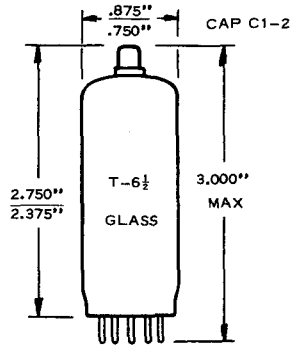
TUNG-SOL

BEAM PENTODE

MINIATURE TYPE

OUTLINE DRAWING

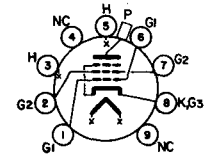


BUTTON 9 PIN MINIATURE
BASE E9-1
GOLD PLATED PINS

FOR
PULSE AND HIGH VOLTAGE
REGULATOR SERVICE

TUNGSTEN HEATER
ANY MOUNTING POSITION

BASING DIAGRAM
JEDEC 9NE



BOTTOM VIEW

THE 7757 IS A HIGH PERVEANCE BEAM POWER AMPLIFIER IN THE 9 PIN MINIATURE HARD GLASS CONSTRUCTION. IT IS DESIGNED FOR HIGH VOLTAGE PULSE MODULATOR AND DEFLECTION AMPLIFIER USE IN AIRCRAFT, MILITARY AND INDUSTRIAL APPLICATIONS WHERE RELIABLE OPERATIONS AT HIGH VOLTAGES DURING SHOCK AND VIBRATION, AND FREEDOM FROM INTERNAL ARCING ARE IMPORTANT.

HEATER CHARACTERISTICS AND RATINGS

ABSOLUTE MAXIMUM VALUES – SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS	6.3 VOLTS	600	mA
LIMITS OF APPLIED VOLTAGE		6.3 ± 0.3	VOLTS
HEATER-CATHODE VOLTAGE			
HEATER NEGATIVE WITH RESPECT TO CATHODE		450	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE		450	VOLTS

MAXIMUM RATINGS

ABSOLUTE MAXIMUM VALUES – SEE EIA STANDARD RS-239

DC PLATE VOLTAGE	3,000	VOLTS
DC GRID 2 VOLTAGE	700	VOLTS
PLATE DISSIPATION	14	WATTS
GRID 2 DISSIPATION	3	WATTS
DC CATHODE CURRENT	75	mA
PEAK CATHODE CURRENT –PULSE	2	AMPS
GRID RESISTANCE	0.1	MEGOHM
AVERAGE CATHODE WARM-UP TIME	45	SECONDS

CONTINUED ON FOLLOWING PAGE

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TYPICAL OPERATION CONDITIONS AND CHARACTERISTICS

PLATE VOLTAGE	250	VOLTS
GRID 2 VOLTS	250	VOLTS
GRID 1 VOLTS	−12.5	VOLTS
PLATE CURRENT	45	mA
GRID 2 CURRENT	3.5	mA
TRANSCONDUCTANCE	4,100	μMHOS

TYPICAL OPERATING CONDITIONS – PULSE ⊕

⊕ SEE RATING CHART

PLATE VOLTAGE	750	VOLTS
GRID 2 VOLTAGE	325	VOLTS
GRID 1 BIAS VOLTAGE	−100	VOLTS
PULSE VOLTAGE – e_{gk}	+100	VOLTS
PULSE PLATE CURRENT	.75	AMP.

