



NELSON

VE1093B S Band High Power Klystron Tube

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1. Introduction

VE1093B is a S band pulse klystron tube. It is designed for use as the final power-amplified component in the aircraft control radar system and weather radar system.

2. Structure specifications

- 2.1 Structure: Metal-ceramic structure with six cavities
- 2.2 Tuning method: Mechanical tuning cavity with counter identification
- 2.3 Focus method: Solenoid focus
- 2.4 Input junction: N type 50F Coaxial line (the same as UG-21/D/U N type coaxial junction)
- 2.5 Output junction: Waveguide with BJ32 flange. (the same as UG-1725/U waveguide flange)
- 2.6 Cooling way: Forced cooling wind
- 2.7 Mounting position: Any
- 2.8 Weight: $G \leq 46\text{kg}$
- 2.9 Outline and wiring: See Appendix A1、 A2、 A3

3 .Technical performance

3.1 Test conditions

Parameter Name	Filament Heater Current	Filament Heater Voltage	Cathode Voltage	Beam Duty	RF Duty	RF Pulse Width
Symbol	I_f	U_f	U_k	D_e	D_{rf}	τ_{rf}
Unit	A	V	kV			μs
Numerical & Accuracy	Name plate value $\pm 3\%$	Name plate value $\pm 3\%$	Name plate value $\pm 3\%$	0.002	0.0011	2.1 \pm 0.1
Parameter Name	Drive Power	Load SWR	Cooling Air Flow	Frequency	Solenoid Current	X-Ray
Symbol	P_{in}		Q	f	I_B	
Unit	W		m ³ /min	GHz	A	mR/hr
Numerical & Accuracy	Name plate value $\pm 0.5\%$	1.2:1 max	3.5	2.7 to 2.9	Name plate value $\pm 2\%$	2(30cm far from the tube)

3.2 . Parameter

Items	Parameter Name	Conditions	Symbol	Scope		
				Min	Max	Unit
1	Dimensions	Outline drawings				
2	Standing time		T		48	hr
	Vacuum check	15 minutes later, to read the vacion pump current in no working voltage condition	I_{Ti}		2	μA
3	Electromagnetic solenoid current		I_B	20	25	A
4	Electromagnetic		U_B		100	V _{Dc}

2

	solenoid voltage					
5	Filament heater current		I_f	20	32	A

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6	Filament heater voltage		U_f	5.5	7.0	V
7	Beam voltage		U_k	65	70	kV
8	Cathode pulse current	$U_k=70kV$	I_k	34	40	A
9	Output power	Test conditions	P_o	0.85	1	MW
10	Band width	Test conditions frequency band fluctuation 0.5dB	BW	15		MHz
11	X-Ray	Test conditions			2	mR/hr
		Test conditions (No drive power)			2	mR/hr
12	RF drive power	Test conditions			7.5	W
13	Nameplate					

