



DATE 4-8-74

NO. 04-035

COMPONENT SPECIFICATION INITIATION/REVISION PROPOSAL

PART NUMBER: 155-0090-00

ORIGINATOR: George Clark

CHANGE REQUIRED: I_{CC} Maximum Supply Current changes:
From 25 mA to 40 mA

ACKNOWLEDGEMENT:

COMPONENT DESIGNER	Mike Metcalf	<i>M.M.</i>		4-12-74
PRODUCTION ENGINEER	Chuck Gold	<i>C.G.</i>		4-16-74
ICE TEST	George Clark	<i>GC</i>		4-12-74
ICM TEST	Oris Nussbaum	<i>O.N.</i>		4-16-74

COMPLETED George Clark | 4-16-74 (ORIGINATOR SIGN & DATE)

TEKTRONIX, INC.

P. O. BOX 500, BEAVERTON, OREGON
97005



SPECIFICATION NO 155-0090-00-A

APPROVED April 1, 1974

SUPERSEDES SPEC NO 155-0090-00

TEKTRONIX, INC., PN 155-0090-00-A

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TENTATIVE

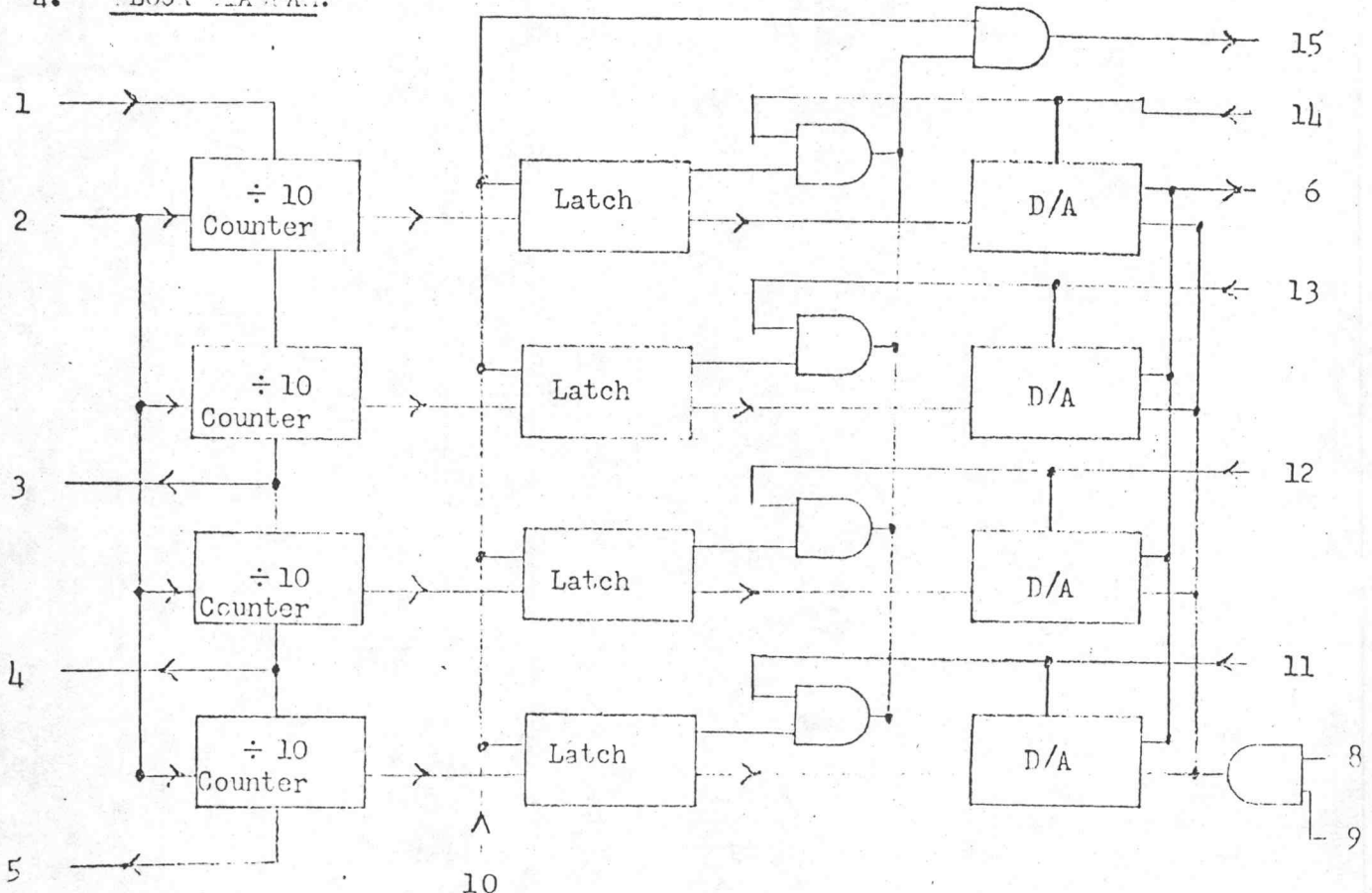
THIS SPECIFICATION APPLIES TO THE SUBJECT ITEM AS MANUFACTURED BY TEKTRONIX, INC.

