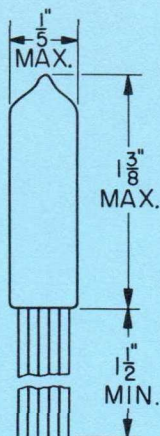


TUNG-SOL

SHIELD GRID THYRATRON

SUBMINIATURE TYPE



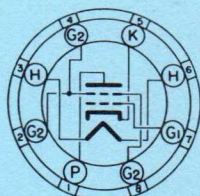
GLASS BULB

HEATER

6.3±5% VOLTS 0.150 AMP.

AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW

SUBMINIATURE BUTTON
8 FLEXIBLE LEADS
.017" TINNED

SUBMINIATURE TYPE 5643 IS A XENON FILLED, FOUR ELECTRODE THYRATRON WITH NEGATIVE CONTROL CHARACTERISTICS. IT IS SIMILAR IN CHARACTERISTICS TO THE MINIATURE TYPE 5696. THE 5643 IS SUITABLE FOR USE AS A SWITCHING TUBE, COUNTER, OR GRID CONTROLLED RECTIFIER. BECAUSE OF ITS SHIELD GRID CONSTRUCTION, THE INPUT WILL WORK DIRECTLY FROM A HIGH IMPEDANCE SOURCE SUCH AS A VACUUM PHOTOTUBE OR A CADMIUM SULPHIDE PHOTO CELL. THE EFFECTIVE DIODE TO CONTROL GRID CAPACITY MAY BE REDUCED BY CONNECTING LEADS 2, 4 AND 8 TO LEAD 5, AND CONNECTING THE GRID RESISTOR DIRECTLY TO THE SOCKET TERMINALS.

THIS TUBE IS PARTICULARLY SUITED FOR USE IN COMPACT AND PORTABLE EQUIPMENT, BECAUSE OF ITS SMALL SIZE AND LIGHT WEIGHT.

ELECTRICAL DATA

HEATER VOLTAGE	6.3±5%	VOLTS
HEATER CURRENT ($E_f=6.3$ VOLTS)	0.150	AMP.
MINIMUM CATHODE HEATING TIME	10.	SECONDS
ANODE TO CONTROL GRID CAPACITANCE	0.084	μf
CONTROL GRID TO CATHODE (& SHIELD GRID) CAPACITANCE	1.33	μf
ANODE TO CATHODE (& SHIELD GRID) CAPACITANCE	1.27	μf
DE-IONIZATION TIME, APPROX. (SHIELD TIED TO CATHODE)		
WITH GRID VOLTS = -100, GRID RES. = 1000 Ω		
ANODE VOLTS = 500, ANODE CUR. = .016 AMPS	15	μ SECONDS
WITH GRID VOLTS = -10, GRID RES. = 1000 Ω		
ANODE VOLTS = 500, ANODE CUR. = .016 AMPS.	25	μ SECONDS
ANODE VOLTAGE DROP, APPROX.	12.5	VOLTS
CRITICAL GRID CURRENT (AT $E_{bb}=350$ V. RMS)	0.5	μ AMPS

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TUNG-SOL

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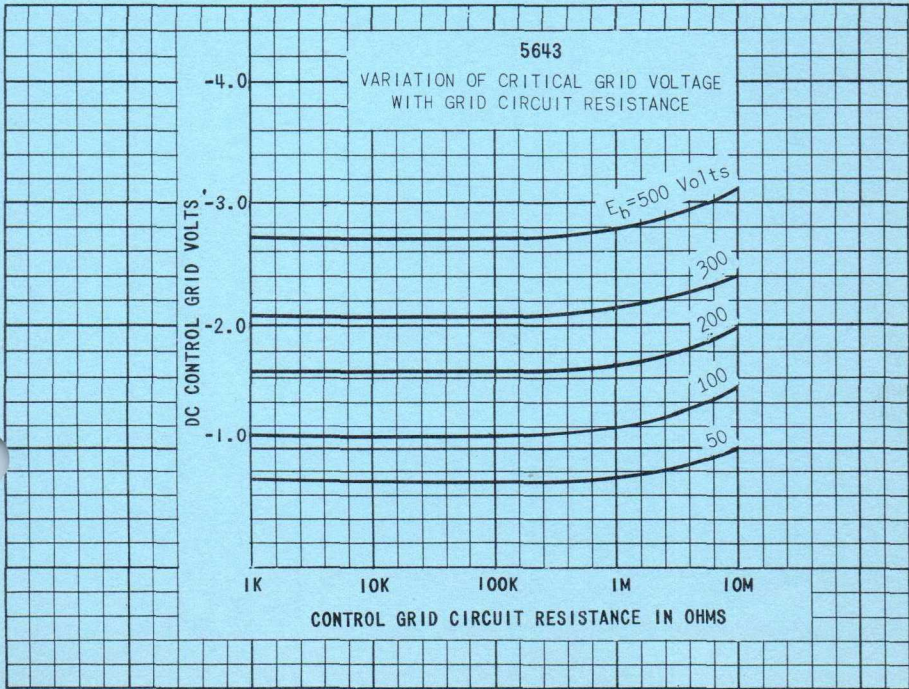
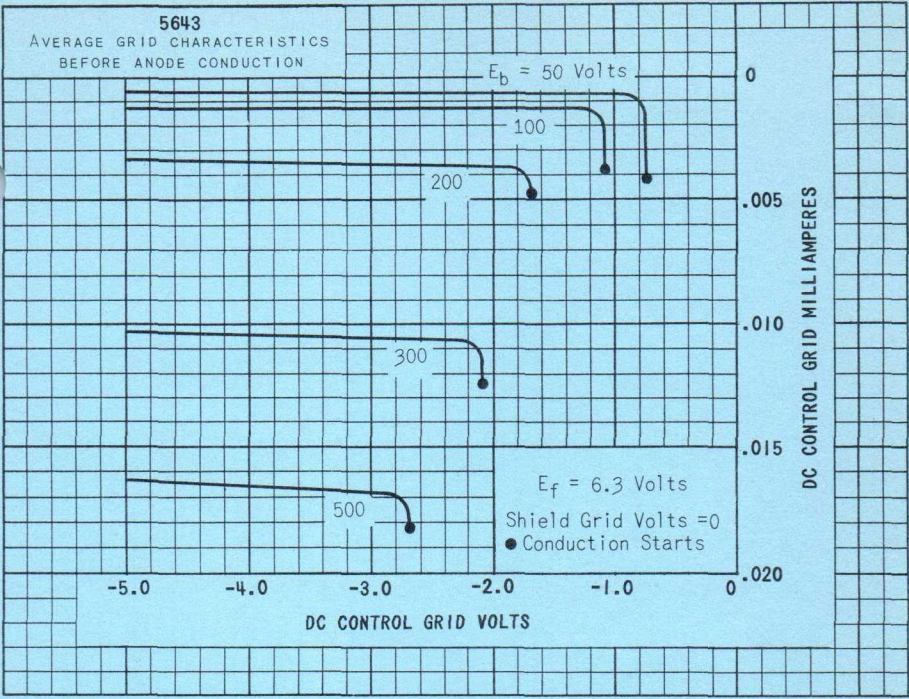
MECHANICAL DATA