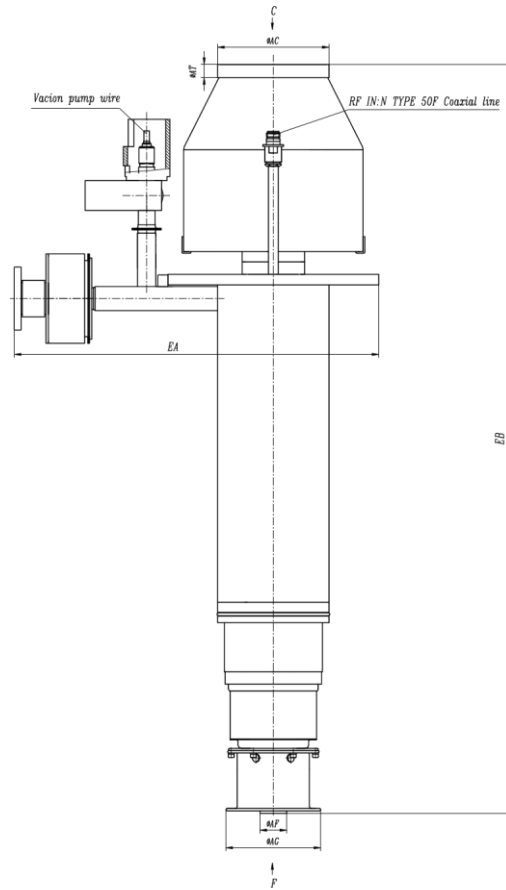


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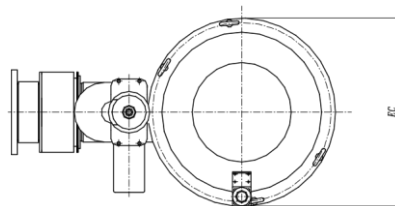
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Appendix A The outline and wiring drawing of VE1093B pulse klystron

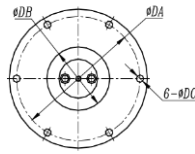
A1 The outline drawing of VE1093B pulse klystron see Dwg.1.



C direction



F direction

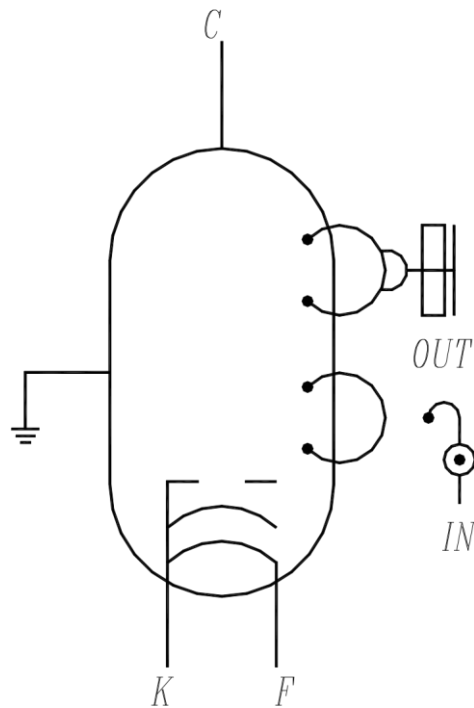


Unit: mm

Dimension code	dimensions		
	min	rating	max
AC	125	126	127
AF	31.5	32	32.5
AG	113	114	115
AT	15.5	16	16.5
DA	101	102	103
DB	51	52	53
DC	5.5	6	6.5
EA	437.5	438.5	439.5
EB	903.6	904.6	905.6
EC	253.4	253.7	254

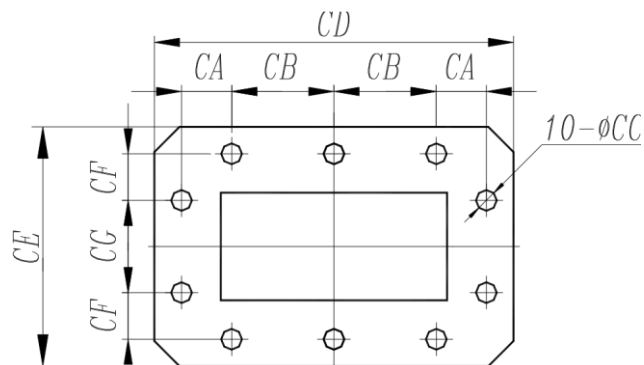
Dwg.1 The outline drawing of VE1093B pulse klystron

A2 The wiring diagram of VE1093B pulse klystron see Dwg. 2.



Dwg.2 The wiring diagram of VE1093B pulse klystron

A3: The waveguide flange's dimensions of VE1093B pulse klystron see Dwg. 3



Dwg. 3: The waveguide flange's dimensions of VE1093B pulse klystron



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The waveguide flange's dimensions of VE1093B pulse klystron

Unit: mm

Dimension Code	Dimensions		
	Min	Rating	Max
CA	15.98	16.08	16.18
CB	32.44	32.54	32.64
CC	6.5	6.6	6.7
CD	114.1	114.3	114.5
CE	75.8	76	76.2
CF	14.79	14.89	14.99
CG	29.26	29.36	29.46