1. ITEM NAME & DESCRIPTION: I. C. 4 Decade Counter with Latches, Digital to Analog Conversion, Multiplexing and Leading Zero's Suppresion Logic. Initially designated the M059.
2. PACKAGE: 16 Pin Minipack
3. FUNCTIONAL DESCRIPTION:

A. Terminal Identification:

- | | |
|----------------------------|----------------------------------|
| 1. Count Input | 9. Analog Current Output Control |
| 2. Reset Input | 10. Transfer |
| 3. 2nd Decade Count out | 11. 1th Decade Read Input |
| 4. 3rd Decade Count out | 12. 3rd Decade Read Input |
| 5. 4th Decade Count Out | 13. 2nd Decade Read Input |
| 6. Analog Current Output | 14. 1st Decade Read Input |
| 7. Gnd | 15. Zero Not Output |
| 8. Reference Current Input | 16. V _{CC} |

4. BLOCK DIAGRAM:



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$V_{CC} = 5.0 \text{ V}$

ELECTRICAL CHARACTERISTICS (FOR AN AMBIENT TEMPERATURE OF 25 °C EXCEPT WHERE A DIFFERENT TEMPERATURE MAY BE SHOWN)			VALUES		UNITS
SYMBOLS	IDENTIFICATIONS	NOTES AND TEST CONDITIONS ¹	MIN	MAX	
INPUTS	Pin 1; Count Input Pin 2; Reset Input				
V_H			2	5	V
V_L			0.8	-2	V
I_H	$V_H = 1.8\text{V}$			10	μA
I_H	$V_H = 2.4\text{V}$			1	mA
V_H	Pin 9 output Current Control Pin 10 Transfer		2	5	V
V_L			0.8	-2	V
I_H	$V_H = 2.4$			1.5	mA
V_H	Head Inputs, Pins 11, 12, 13 & 14		-1	-10	V
V_L			0.5	5	V
I_H	$V_H = -10\text{V}$			-1.2	mA
I_{REF}	Reference Current		0.95	1.05	mA
V_{REF}	$I_{REF} = 1.0 \text{ mA}$	WRT V_{CC}	-50	50	mV