SPECIAL TESTS AND RATINGS

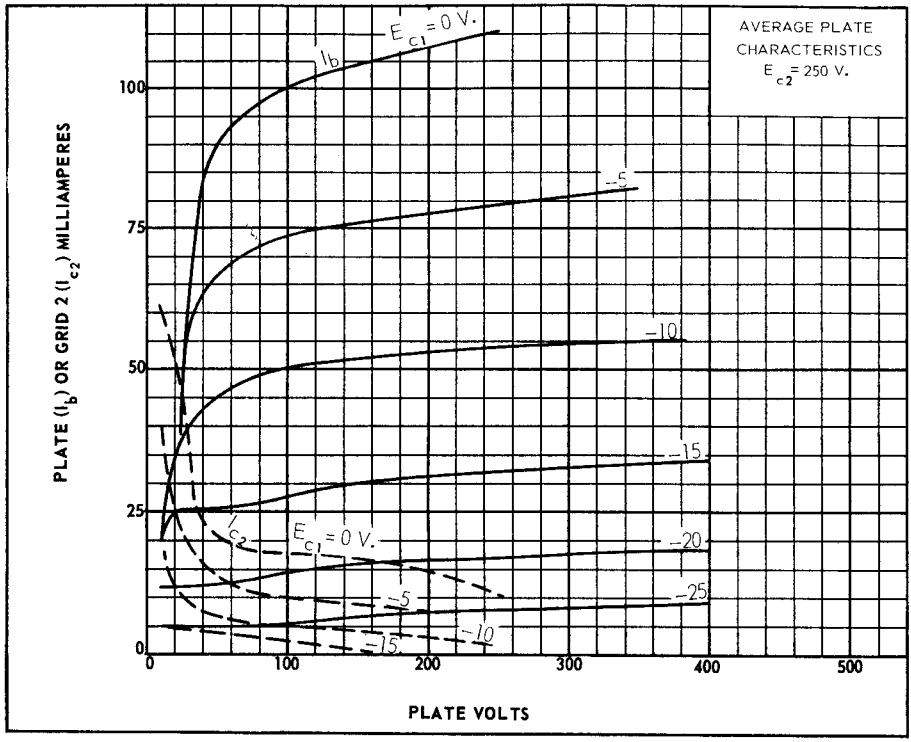
ALTITUDE	70,000	FT.
BULB TEMPERATURE	300	°C
IMPACT SHOCK	500	G
VIBRATIONAL ACCELATION	50	G
HEATER CYCLING LIFE		
LIFE		
FATIGUE		
GLASS STRAIN		

