

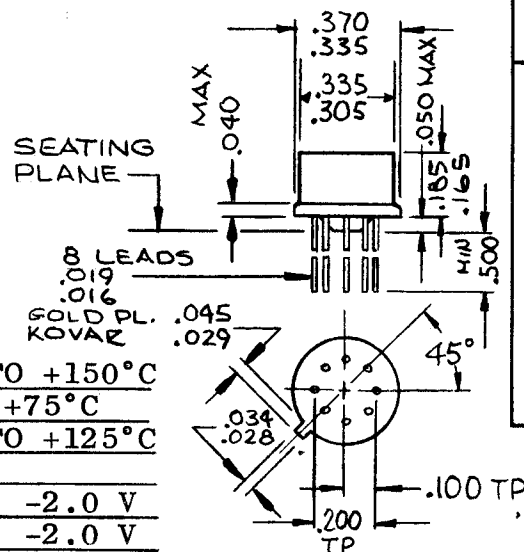
STANDARD DRAWING

GENERAL DESCRIPTION

THE CμL958 IS A COMPLETE DECADE COUNTER CONSISTING OF FOUR CASCADED BINARY TRIGGERED FLIP-FLOPS MODIFIED BY A FEEDBACK LOOP TO COUNT IN THE FAMILIAR 8-4-2-1 CODE. PROVISION IS MADE FOR CLEARING AND PRESETTING ANYONE OF THE POSSIBLE DECIMAL STATES. THE MONOLITHIC STRUCTURE EMPLOYS ONLY RESISTORS AND TRANSISTORS WITH PLANAR EPITAXIAL PROCESS

ABSOLUTE MAXIMUM RATINGS

STORAGE TEMPERATURE	-55°C TO +150°C
OPERATING TEMPERATURE	0°C TO +75°C
TEMPERATURE WITH 4.5 V V _{CC} BIAS	-55°C TO +125°C
VOLTAGE @ PIN 7 (0°C TO +75°C)	+ 6.0 V
COUNT INPUT PIN VOLTAGE	+4.0 V, -2.0 V
RESET INPUT PIN VOLTAGE	+4.0 V, -2.0 V
CURRENT INTO EACH OUTPUT TERMINAL	±5.0 mA



A		REVISIONS					
		SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD
Ø		ORIGINAL RELEASE FOR PRODUCTION	1/30/66	Ø	CV		
A		DELE. MOD. NO. HFSR-4 . MOD. MMX-() WAS MMX-1	10/29/67	C.C.	<i>Enf</i>	<i>My</i>	<i>OP</i>

ELECTRICAL CHARACTERISTICS (25°C FREE AIR TEMPERATURE UNLESS OTHERWISE NOTED)

PARAMETER	MIN.	TYP.	MAX.	UNITS	CONDITIONS
OPERATING SUPPLY VOLTAGE	4.0		5.0	V	
COUNT INPUT-LOW			0.45	V	
COUNT INPUT-HIGH	1.2			V	
COUNT INPUT PULSE WIDTH-HIGH	150			nsec	
COUNT INPUT SLOPE-POSITIVE GOING	1.0			V/μsec	
MAXIMUM COUNT INPUT FREQUENCY			2.0	Mc	
RESET INPUT-LOW			0.45	V	
RESET INPUT-HIGH	1.2			V	
OUTPUT-LOW			0.35	V	I _{OUT} =0.4mA V _{CC} =4.0V
OUTPUT-HIGH	1.4			V	I _{OUT} =0.7mA V _{CC} =3.6V
POWER CONSUMPTION		135		mW	V _{CC} =3.8V

COUNT INPUT IMPEDANCE: 2 KΩ IN SERIES WITH A TRANSISTOR BASE-EMITTER DIODE

RESET INPUT IMPEDANCE: 300 Ω IN SERIES WITH A TRANSISTOR BASE-EMITTER DIODE

MAXIMUM DELAY FROM COUNT INPUT TO Z₈ OUTPUT (COUNT 7 TO 8): 200 nsec (LOAD: 2 KΩ PARALLEL WITH 50 pf FROM EACH OUTPUT TO GROUND)

THE CIRCUIT IS RESET TO COUNT 0 (ALL OUTPUTS HIGH) WITH A HIGH LEVEL AT THE RESET INPUT PIN.

