

REVISIONS						
NO.	BY	DESCRIPTION	DATE	E.M. NO.	DRAFT	CHKD
AD	AC	CR109-151, -152, -153 ADDED	5/2/68	17934		FB
AD	AD	ON CR109-90, -91, -150. 0.02% WAS. 0.03% REMARKS DELE.	9/24/68	19689	KLH	OP
AE	AE	ADDED CR109-154	4/1/70	20062	GE	REB
AF	AF	CHG. CR109-86 & 87	6-7-71	20375	RZ	REB

TMC PART NO.	HOLDER TYPE	PICTORIAL STYLE	COLUMN F FREQUENCY STAMPING INFORMATION (STAMP CRYSTAL UNIT WITH FREQUENCY SHOWN IN COLUMN INDICATED BELOW)	COLUMN S SERIES RESONANT FREQUENCY	DELTA FREQUENCY F PAR. -F SERIES	COLUMN P PARALLEL RESONANT FREQUENCY	RESONANCE LOAD CAPACITY	FREQ. TOL. AT OPERATING TEMPERATURE	OPERATING TEMPERATURE RANGE	FREQUENCY DEVIATION OVER OPERATING TEMP. RANGE	OPERABLE TEMPERATURE RANGE	TURNOVER TEMPERATURE	HARMONIC OF QUARTZ VIBRATION	RATED DRIVE LEVEL	PIN TO PIN CAPACITANCE MAX. UNLESS TOLERANCE INDICATES MIN. VALUE ALSO	MAXIMUM EFFECTIVE RESONANCE RESISTANCE AT OPERATING TEMPERATURE (OHMS) (SEE TEST NOTE 2)	REMARKS	USED ON MODEL
CR109-81	HC-6/U	A	COLUMN P	N/A	N/A	1.750000MC	13 pf	±.001% (25°C)	-40° TO +70°C	±.005%	N/A	N/A	FUNDAMENTAL	2.0MW	7.0 pf	130		CMRA-1
-82						1.756290MC												
-83						1.743710MC												
-84						1.295000MC	32 pf	±.002% (75°C)	75° ± 5°C	±.005%	0°C TO +90°C	75° ± 5°C	FUNDAMENTAL	5.0MW	3.0-4.0pf	4000 (75°C)		AFC-7
-85						10.34800 MHZ	32 pf	±.002% (75°C)	75° ± 5°C	±0.0005%	0°C TO +90°C	75° ± 5°C	FUNDAMENTAL	2.5MW	3.0-4.0pf	25 (75°C)		AFC-8
-86						N/A	10 pf	±.001% (25°C)	-10° TO +60°C	+5 TO -25 CFS	N/A	N/A	FUNDAMENTAL	2.0 MW	7.0 pf	4000 (25°C)		CDN-3 (A4350)
-87						N/A	10 pf	±.001% (25°C)	-10° TO +60°C	+5 TO -25 CFS	N/A	N/A	FUNDAMENTAL	2.0 MW	7.0 pf	4000 (25°C)		(A4354)
-88						N/A	10 pf	±.001% (25°C)	-10° TO +60°C	+5 TO -25 CFS	N/A	N/A	FUNDAMENTAL	2.0 MW	7.0 pf	4000 (25°C)		(A4352)
-89						N/A	10 pf	±.001% (25°C)	-10° TO +60°C	+5 TO -25 CFS	N/A	N/A	FUNDAMENTAL	2.0 MW	7.0 pf	4000 (25°C)		CDN-3 (A4349)
-90						8.800,000 MHZ	20 pf	±.001% (25°C)	-0° TO +55°C	.002%	-10°C TO 60°C	N/A	FUNDAMENTAL	2.0 MW	7.0 pf	500 Ω		VOX-7 MMX-1 HFR 4
-91						1,900,000												
-92						1,000,000												
-93						1,100,000												
-94						1,200,000												
-95						1,300,000												
-96						1,400,000												
-97						1,500,000												
-98						1,600,000												
-99						1,700,000												
-100						1,800,000												
-101	HC-6/U	A			N/A	N/A	20 pf	±.001% (25°C)	-0° TO +55°C		-10°C TO 60°C							
-102	HC-6/U	A																
-103	HC-6/U	A																
-104	HC-6/U	A																
-105	HC18/U	C																
-106																		
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-136	HC18/U	C	S		N/A	N/A	20 pf	±.001% (25°C)	-0 TO 55°C		-10°C TO 60°C	N/A	FUNDAMENTAL	2.0 MW	7.0 pf	500 Ω	Q= 50,000 ETC.	VOX-7 MMX-1