$V_{CC} = 5.0 \text{ V}$

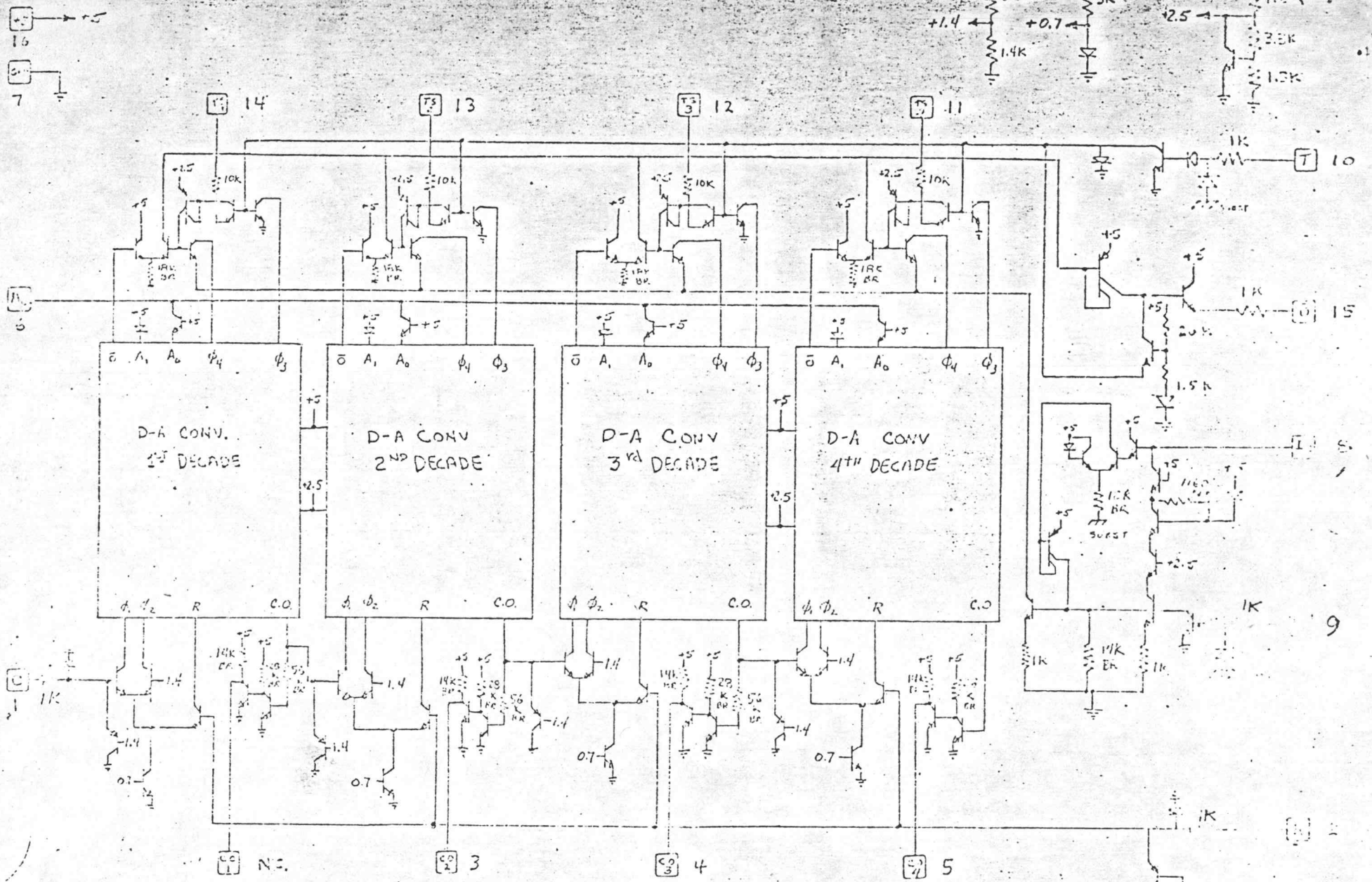
ELECTRICAL CHARACTERISTICS (FOR AN AMBIENT TEMPERATURE OF 25 °C EXCEPT WHERE A DIFFERENT TEMPERATURE MAY BE SHOWN)			VALUES		UNITS
SYMBOLS	IDENTIFICATIONS	NOTES AND TEST CONDITIONS ¹	MIN	MAX	
OUTPUTS		Pin 9 output $C_{on}=1$	0	10	μA
A_0	Analog Output Current	Pin 9 = 0			μA
		0	80	120	
		1	180	220	
		2	280	320	
		3	380	420	
		4	480	520	
		5	580	620	
		6	680	720	
		7	780	820	
		8	880	920	
		9	930	1040	
V_H	Counter Outputs Pins 3, 4 & 5 $I_H = -10 \mu\text{A}$		2.4		V
V_L	$I_L = 1.6 \text{ mA}$			0.8	V
V_L	Zero Not Output	Pin 10 = 1	0	0.3	V
		Pin 10 = 0	0	0.5	V
		$P_L = 5K\Omega$			
V_H			3		V
I_L		$F_L = 0$		100	μA
I_H		$P_L = 0$	3.0		mA
I_{CC}	Supply Current			40	mA

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ELECTRICAL CHARACTERISTICS (FOR AN AMBIENT TEMPERATURE OF 25 °C EXCEPT WHERE A DIFFERENT TEMPERATURE MAY BE SHOWN)			VALUES		UNITS
SYMBOLS	IDENTIFICATIONS	NOTES AND TEST CONDITIONS ¹	MIN	MAX	
	Switching Parameters				
	Negative Transition of Clock to				
t_{PD2}	2nd Decade Output			100	n Sec
t_{PD3}	3rd Decade Output			150	n Sec
t_{PD4}	4th Decade Output			200	n Sec
t_{CH}	Clock Input High		100		n Sec
t_{CL}	Clock Input Low		50		n Sec
t_{PH}	Reset Pulse Width		100		n Sec
t_{TH}	Transfer Pulse Width		100		n Sec

