

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, 8192-BIT SCHOTTKY,  
BIPOLAR, PROGRAMMABLE READ-ONLY MEMORY (PROM),  
MONOLITHIC SILICON

This amendment forms a part of MIL-M-38510/209D, dated 30 September 1986, and is approved for use by all Departments and Agencies of the Department of Defense.

PAGE 1

1.1, last sentence: Delete.

1.2.3, letter column, add: "Y". Case outline column, add:

"F-10 (18-lead, .540" x .370" x .092" maximum), flat package".

PAGE 2

Bottom of page, footnote 2/: Delete "Case outline X" and substitute "Case outlines X and Y".

PAGE 6

4.2d.: Delete in its entirety.

PAGE 35

TABLE III, case outline heading: Delete "Cases V, X" and substitute "Cases V, X, Y".

PAGE 36

TABLE III, case outline heading: Delete "Cases V, X" and substitute "Cases V, X, Y".

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The attached insertable replacement pages listed below are replacements for stipulated pages. When the new pages have been entered in the document, insert the amendment as the cover sheet to the specification.

<u>Replacement page</u>	<u>Page replaced</u>
9	9
10	Reprinted without change
65	Reprinted without change
66	66

MIL-M-38510/209D  
AMENDMENT 1

PAGE 46

Footnote 2/, delete and substitute: "2/ For unprogrammed device type 01 (circuit A), apply 10.0 V on pin 1 (A6) and for the unprogrammed device type 02 (circuit A), apply 13.0 V on pins 1 and 2 (A6, A5); for the unprogrammed device type 03, apply 10.0 V on pin 1 (A7), and for the unprogrammed device type 04, apply 13.0 V on pins 1 and 2 (A7, A6) (circuit A)."

Footnote 5/, add the following: "For manufacturer-programmed prom only (see 3.7.2). When testing device type 10, the  $t_{PHL1}$  and  $t_{PLH1}$  limits shall be verified by performing a sequential test pattern outline in footnote 7/."

CONCLUDING MATERIAL

Custodians:

Army - ER  
Navy - EC  
Air Force - 17

Review activities:

Army - AR, MI  
Navy - OS, SH, TD  
Air Force - 11, 19, 85, 99  
DLA - ES

User activities:

Army - SM  
Navy - AS, CG, MC

Preparing activity:  
Air Force 17

Agent:  
DLA - ES

(Project 5962-1128)