-137	HC6/U	A	S		N/A	N/A	20 pf	±.001% (25°C)	-0 TO 55°C		-10°C TO 60°C	N/A	FUNDAMENTAL	2.0 MW	7.0 pf	500 Ω	Q= 50,000 ETC.	HFS-4
-138	HC 18/U	C	S		N/A	N/A	20 pf	±.001% (25°C)	-0 TO 55°C		N/A	N/A	FUNDAMENTAL	2.0 MW	7.0 pf	500 Ω	Q= 50,000 ETC	MMX-1
-139	HC18/U	C	S		N/A	N/A	20 pf	±.001% (25°C)	-0 TO 55°C		N/A	N/A	FUNDAMENTAL	2.0 MW	7.0 pf	500 Ω	Q= 50,000 ETC	MMX-1
-140	HC18/U	C	S		N/A	N/A	20 pf	±.001% (25°C)	-0 TO 55°C	.002%	N/A	N/A	FUNDAMENTAL	2.0 MW	7.0 pf	500 Ω	Q= 50,000 ETC	MMX-1
-141	HC6/U	A	S		N/A	N/A	10 pf	±.001% (25°C)	-10 TO +60°C	+5 TO -25CPS	N/A	N/A	FUNDAMENTAL	2.0 MW	7.0 pf	4000 (25°C)		CDN-3 (A4349)
-142																		
-143																		
-144	HC6/U	A	S		N/A	N/A	10 pf	±.001% (25°C)	-10 TO +60°C	+5 TO -25CPS	N/A	N/A	FUNDAMENTAL	2.0 MW	7.0 pf	4000 (25°C)		CDN-3 (A4349)
-145	HC6/U	A	P		N/A	1743750	13 pf	±.001% (25°C)	-40° TO +70°C	±.005%	N/A	N/A	FUNDAMENTAL	2.0 MW	7.0 pf	130		CMRA-11
-146	HC6/U	A	P		N/A	1756250	13 pf	±.001% (25°C)	-40° TO +70°C	±.005%	N/A	N/A	FUNDAMENTAL	2.0 MW	7.0 pf	130		CMRA-11
-147	HC6/U	A	S		N/A	N/A	20 pf	±.003% (25°C)	0°C TO +55°C	+0.03%	-10°C TO +60°C	N/A	FUNDAMENTAL	1.0 MW	10.0 pf	3000 Ω	Q=50,000 ETC	SME-6, CMR
-148	HC6/U	A	S		N/A	N/A	20 pf	±.003% (25°C)	0°C TO +55°C	+0.03%	-10°C TO +60°C	N/A	FUNDAMENTAL	1.0 MW	10.0 pf	3000 Ω	Q=50,000 ETC	CMR
-149	HC6/U	A	S		N/A	N/A	20 pf	±.003% (25°C)	0°C TO +55°C	+0.03%	-10°C TO +60°C	N/A	FUNDAMENTAL	1.0 MW	10.0 pf	3000 Ω	Q=50,000 ETC	CMR
-150	HC18/U	C	S		N/A	N/A	20 pf	±.001% (25°C)	0°C TO +55°C	.002%	-10°C TO 60°C	N/A	FUNDAMENTAL	2.0 MW	7.0 pf	500 Ω		VOX-7
-151	HC18/U	STANDARD	S		N/A	N/A	20 pf	±.001% (25°C)	0°C TO +60°C	±.001%	N/A	N/A	FUNDAMENTAL	2.0 MW	5.0 pf	35 Ω	Q=50,000	HFR-4
-152	HC18/U	STANDARD	S		N/A	N/A	20 pf	±.001% (25°C)	0°C TO +60°C	±.001%	N/A	N/A	FUNDAMENTAL	2.0 MW	5.0 pf	30 Ω	Q=50,000	HFR-4
-153	HC18/U	STANDARD	S		N/A	N/A	20 pf	±.001% (25°C)	0°C TO +60°C	±.001%	N/A	N/A	FUNDAMENTAL	2.0 MW	5.0 pf	20 Ω	Q=50,000	HFR-4
-154	HC18/U	C	S		N/A	N/A	20 pf	±.001% (25°C)	-0 TO 55°C	.002%	N/A	N/A	FUNDAMENTAL	2.0 MW	7.0 pf	500 Ω	Q=50,000 ETC	

REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
LIST OF MATERIAL				
THE TECHNICAL MATERIAL CORP. MAMARONECK, NEW YORK				
TITLE CRYSTAL UNIT, QUARTZ (SPECIALS)				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		DRAWN 3/22/61	FINAL APPROVAL	DATE
CHECKED		DATE	DATE	DATE
ELECT. DES.		DATE	DATE	DATE
MECH. DES.		DATE	DATE	DATE
DECIMALS XX ± .01 XXX ± .005		FRACTIONS 1/64 ANGLES ± 9° 30'		DATE
THE CONTENTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE TECHNICAL MATERIAL CORP. ITS UNAUTHORIZED USE OR REPRODUCTION IN WHOLE OR IN PART IS STRICTLY FORBIDDEN.		CR109		
NOTES		SHEET 2 OF 2		

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