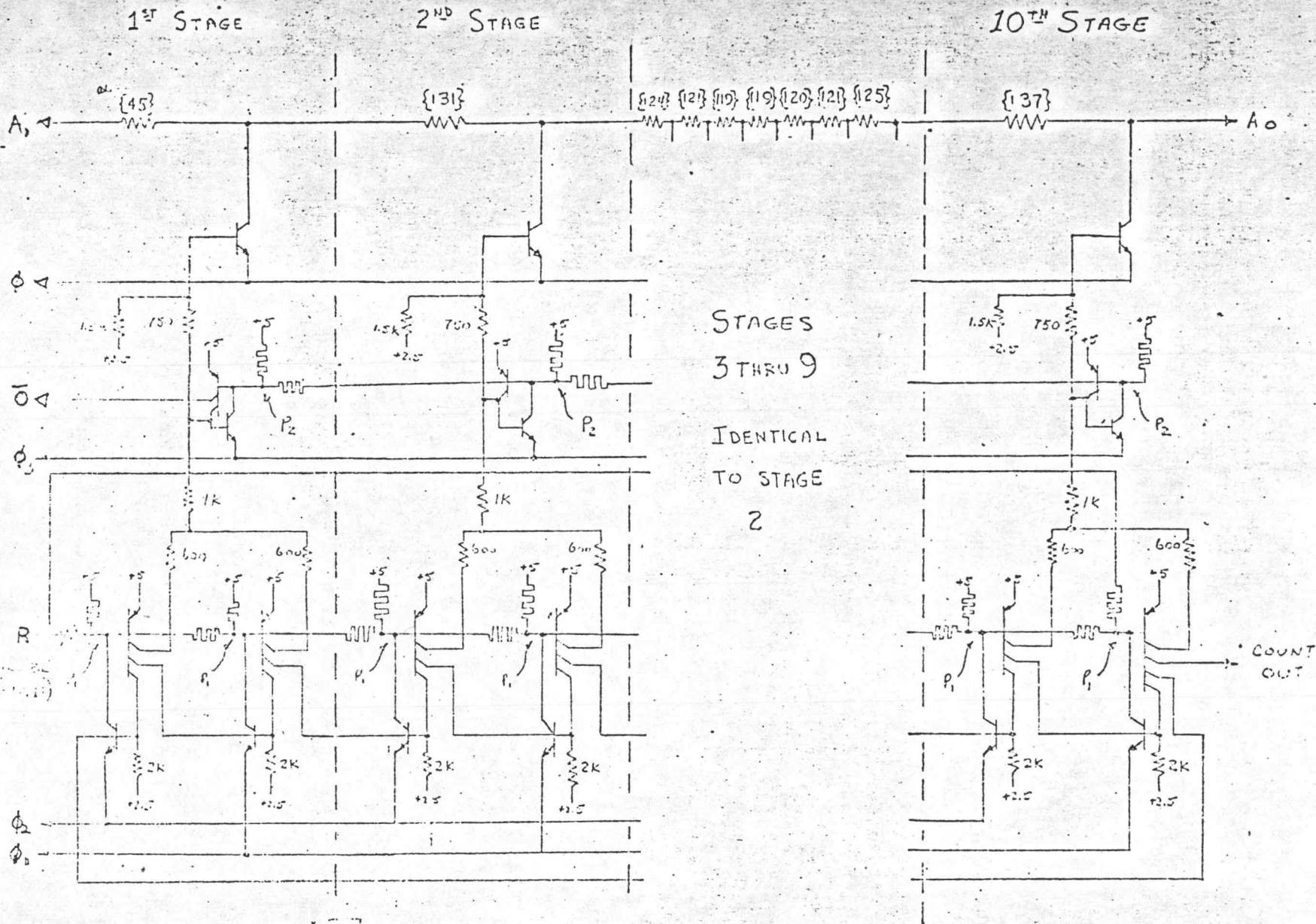


M⁵E

MARCH 1, '72

MIKE METCALF

D-A CONVERTER



STAGES
3 THRU 9
IDENTICAL
TO STAGE
2

M50

MARCH 1, '72 MINE METCALF

RESISTANCE INTO POINTS $P_1 = 1.45K$
 " " " $P_2 = 1.65K$ to $2.2K$

RESISTORS IN { } are N^T $10\Omega/\square$
 " MARKED 10^T " EPI $5.5K/\square$
 " " " " " " " " " "

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