MIL-M-38510/209D  
AMENDMENT 1

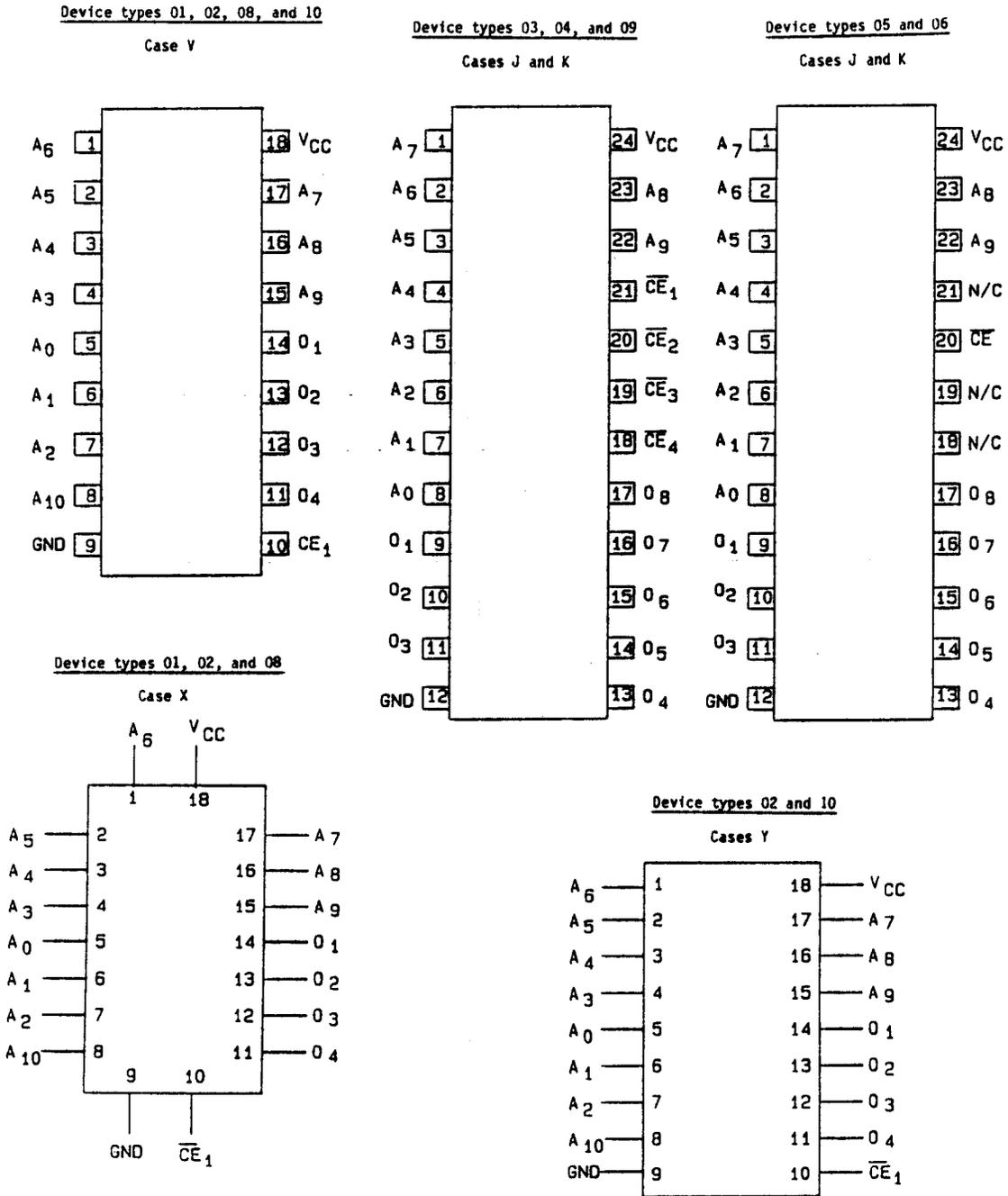


FIGURE 2. Terminal connections.

Supersedes page 9 of MIL-M-38510/209D  
of 30 September 1986.

MIL-M-38510/209D  
AMENDMENT 1

Device types 01, 02, 08 and 10 (see notes 1, 2 and 3)

Word no.	Enable	Address											Data					
	CE <sub>1</sub>	A <sub>10</sub>	A <sub>9</sub>	A <sub>8</sub>	A <sub>7</sub>	A <sub>6</sub>	A <sub>5</sub>	A <sub>4</sub>	A <sub>3</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>0</sub>	O <sub>1</sub>	O <sub>2</sub>	O <sub>3</sub>	O <sub>4</sub>		
NA	L	X	X	X	X	X	X	X	X	X	X	X	X	X	See note 5			
NA	H	X	X	X	X	X	X	X	X	X	X	X	X	OC	OC	OC	OC	

Device types 03, 04 and 09 (see notes 1, 2, 3 and 4)

Word no.	Enable				Address											Data							
	CE <sub>1</sub>	CE <sub>2</sub>	CE <sub>3</sub>	CE <sub>4</sub>	A <sub>9</sub>	A <sub>8</sub>	A <sub>7</sub>	A <sub>6</sub>	A <sub>5</sub>	A <sub>4</sub>	A <sub>3</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>0</sub>	O <sub>1</sub>	O <sub>2</sub>	O <sub>3</sub>	O <sub>4</sub>	O <sub>5</sub>	O <sub>6</sub>	O <sub>7</sub>	O <sub>8</sub>	
NA	L	L	H	H	X	X	X	X	X	X	X	X	X	X	See note 5								
NA	L	H	H	H	X	X	X	X	X	X	X	X	X	X	OC								
NA	H	L	H	H	X	X	X	X	X	X	X	X	X	X	OC								
NA	H	H	L	H	X	X	X	X	X	X	X	X	X	X	OC								
NA	H	H	L	L	X	X	X	X	X	X	X	X	X	X	OC								

Device types 05 and 06 (see notes 1, 2 and 3)

Word no.	Enable	Address											Data							
	CE	A <sub>9</sub>	A <sub>8</sub>	A <sub>7</sub>	A <sub>6</sub>	A <sub>5</sub>	A <sub>4</sub>	A <sub>3</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>0</sub>	O <sub>1</sub>	O <sub>2</sub>	O <sub>3</sub>	O <sub>4</sub>	O <sub>5</sub>	O <sub>6</sub>	O <sub>7</sub>	O <sub>8</sub>	
NA	L	X	X	X	X	X	X	X	X	X	X	X	See note 5							
NA	H	X	X	X	X	X	X	X	X	X	X	X	OC							

NOTES:

1. NA = Not applicable.
2. X = Input may be high level, low level, or open circuit.
3. OC = Open circuit (high resistance output).
4. Program readout can only be accomplished with both enable inputs at low level.
5. The outputs for an unprogrammed device shall be high for circuits, A, B (device types 03 and 04), and F, and shall be low for circuits B (device types 01, 02, and 08), C, D, E and G.

FIGURE 3. Truth tables (unprogrammed).

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-M-38510.

