

TUNG-SOL

PRODUCT BULLETIN

INDUSTRIAL ELECTRON TUBE TYPE 8150

FEBRUARY, 1963

BEAM POWER VHF PENTODE

Description—The 8150 is a beam power amplifier pentode in the double-ended T-12 compactron design. It is intended for use as an RF power amplifier and oscillator at frequencies up to 175 megacycles, with a maximum plate dissipation rating of 35 watts under ICAS conditions. It features a center-tapped heater so it may be operated from either a 3-cell or a 6-cell storage battery system.

A similar tube in a single-ended design is registered as type 8149.



MECHANICAL DATA

Cathode	Coated Unipotential
Outline	JEDEC 12-86
Maximum Diameter	1.563 Inches
Maximum Seated Height	3.000 Inches
Maximum Overall Length	3.375 Inches
Bulb	T-12 Glass
Base — Button 12 Pin	JEDEC E12-74
Cap — Small	JEDEC C 1-1

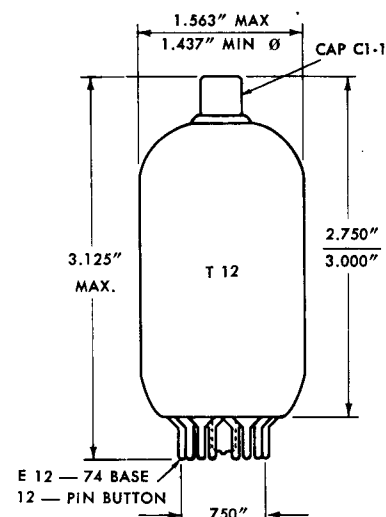
Pin Connections

Pin 1 — Heater End B
Pin 2 — Cathode, Grid 3, Internal Shield
Pin 3 — Internal Connection, Do Not Use
Pin 4 — Cathode, Grid 3, Internal Shield
Pin 5 — Grid 2
Pin 6 — Cathode, Grid 3, Internal Shield

Basing Diagram JEDEC 12DU

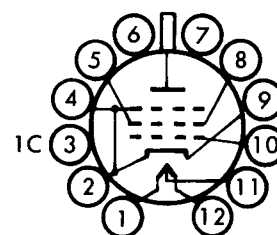
Pin 7 — No Connection
Pin 8 — Grid 2
Pin 9 — Cathode, grid 3, Internal Shield
Pin 10 — Grid 1
Pin 11 — Heater Center Tap
Pin 12 — Heater End A
Top Cap — Plate

Mounting Position Any



CIRCLE OF PIN CENTERS
Ø MINIMUM DIAMETER DOES NOT APPLY IN THE AREA OF THE SEAL.

OUTLINE DRAWING



BASING DIAGRAM BOTTOM VIEW

TYPE 8150

ELECTRICAL DATA

Heater Characteristics and Ratings — Absolute Maximum System — See EIA Standard RS-239

Supply Connected to Pins	1 and 12	11 and 1 + 12
Average Values — Voltage	13.0	6.5 Volts
Average Values — Current	0.60	1.20 Amps
Limits of Applied Heater Voltage	11.0-15.0	5.5-7.5 Volts
Maximum Heater-Cathode Voltage Either Polarity		135 Volts

Direct Interelectrode Capacitances — Without External Shield

Grid 1 to Plate: g1 to p	0.2 pf
Input: g1 to (h + k + g2 + g3 + i.s)	13.0 pf
Output: p to (h + k + g2 + g3 + i.s)	6.5 pf

Average Static Characteristics

Plate Voltage	200 Volts
Grid 2 Voltage	200 Volts
Plate Current	100 mA
Transconductance	7500 μ mhos
Amplification Factor, Triode Connected	4.5

Maximum Ratings — Absolute Maximum System — See EIA Standard RS-239 ICAS — Intermittent Commercial and Amateur Service

