TUBE TYPE MXT-14/1B24A

The ratings and tests of this product shall be in accordance with the applicable provisions of the latest issue of MIL-E-1 as amended by the conditions of this specification.

Description: Integral cavity, tunable, frequency range 8,490 to 9,600 Mc.

Absolute-Maximum Ratings:

Parameter:	Ii	Ebb(open circuit)	Alt.
Unit:	uAdc	Vdc	ft.
Maximum:	200	-1,000	10,000
Minimum:	65	-750	--

Ref.	Test	Conditions	Min.	Max.	Unit
	General				
3.1	Qualification:	Required for JAN Marking;	:---	---	---
3.6	Performance:		:---	---	---
4.5	Holding Period:		t:168	---	hr.
4.9.2	Dimensions:	Per attached Outline	:---	---	---
	Qualification Inspection (see note 1)				
4.18.1	Insertion Loss(1): (integral cavity)	F=8600Mc±0.1% to F=9500Mc±0.1%; See Note 2	Li:---	2.0	db
4.18.13.1	Loaded Q(1): (TR Tubes)	F=8600Mc±0.1% to F=9500Mc±0.1%; See Note 3	QL:160	350	---
4.18.14 and 4.18.14.1	Frequency-Temperature Effect:	F=9375Mc±0.1%; See Note 4	ΔF:---	-20	Mc

Ref.	Test	Conditions	Min.	Max.	Unit
	Acceptance Inspection, Part 1 (production) See Note 5				
4.18.1	Ignitor Ignition Time (TR tubes)	Ebb=-800Vdc; Ri=2.3 meg±1%;	t:---	5.0	sec.
4.18.2	Ignitor Voltage Drop (TR Tubes)	Ii=100uAdc;	Eid:325	450	Vdc
4.18.4.1	Insertion Loss (2): (Integral cavity)	F=8490Mc±0.1%;	Li:---	2.0	db
4.18.5.1	Ignitor Interaction: (Insertion Loss)	Ii=100uAdc;	ΔLi:---	0.2	db
4.18.6	Tuning Range: (TR tubes)	F=8490 Mc min.; F=9600 Mc min.;	: 5	---turns	
4.18.9	Leakage Power: (TR Tubes)	F=9375Mc±0.5%; po=10kw; tp=0.5us; prr=1000; Ii=100uAdc; T=25±5°C;	p:---	30	mw
4.18.17.1	Temperature cycling (TR, ATR, and pre-TR tubes)		:---	---	---
	Acceptance Inspection Part 2 (Design)	AQL = 6.5 Inspection Level = L6			
4.9.6.2	Glass Envelope Strain:		:---	---	---
4.9.19.2 and 4.18.33	High Frequency Vibration (1):		:---	---	---
4.18.3	Ignitor Oscillation (TR tubes)		Ii:---	60	uAdc
4.18.4.1	Insertion loss (3); (integral cavity)	F=9000Mc±0.1%;	Li:---	2.0	db
		F=9375Mc±0.1%;	Li:---	2.0	db
		F=9600Mc±0.1%;	Li:---	2.0	db

Ref.	Test	Conditions	Min.	Max.	Unit
	Acceptance Inspection, part 2 (Design) con't:				
4.18.8	Ignitor-current-Temperature Drift (TR Tubes):	Ii=80uAdc;	ΔIi:---	30	%
4.18.13.1	Loaded Q(2): (TR Tubes)	F=8490Mc±0.1%; F=9600Mc±0.1%;	QL:160	350	---
4.18.15.1	Recovery Time (Constant attenuation) (TR Tubes):	po=10kw; tp=0.5us; Ii=100uAdc; F=9375±0.1%;	tp:---	4.0	us
4.18.16	Pressure Operation:	Pressure-45 psia;	:---	---	---
4.18.32	Frequency-Vibration effect(2):	F=9375Mc±0.1%; G=2; t=12hr(see note 6)	ΔF:---	±3	Mc
	Acceptance Inspection, part 3 (Life)				
4.11 and 4.11.3.2	Life Test:	F=9375Mc±0.2%; po=30kw min.; tp=1.0us; prr=1000; Group B Ebb=-800Vdc; Ri=23. Meg; t=500 hr.min(see note 7)	:---	---	---
4.11.4	Life Test End Points:	Leakage Power;	p:---	30	mw
		Insertion Loss:	Li:---	2.0	db
		Ignitor Interaction:	ΔLi:---	0.5	db
		Ignitor Voltage Drop:	Eid:---	650	Vdc
		High Frequency Vibration:	:---	---	---
		Recovery Time:	t:---	6	us