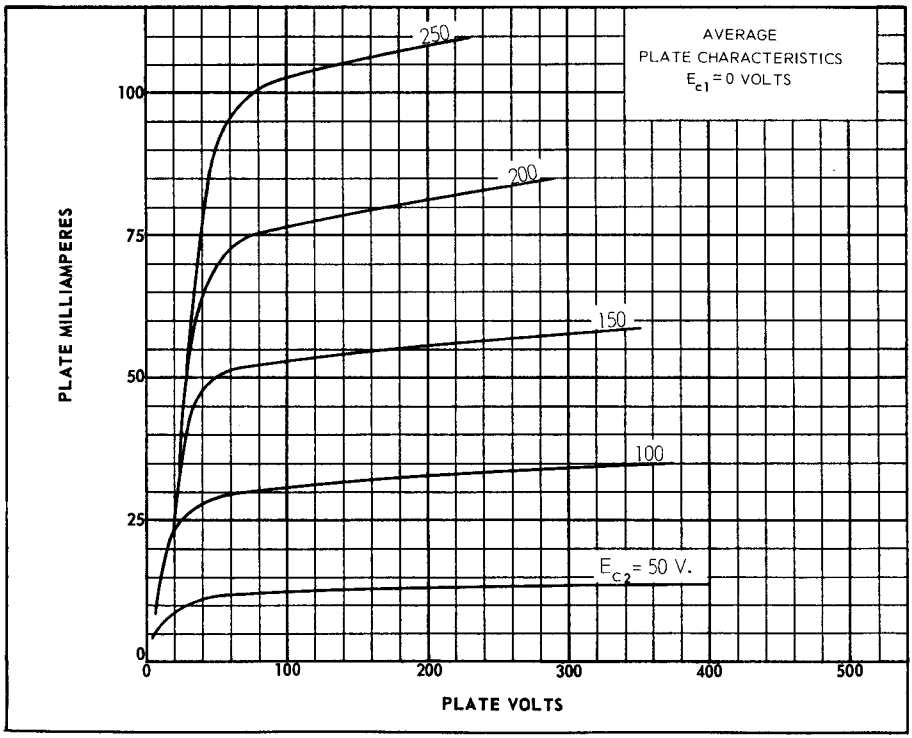
APPLICATION NOTES

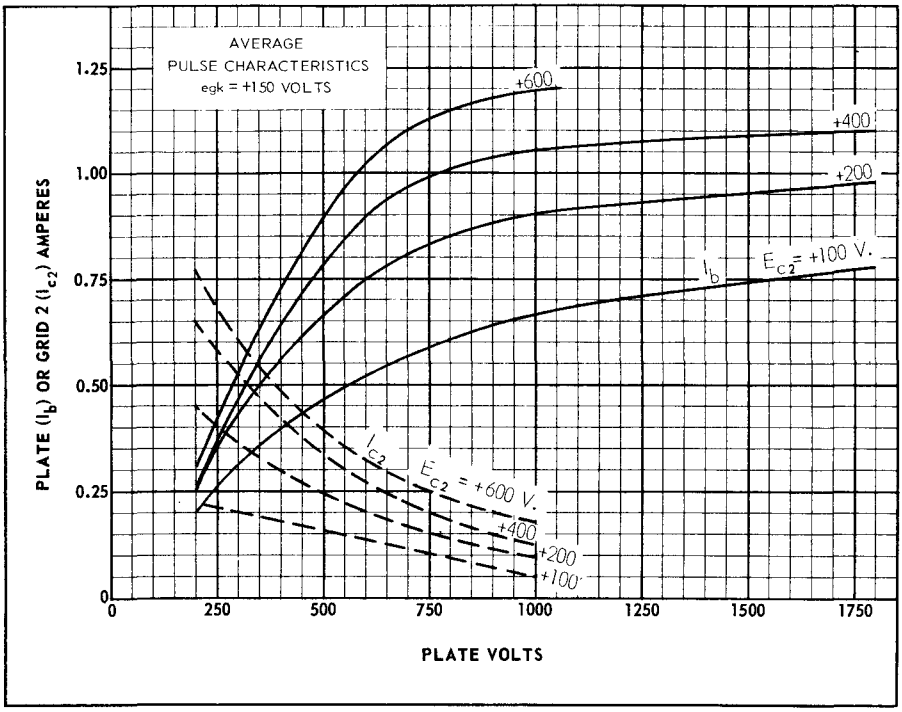
SPECIAL ATTENTION SHOULD BE GIVEN TO THE TEMPERATURES AT WHICH THE TUBES ARE TO BE OPERATED. RELIABILITY WILL BE SERIOUSLY IMPAIRED IF MAXIMUM BULB TEMPERATURE IS EXCEEDED. THE LIFE EXPECTANCY WILL BE REDUCED IF CONDITIONS OTHER THAN THOSE SPECIFIED FOR LIFE TEST ARE IMPOSED ON THE TUBE AND WILL BE REDUCED APPRECIABLY IF ABSOLUTE MAXIMUM RATINGS ARE EXCEEDED. BOTH RELIABILITY AND PERFORMANCE WILL BE JEOPARDIZED IF FILAMENT VOLTAGE RATINGS ARE EXCEEDED. LIFE AND RELIABILITY OF PERFORMANCE ARE DIRECTLY RELATED TO THE DEGREE THAT REGULATION OF THE HEATER VOLTAGE IS MAINTAINED AT ITS CENTER RATED VALUE.