RF Power Amplifier and Oscillator — Class C Telegraphy

RF Power Amplifier — Class C FM Telephony

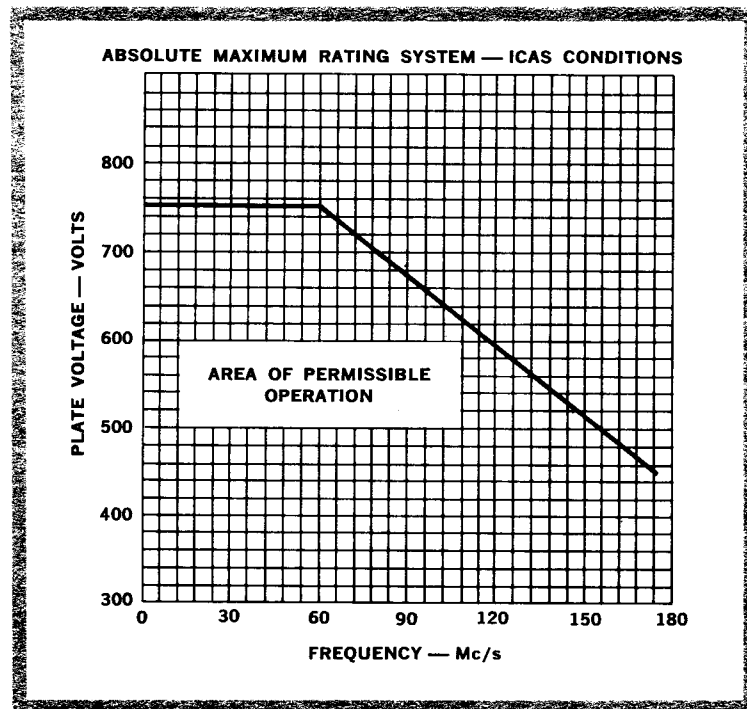
For Frequencies Up to	60	175 Mc/s
Plate Voltage-DC	750	450 Volts
Grid 2 Voltage	250	250 Volts
Grid 1 Voltage-DC	-150	-150 Volts
Cathode Current-DC	220	220 mA
Plate Dissipation	35	35 Watts
Grid 2 Dissipation	3.3	3.3 Watts
Bulb Temperature	240	240 °C

For Voltage vs Frequency Rating Chart See Page 3.

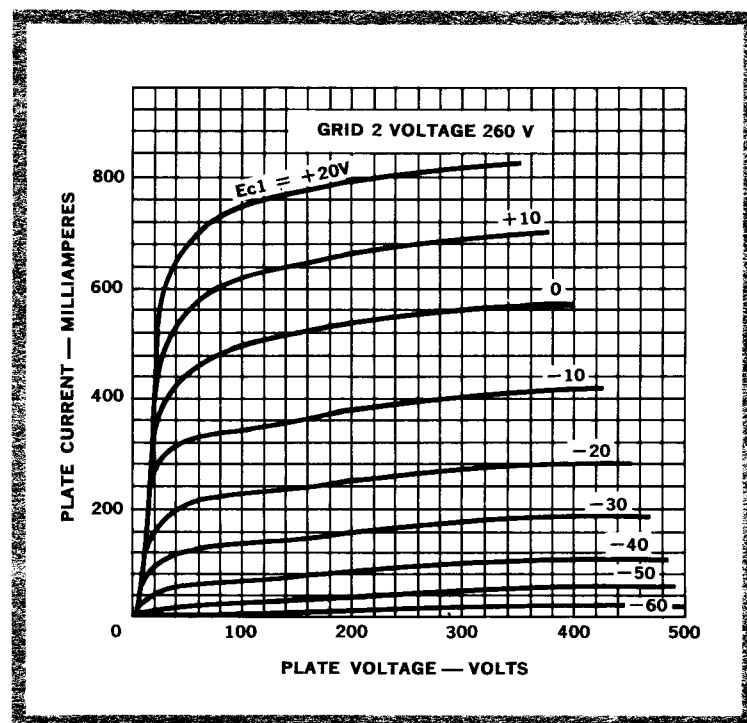
Typical Operation — Class C Amplifier at 175 Mc/s