MAXIMUM SHOCK RATING	450	G
MOUNTING POSITION	ANY	
MAXIMUM OVERALL LENGTH	SEE OUTLINE	
MAXIMUM SEATED LENGTH	1 3/8	INCHES
MAXIMUM DIAMETER	.40	INCHES
BULB	T-3	
BASE	SUBMINIATURE BUTTON	
	8 PIN LONG LEADS	
WEIGHT (APPROX.)	0.12	OUNCES

RATINGS

ABSOLUTE VALUES

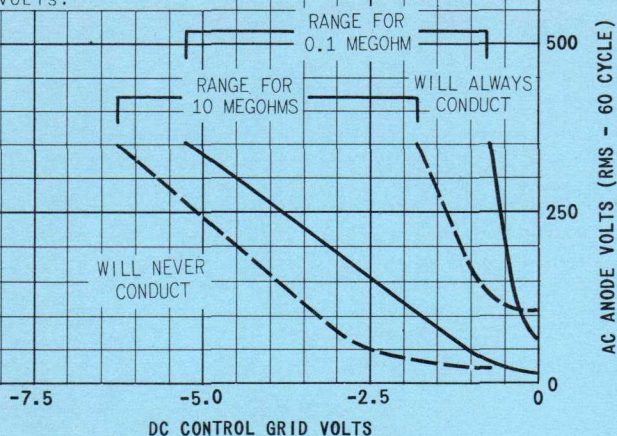
MAXIMUM PEAK ANODE VOLTAGE		
INVERSE	500	VOLTS
FORWARD	500	VOLTS
MAXIMUM CATHODE CURRENT		
PEAK	100	MA.
AVERAGE	16	MA.
SURGE (MAX. DURATION 0.1 SECOND)	1.0	AMP.
MAXIMUM AVERAGE TIME	15	SECONDS
MAXIMUM NEGATIVE CONTROL GRID VOLTAGE		
BEFORE CONDUCTION	-200	VOLTS
DURING CONDUCTION	-10	VOLTS
MAXIMUM NEGATIVE SHIELD GRID VOLTAGE		
BEFORE CONDUCTION	-100	VOLTS
DURING CONDUCTION	-10	VOLTS
(THIS SHIELD GRID SHOULD NOT BE USED FOR CONTROL PURPOSES).		
MAXIMUM HEATER CATHODE VOLTAGE		
HEATER NEGATIVE	-100	VOLTS
HEATER POSITIVE	25	VOLTS
AMBIENT TEMPERATURE LIMITS	-55 TO +90	°C
MAXIMUM CONTROL GRID (G1) CIRCUIT RESISTANCE	10	MEGOHMS
ALTITUDE FOR FULL RATINGS	60 000	FEET



RANGES SHOWN ARE FOR TWO VALUES OF GRID RESISTOR, 0.1 MEGOHM AND 10 MEGOHM, AND TAKE INTO ACCOUNT INITIAL DIFFERENCES BETWEEN INDIVIDUAL TUBES AND SUBSEQUENT DIFFERENCES DURING TUBE LIFE FOR A HEATER VOLTAGE RANGE OF 6.0 TO 6.6 VOLTS.

5643

OPERATIONAL RANGE OF CRITICAL GRID VOLTAGE



5643

AVERAGE GRID CHARACTERISTICS
DURING ANODE CONDUCTION

$R_g = 1000 \text{ Ohms}$
 $E_f = 6.3 \text{ Volts}$

Shield Grid Volts = 0