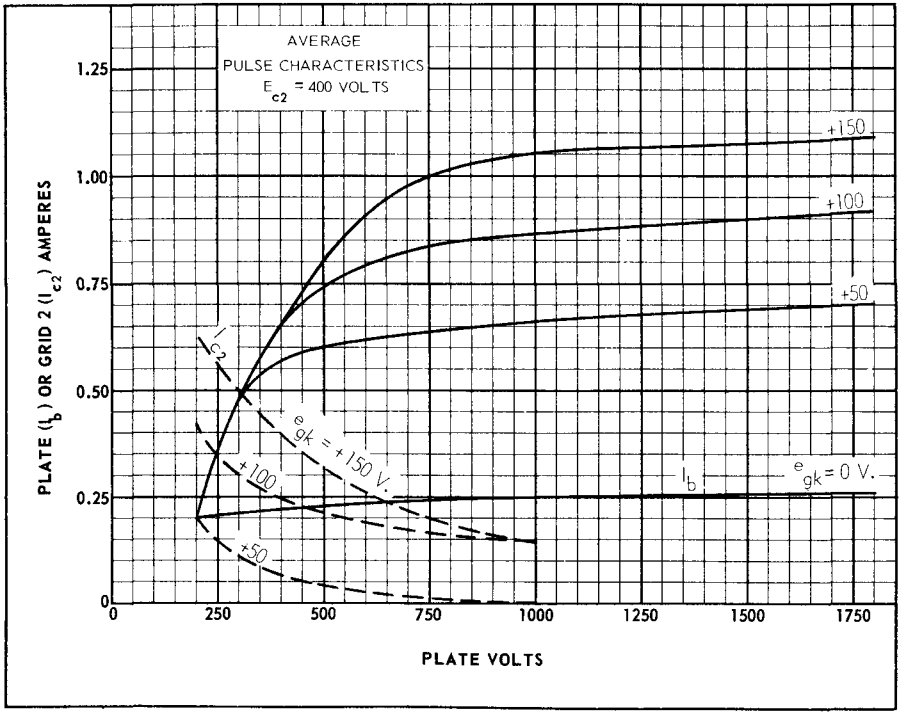
THIS TUBE IS CONSTRUCTED USING NONEX GLASS AND THUS CAN WITHSTAND HIGHER AMBIENT TEMPERATURES IN OPERATION. HOWEVER, THE BULB TEMPERATURE SHOULD NEVER EXCEED 300°C AT ITS HOTTEST POINT AND COOLING SHOULD BE EMPLOYED IF NECESSITATED BY THE ADDITIVE EFFECTS OF OPERATION AT HIGH ALTITUDES AND HIGH DISSIPATION SIMULTANEOUSLY OR BY OTHER SOURCES OF HEAT IN THE EQUIPMENT.

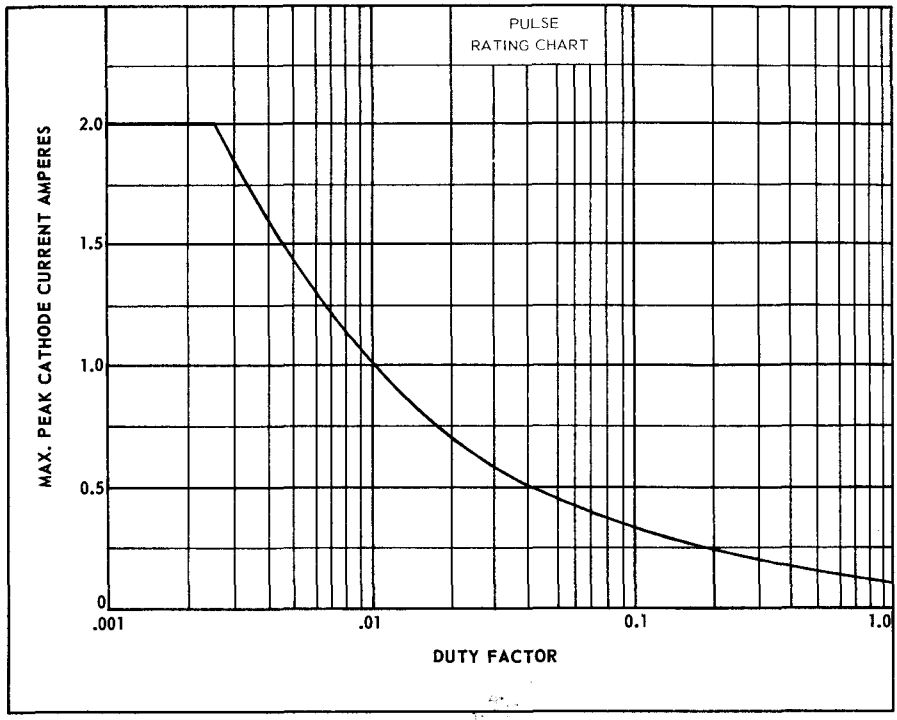
THE PLATE VOLTAGE RATING AND HIGH-PERVEANCE OF THE 7757 MAKE IT READILY ADAPTABLE TO VARIED PULSE APPLICATIONS. IN ORDER TO INSURE MAXIMUM RELIABILITY IN PULSE SERVICE THE PEAK CATHODE CURRENT SHOULD NOT EXCEED THE VALUE SHOWN IN PULSE RATING CHART FOR THE REQUIRED DUTY FACTOR.