Plate Voltage	380 Volts
Grid 2 Supply Voltage	380 Volts
Grid 2 Dropping Resistor	10k Ohms
Grid 1 Voltage	-78 Volts
from Grid 1 Resistor	27k Ohms
Additional Fixed Bias	-24 Volts
Peak R.F. Grid 1 Voltage	120 Volts
Plate Current	180 mA
Grid 2 Current	12 mA
Grid 1 Current	2.0 mA
Driving Power — Approx.	2 Watts
Power Output	40 Watts

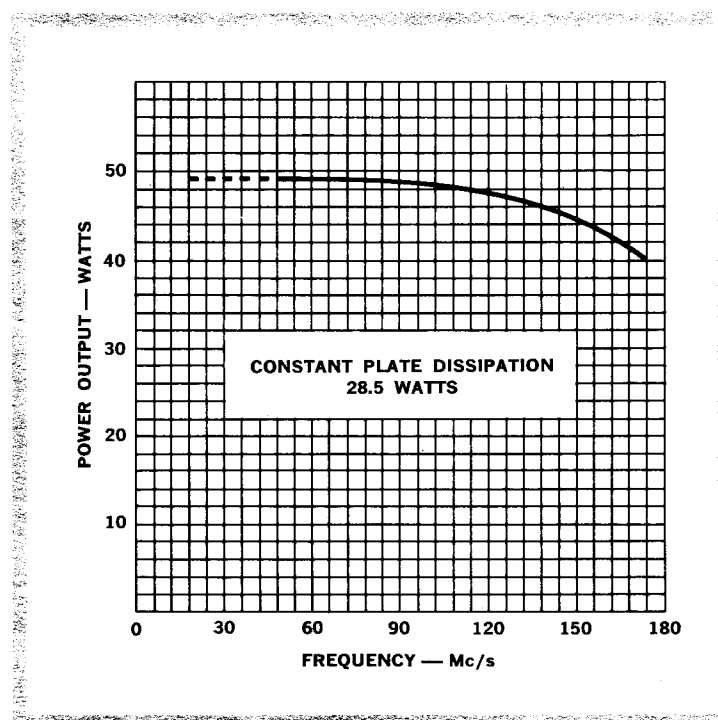
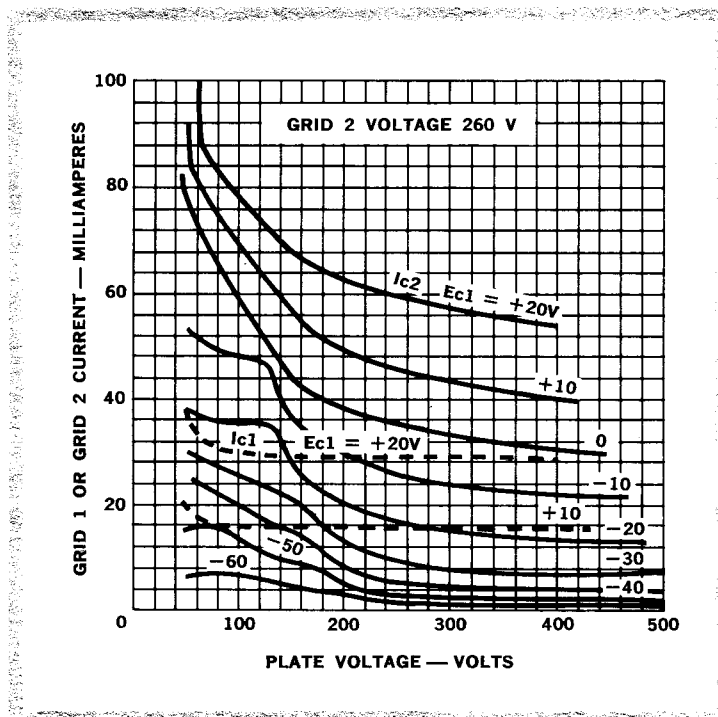
RATING CHART



CHARACTERISTIC CURVES



TYPE 8150



TUNG-SOL ELECTRIC INC., ONE SUMMER AVENUE, NEWARK 4, NEW JERSEY