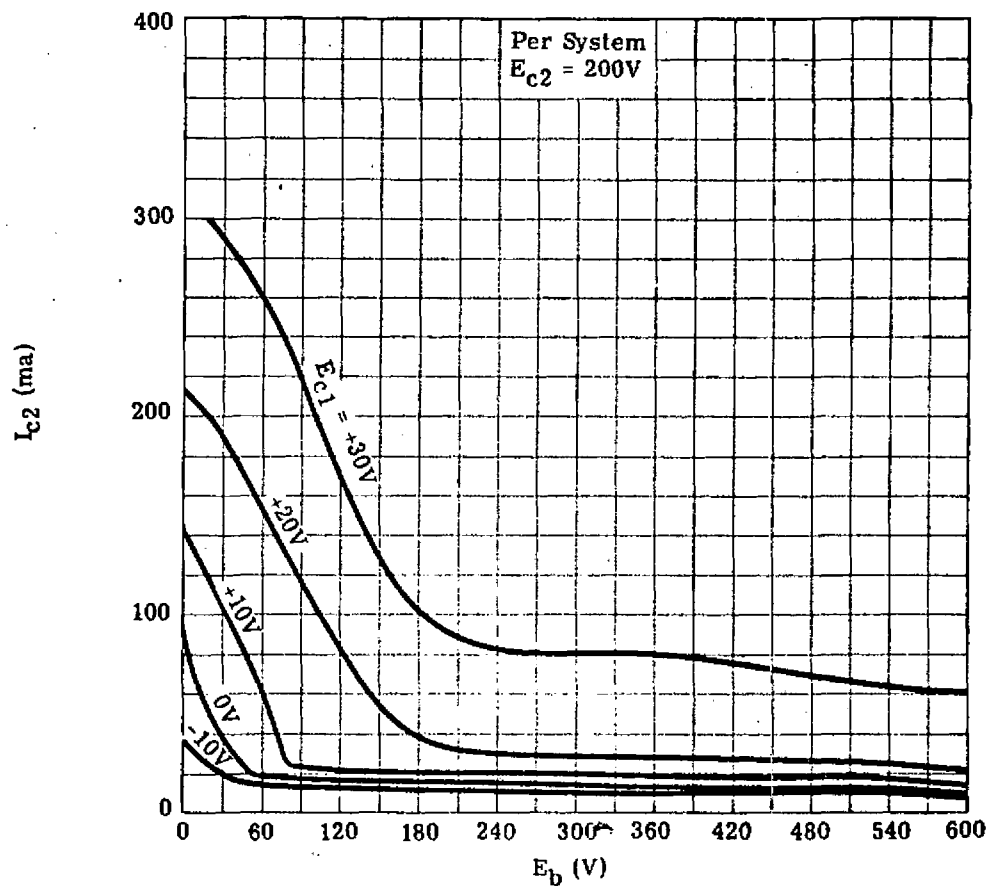


FIGURE 5. SCREEN GRID CHARACTERISTICS