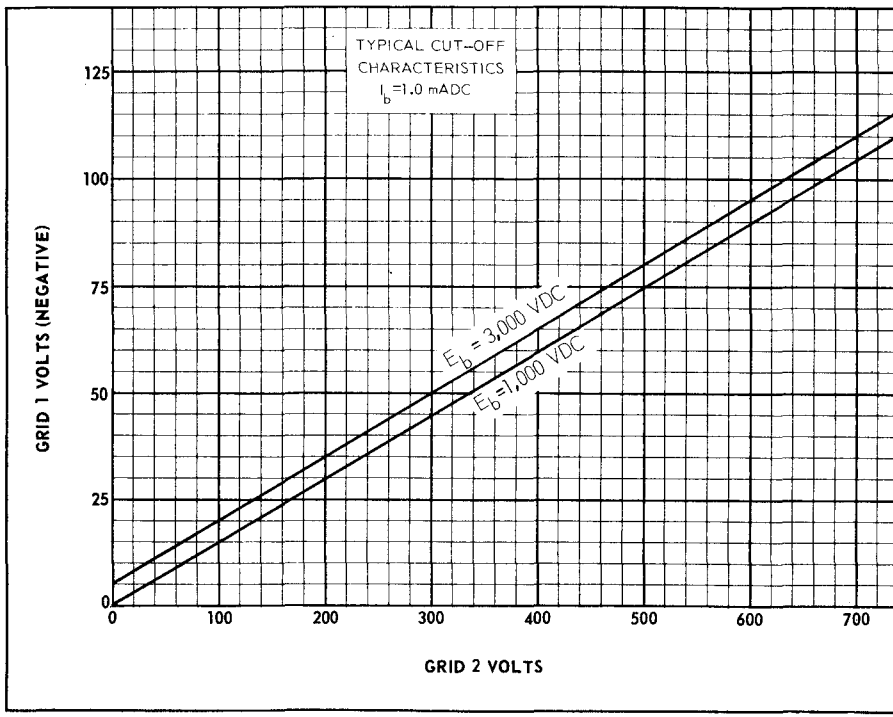

AVERAGE PLATE
CHARACTERISTICS
E_{c2} = 250 V.
E_{c1} = 0 V.
I_b
-5
-10
-15
-20
-25
I_{c2}
E_{c1} = 0 V.
-5
-10
-15
PLATE (I_b) OR GRID 2 (I_{c2}) MILLIAMPERES
PLATE VOLTS
0
25
50
75
100
0
100
200
300
400
500


AVERAGE
PLATE CHARACTERISTICS
E_{c1} = 0 VOLTS
250
200
150
100
E_{c2} = 50 V.
PLATE MILLIAMPERES
PLATE VOLTS
0
25
50
75
100
0
100
200
300
400
500


AVERAGE
PULSE CHARACTERISTICS
egk = +150 VOLTS
+600
+400
+200
I_b
E_{c2} = +100 V.
I_{c2}
E_{c2} = +600 V.
+400
+200
+100
PLATE (I_b) OR GRID 2 (I_{c2}) AMPERES
1.25
1.00
0.75
0.50
0.25
0
250
500
750
1000
1250
1500
1750
PLATE VOLTS


AVERAGE
PULSE CHARACTERISTICS
E_{c2} = 400 VOLTS
+150
+100
+50
I_{c2}
e_{gk} = +150 V.
+100
+50
I_b
e_{gk} = 0 V.
PLATE (I_b) OR GRID 2 (I_{c2}) AMPERES
1.25
1.00
0.75
0.50
0.25
0
250
500
750
1000
1250
1500
1750
PLATE VOLTS





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