THE PRESET AN ARBITRARY COUNT: 1) RESET TO COUNT 0 AND THEN RETURN THE RESET PIN TO A LOW LEVEL;

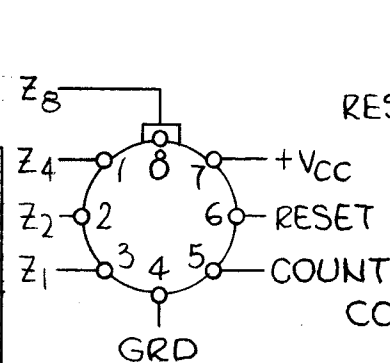
2) GROUND (BELOW 0.45 V) THE APPROPRIATE OUTPUTS

	MMX-()	
	VOX-7	
Q'TY./UNIT	MODEL USED ON	ASS'Y. NO.
SCALE	CODE	5401-440 (UX5995829X)

THE CONTENTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE TECHNICAL MATERIEL CORP. ITS UNAUTHORIZED USE OR REPRODUCTION IN WHOLE OR IN PART IS STRICTLY FORBIDDEN.

NOTES

TOP VIEW



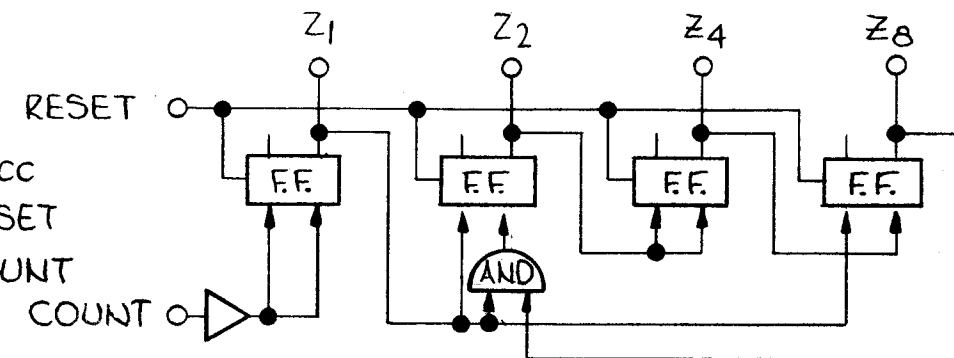
COUNT INPUT

TABLE OF OUTPUT STATES

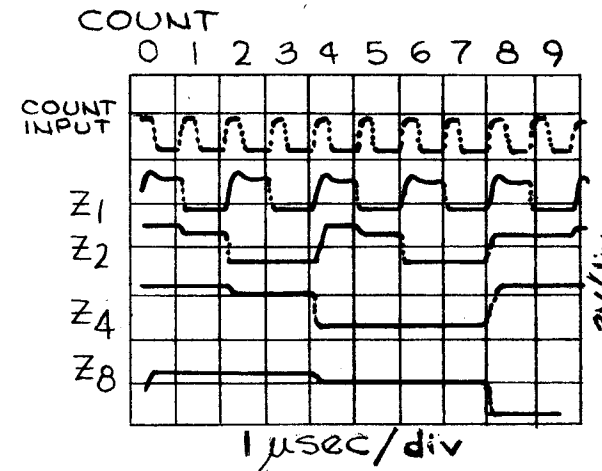
COUNT H=HIGH, L=LOW)

COUNT	Z1	Z2	Z4	Z8
0	H	L	H	L
1	H	H	L	L
2	H	L	H	L
3	H	L	L	L
4	H	H	L	L
5	H	H	H	L
6	H	L	L	L
7	H	L	H	L
8	H	H	H	L
9	H	H	L	L

BLOCK DIAGRAM



OUTPUT WAVEFORMS



REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
LIST OF MATERIAL				
MATERIAL		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK		
FINISH		TITLE NETWORK, DECADE, COUNTER		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		DRAWN <i>WTD</i>	DATE 10/14/66	FINAL APPROVAL <i>[Signature]</i>
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005		CHECKED <i>[Signature]</i>	DATE 10/24/66	DATE 12/1/66
FRACTIONS ± 1/64 ANGLES ± 0° 30'		ELECT. DES. <i>[Signature]</i>	DATE 11/28/66	SHEET A
TOLERANCES		MECH. DES. <i>[Signature]</i>	DATE 12/21/66	REV. LTR.