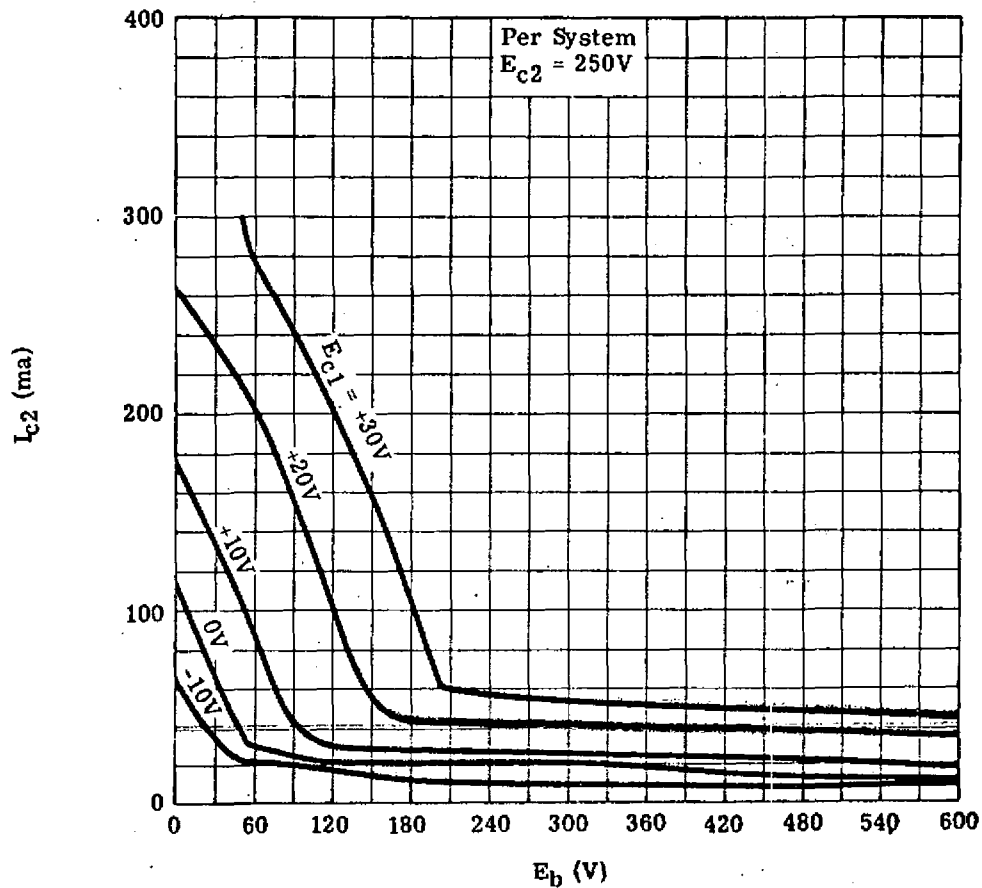


FIGURE 6. SCREEN GRID CHARACTERISTICS

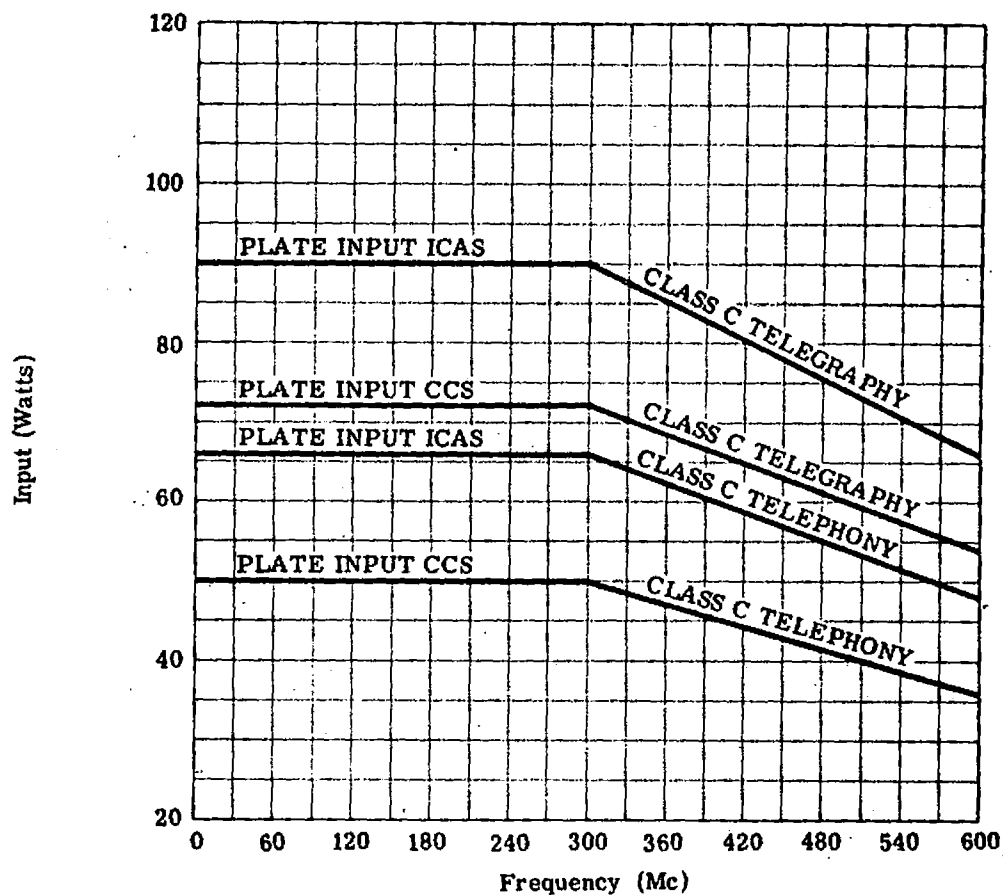