Ref.	Test	Conditions	Min.	Max.	Unit
	Acceptance Inspection Part 3 (Life) con't:				
4.18.17.2	Temperature-cycling 10 cycles min; Life Test End Points (TR Tubes):		:---	---	---
4.9.18 and 4.9.18.1.9	Container Drop:	Required;			
5.	Preparation for delivery	(See note 8)			

Notes:

Note 1: All tests listed hereon shall be performed during qualification inspection; however, these three tests are normally performed during qualification inspection only.

Note 2: The insertion loss shall be measured at intervals of 100 Mc of frequency. At these intervals the loss shall be within the limits specified.

Note 3: The loaded Q shall be measured at intervals of 100 Mc of frequency. At those frequencies the loaded Q shall be within the limits specified.

Note 4: The frequency drift shall be measured with no adjustment to the tuning mechanism.

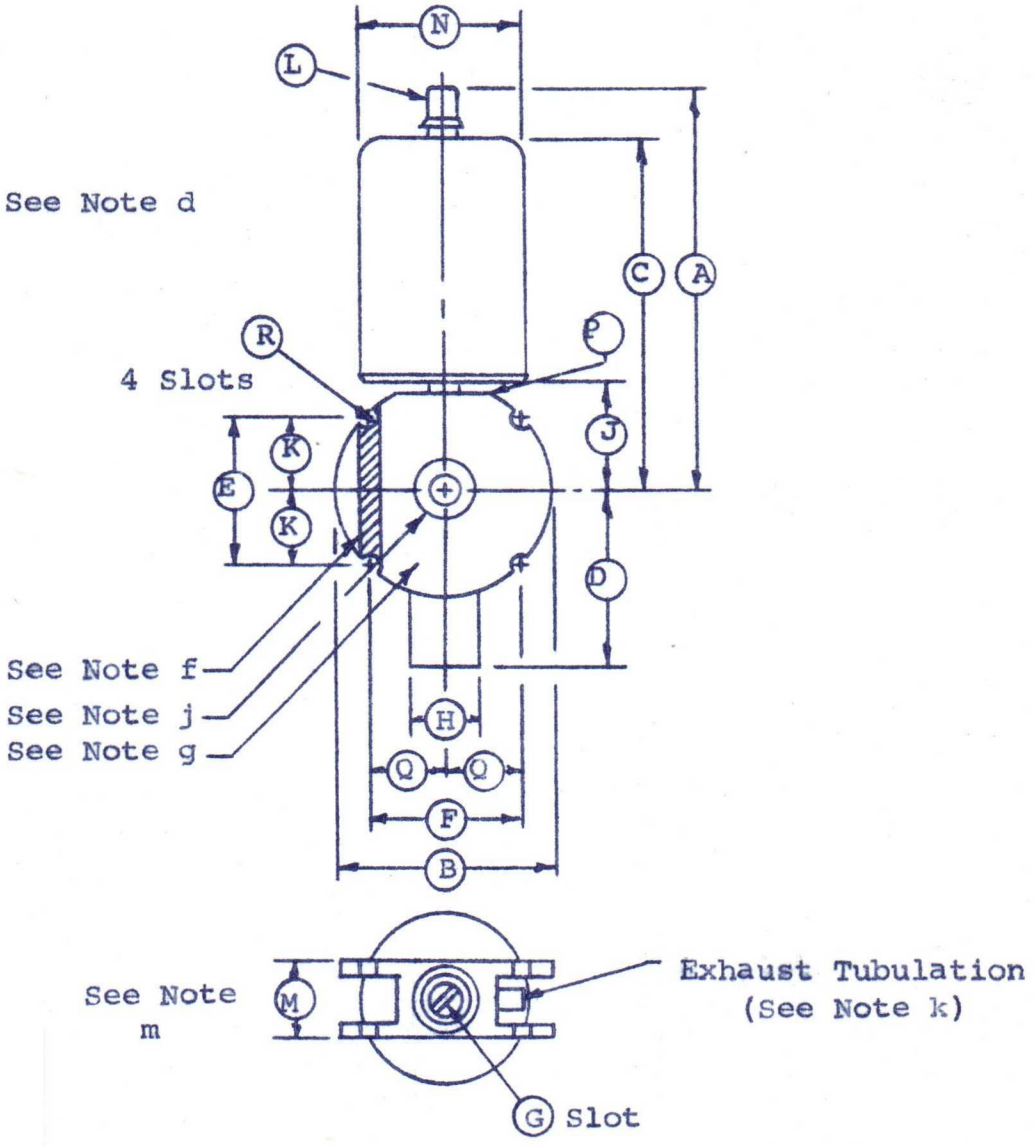
Note 5: The AQL for the combined defectives for attributes in acceptance inspection, part 1(production), excluding inoperatives and mechanical, shall be 1 percent.