6. NOTES

6.1 Notes. The notes specified in MIL-M-38510 are applicable to this specification.

6.2 Intended use. Microcircuits conforming to this specification are intended for original equipment design applications and logistic support of existing equipment.

6.3 Ordering data. The acquisition document should specify the following:

- a. Complete part number (see 1.2).
- b. Requirements for delivery of one copy of the quality conformance inspection data pertinent to the device inspection lot to be supplied with each shipment by the device manufacturer, if applicable.
- c. Requirements for certificate of compliance, if applicable.
- d. Requirements for notification of change of product or process to the contracting activity in addition to notification to the qualifying activity, if applicable.
- e. Requirements for failure analysis (including required test condition of method 5003 of MIL-STD-883), corrective action, and reporting of results, if applicable.
- f. Requirements for product assurance options.
- g. Requirements for special lead lengths or lead forming, if applicable. Unless otherwise specified, these requirements will not apply to direct purchase by or direct shipment to the Government.
- h. Requirements for programming the device, including processing option.
- i. Requirements for "JAN" marking.

6.4 Abbreviations, symbols, and definitions. The abbreviations, symbols, and definitions used herein are defined in MIL-M-38510, MIL-STD-1331, and as follows:

- GND - - - - - Electrical ground (common terminal).  
I<sub>IN</sub> - - - - - Current flowing into an input terminal.  
V<sub>IC</sub> - - - - - Input clamp voltage.  
V<sub>IN</sub> - - - - - Voltage level at an input terminal.

6.5 Logistic support. Lead materials and finishes (see 3.3) are interchangeable. Unless otherwise specified, microcircuits acquired for Government logistic support will be acquired to device class B (see 1.2.2), and lead finish C (see 3.3). Longer length leads and lead forming shall not affect the part number. It is intended that spare devices for logistic support be acquired in the unprogrammed condition (see 3.7.1) and programmed by the maintenance activity, except where use of quantities for devices with a specific program or pattern justify stocking of preprogrammed devices.

MIL-M-38510/209D  
AMENDMENT 1

6.6 Substitutability. The cross-reference information below is presented for the convenience of users. Microcircuits covered by this specification will functionally replace the listed generic-industry type. Generic-industry microcircuit types may not have equivalent operational performance characteristics across military temperature ranges or reliability factors equivalent to MIL-M-38510 device types and may have slight physical variations in relation to case size. The presence of this information shall not be deemed as permitting substitution of generic-industry types for MIL-M-38510 types or as a waiver of any of the provisions of MIL-M-38510.

<u>Military device type</u>	<u>Generic-industry type/manufacturer</u>	<u>Circuit designator</u>	<u>Fusible link</u>	<u>Symbol/CAGE number</u>
01 <u>1/</u>	7684/Harris Corporation	A	NiCr	CDWD/34371
01	77S184/National Semiconductor	G	TiW	CCXP/27014
01 <u>1/</u>	82S184/Signetics Corporation	C	NiCr	CDKB/18324
02 <u>I/</u>	7685/Harris Corporation	A	NiCr	---
02	77S185/National Semiconductor	G	TiW/W	---
02,10	82S185A/Signetics Corporation	C	NiCr	---
02,08	29651/Raytheon Company	F	NiCr	CRP/07933
03	77S180/National Semiconductor	G	TiW	---
03 <u>1/</u>	7680/Harris Corporation	A	NiCr	---
03 <u>I/</u>	82S180/Signetics Corporation	C	NiCr	---
03	93Z450/Fairchild Corporation	D	ZVE*	CFJ/07263
03	27S180/Advanced Micro Devices, Inc.	E	Platinum silicide	CDWN/34335
04	77S181/National Semiconductor	G	TiW/W	---
04 <u>1/</u>	7681/Harris Corporation	A	NiCr	---
04,09	82S181A/Signetics Corporation	C	NiCr	---
04,09	93Z451/Fairchild Corporation	D	ZVE*	---
04	27S181/Advanced Micro Devices, Inc.	E	Platinum silicide	---
04	29631/Raytheon Company	F	NiCr	---
05	82S2708/Signetics Corporation	C	NiCr	---
05	93Z461/Fairchild Corporation	D	ZVE*	---
06	93Z460/Fairchild Corporation	D	ZVE*	---
02,08	53S841/Monolithic Memories, Inc.	B	TiW	---

1/ These generic industry types are no longer manufactured.

\* Zapped vertical emitter.

6.7 Changes from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

CONCLUDING MATERIAL

Custodians:  
Army - ER  
Navy - EC  
Air Force - 17

Review activities:  
Army - AR, MI  
Navy - OS, SH, TD  
Air Force - 11, 19, 85, 99  
DLA - ES

User activities:  
Army - SM  
Navy - AS, CG, MC

Preparing activity:  
Air Force - 17

Agent:  
DLA - ES

(Project 5962-0885)