FIGURE 7. DERATING CURVES

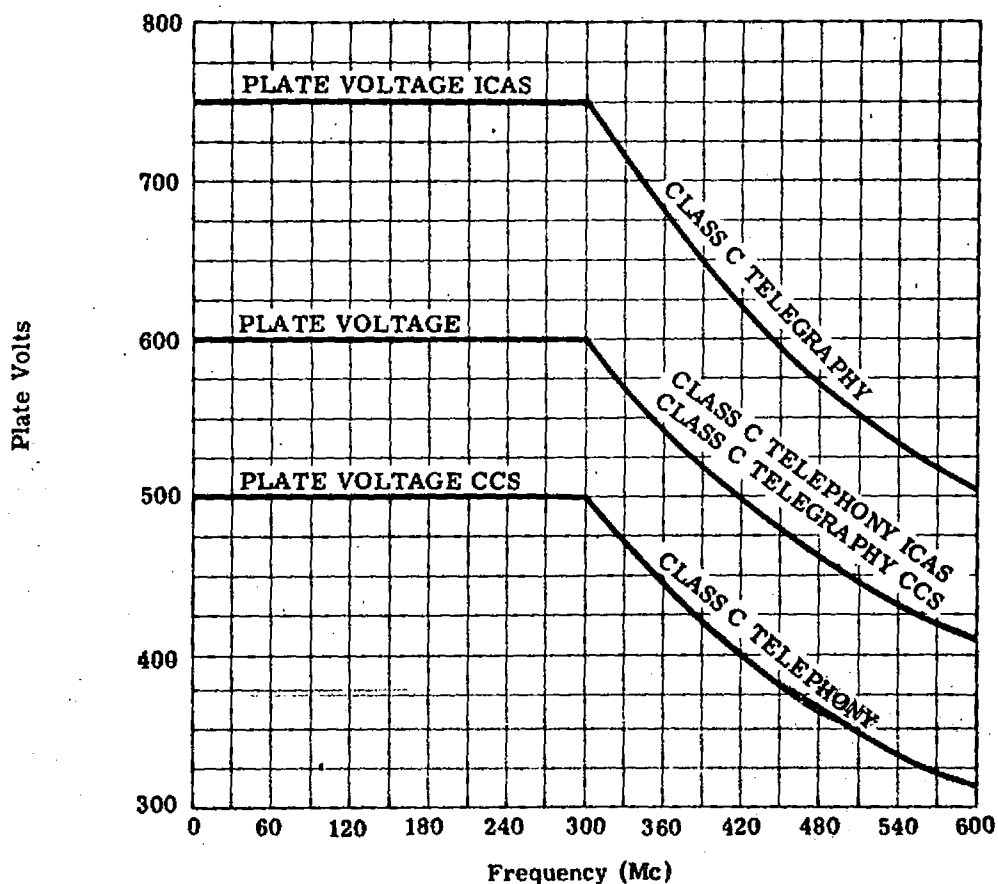


FIGURE 8. DERATING CURVES