Note 6: The tube shall be tuned to the specified frequency and then vibrated in the direction of ignitor axis. Subsequent to vibration, the change in resonant frequency shall not exceed the specified limit. At the conclusion of this test, the tube shall satisfy all the electrical tests of this specification.

Note 7: The ignitor current shall not be adjusted during life test. Life-Test end points shall be measured by using a fixed voltage and resistor.

Note 8: Tubes shall be prepared for domestic or overseas shipment, as specified in the contract or order, in accordance with Specification MIL-E-75/1. When specified in the contract or order, rough handling (container drop) test (i) shall be performed on the individual container utilized.

Note 9: Referenced documents shall be of the issue in effect on the date of invitation for bids.



Page 1 of 3	**SPECIFICATION SHEET** OUTLINE MXT-14/1B24A	METCOM, INC. 76 LAFAYETTE ST. SALEM, MASS. 5-17-63

Dim.	AQL (PERCENT DEFECTIVE)	INSPECTION LEVEL	LIMITS MIN.	LIMITS MAX.
	Qualification Inspection			
C	---	---	---	2.875
E	---	---	1.275	1.205
F	---	---	1.215	1.225
L	Cap: C1-2 (See note n)			
	ACCEPTANCE INSPECTION, PART 1 (PRODUCTION)			
G	(See Note c)	I	0.031	0.063
K			0.637	0.643
M			0.609	0.615
Q			0.607	0.613
R			0.086 R	0.094 R
	ACCEPTANCE INSPECTION, PART 2 (DESIGN)			
A	6.5	L6	---	3.250
B			---	1.760 dia
D			---	1.422
H			0.527 dia	0.533 dia
J			0.938	---
N			---	1.188 dia
	NOMINAL DIMENSIONS (SEE NOTE b)			
P	0.563 flat			

Notes:

a. All dimensions in inches.

b. Dimensions without tolerances are for information and are not required for inspection purposes.

c. The AQL for the combined mechanical defectives in acceptance inspection, part 1 (production), shall be 1 percent.

d. Reservoir shall be glass, or approved equivalent.

e. Maximum projection of reservoir shall lie within a cylinder of 1.250 diameter with axis colinear with tube axis.

f. A force of 200 pounds shall be applied to the face of the tube within the area indicated by shading. Dimension M shall not be permanently changed by more than 0.001. Qualification inspection required.

g. Body faces shall be cadmium plated 0.0003 minimum, or shall shall be made entirely of monel, or equivalent.

h. Solder fillets permissible on peripheral surface near seal-off tip and electrode terminal. Slots shall be free from solder.

j. No part of iris assembly shall extend beyond body surface.

k. Exhaust tubulation shall not extend beyond periphery.

m. Applies to area between periphery of this section

Notes (continued)

of tube and concentric circle of 5/16 radius.

n. Refers to JEDEC publication JO-G2, dated March 1958.