

Bulletin No. 1050

6714

October 15, 1963

(BX-4001) Low Voltage Shielded BEAM-X® Switch

The 6714 (BX-4001) BEAM-X® Switch is a 10-position, high vacuum electronic switching device. It is specifically designed and tested for use in low voltage, multi-position electronic switching circuits. It has frequency capabilities in excess of 1 mc and its low voltage characteristics are compatible with standard transistor driving circuitry. In addition, it features magnetically shielded construction for applications where space conservation is important.

ELECTRICAL CHARACTERISTICS

RATINGS ABSOLUTE MAX.	VALUE	NOTES
Target Voltage (Et)	300 Vdc	
Spade Voltage (Es)	100 Vdc	
Grid Voltage (Ec)	200 Vdc	
Shield Grid Voltage (Esg)	200 Vdc	
Heater - Cathode Voltage (Ehk)	±100 Vdc	
Cathode Current (Ik)	10 ma.	
Individual Target Dissipation (P/ta)	1 W	
Heater Voltage (Ef)	6.3 ±10% V	
Switching Speed (F)	2 MC	1

MECHANICAL CHARACTERISTICS

Overall Length	3.125 in. max.	
Seated Height	2.875 in. max.	
Diameter	1.270 in. max.	
Weight Total	2.75 oz.	
Mounting Position	Any	5
Outline	See Figure 4	
Envelope Connection	See Figures 2, 3.	

TEST CONDITIONS AND TEST LIMITS

The BEAM-X® Switch, Type 6714 is tested in a circuit similar to Figure 5. These tests are designed to demonstrate current uniformity from position to position within specified limits and operating stability throughout the frequency range at high and low voltage limits.

TEST CONDITIONS	VALUE	NOTES
Spade Resistance (Rs)	270 ¹ K ohm.	
Target Load Resistance (Rt)	10 K ohm	
Target Voltage (Et)	Equals Es	
Shield Grid Voltage (Esg)	Equals Es	
Grid Bias Voltage (Ec)	26 V.	
Grid Switching Voltage (Esig)	-24V	3
Heater Voltage (Ef)	6.3 V	
Test Frequency (f)	Push Button and 10 Kc	1, 3

TEST LIMITS	VALUE	NOTES
Spade Voltage (Es)	30 ±10% V.	
Individual Target Current (It)	1.000 ±30% ma	2
Heater Current (If)	150 ±10% ma	4
Firing Voltage (Eco)	40 V.	6

NOTES:

1. The tube is tested at pushbutton and 10 KC rates but may operate at rates up to 2 MC under suitable operating conditions.
2. When tube is operated in test circuit at Spade Voltage = 30 V.
3. For higher frequency operation, a greater pulse amplitude is required.
4. When filament is operated at 6.3 V.
5. Tubes may be mounted side by side (no minimum spacing). To avoid possible operational changes in tube characteristics, tubes should not be mounted on a ferrous chassis.
6. Firing Voltage (DC Cutoff Voltage) is that voltage between cathode and spade buss above which erratic electron beam formation will occur.

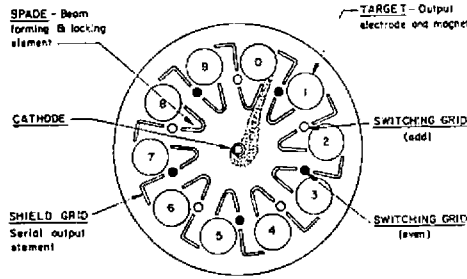


Fig. 1. CROSS SECTION

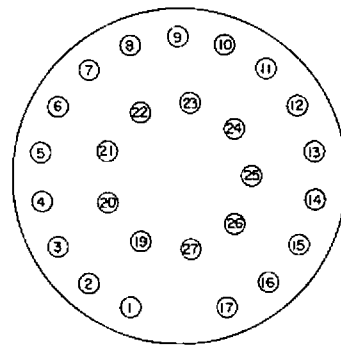


FIG. 2. PIN NUMBERING DIAGRAM

Pin No.	Connection	Pin No.	Connection
1	Spade-0	14	Spade-2
2	Target-9	15	Target-1
3	Target-8	16	Grid Even
4	Grid Odd	17	Target-0
5	Target-7	19	Spade-9
6	Spade-7	20	Spade-8
7	Target-6	21	Heater
8	Target-5	22	Spade-6
9	Spade-5	23	Spade-4
10	Target-4	24	Spade-3
11	Shield Grid	25	Heater
12	Target-3	26	Spade-1
13	Target-2	27	Cathode

FIG. 3. PIN CONNECTION CHART

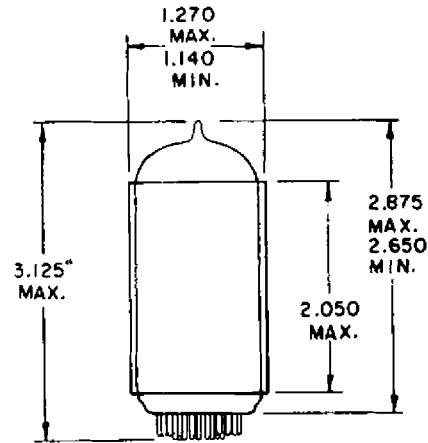


FIG. 4. OUTLINE DRAWING

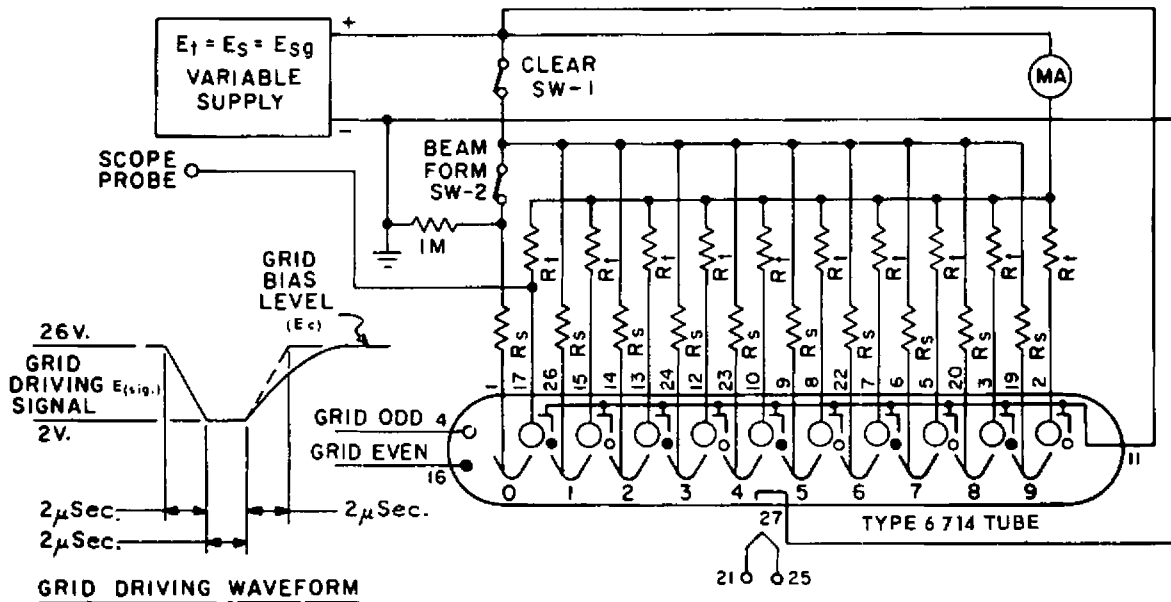


FIG. 5 TEST CIRCUIT