

82S191 82S191A 16K-Bit TTL Bipolar PROM

Product Specification

Bipolar Memory Products

DESCRIPTION

The 82S191 and 82S191A are field programmable, which means that custom patterns are immediately available by following the Signetics Generic I fusing procedure. The 82S191 and 82S191A are supplied with all outputs at a logical Low. Outputs are programmed to a logic High level at any specified address by fusing the Ni-Cr link matrix.

This device includes on-chip decoding and 3 chip enable inputs for ease of memory expansion. It features Three-state outputs for optimization of word expansion in bused organizations.

Ordering information can be found on the following page.

The 82S191 and 82S191A devices are also processed to military requirements for operation over the military temperature range. For specifications and ordering information consult the Signetics Military Data Book.

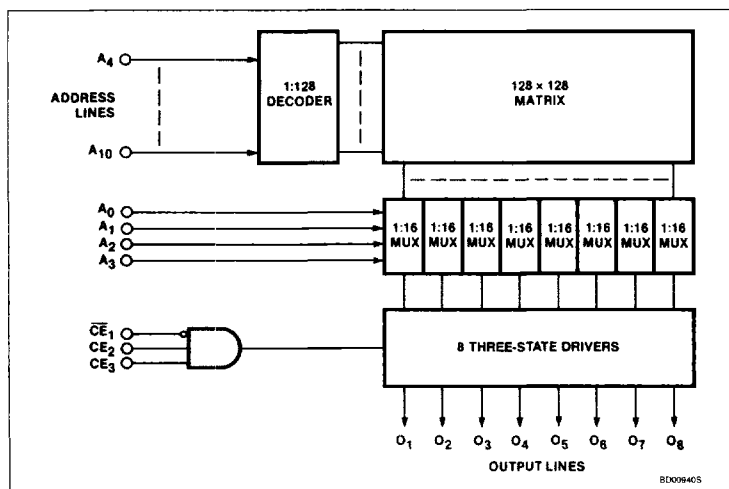
FEATURES

- Address access time:
- N82S191: 80ns max
- N82S191A: 55ns max
- Power dissipation: 40μW/bit typ
- Input loading: -100μA max
- Three chip enable inputs
- On-chip address decoding
- No separate fusing pins
- Unprogrammed outputs are Low level
- Fully TTL compatible
- Outputs: Three-state

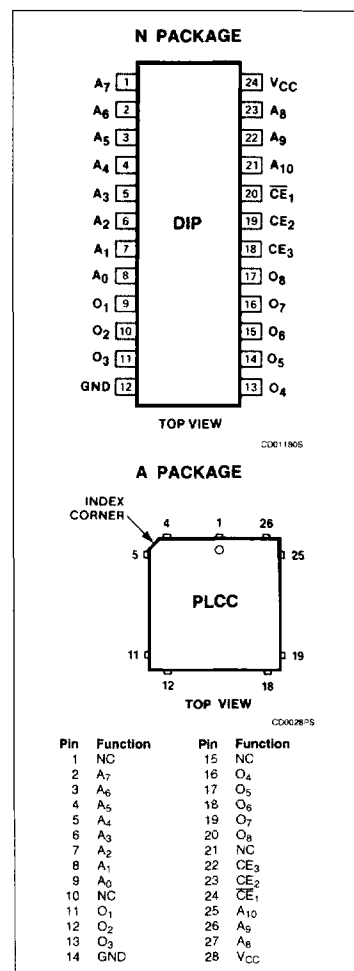
APPLICATIONS

- Sequential controllers
- Microprogramming
- Hardwired algorithms
- Control store
- Random logic
- Code conversion

BLOCK DIAGRAM



PIN CONFIGURATION



16K-Bit TTL Bipolar PROM (2048 x 8)

82S191, 82S191A

ORDERING CODE

PACKAGE DESCRIPTION	ORDER CODE
Plastic Dual Inline 600mil wide 24-pin	N82S191 N • N82S191A N
Plastic Leaded Chip Carrier 450mil sq 28-pin	N82S191 A • N82S191A A

ABSOLUTE MAXIMUM RATINGS

PARAMETER	RATING	UNIT
V_{CC} Supply voltage	+7	V_{dc}
V_{IN} Input voltage	+5.5	V_{dc}
V_O Output voltage Off-state	+5.5	V_{dc}
T_A Temperature range Operating	0 to +75	°C
T_{STG} Storage	-65 to +150	

DC ELECTRICAL CHARACTERISTICS $0^\circ\text{C} \leq T_A \leq +75^\circ\text{C}$, $4.75\text{V} \leq V_{CC} \leq 5.25\text{V}$

PARAMETER	TEST CONDITIONS ^{1,2}	LIMITS			UNIT
		Min	Typ ₅	Max	
Input voltage V_{IL} Low V_{IH} High V_{IC} Clamp	$I_{IN} = -12\text{mA}$	2.0	-0.8	0.8 -1.2	V
Output voltage V_{OL} Low V_{OH} High	$\overline{CE}_1 = \text{Low}, CE_{2,3} = \text{High}$ $I_{OUT} = 9.6\text{mA}$ $I_{OUT} = -2\text{mA}$	2.4		0.45	V
Input current¹ I_{IL} Low I_{IH} High	$V_{IN} = 0.45\text{V}$ $V_{IN} = 5.5\text{V}$			-100 40	μA
Output current¹ I_{OZ} Hi-Z state	$\overline{CE}_1 = \text{High}, CE_{2,3} = \text{Low},$ $V_{OUT} = 0.5$ $\overline{CE}_1 = \text{High}, CE_{2,3} = \text{Low},$ $V_{OUT} = 5.5$			-40 40	μA
I_{OS} Short circuit ³	$\overline{CE}_1 = \text{Low}, CE_{2,3} = \text{High},$ $V_{OUT} = 0\text{V}$	-15		-70	mA
Supply current I_{CC}	$V_{CC} = 5.25\text{V}$		130	175	mA
Capacitance C_{IN} Input C_{OUT} Output	$\overline{CE}_1 = \text{High}, CE_{2,3} = \text{Low},$ $V_{CC} = 5.0\text{V}$ $V_{IN} = 2.0\text{V}$ $V_{OUT} = 2.0\text{V}$		5 8		pF

16K-Bit TTL Bipolar PROM (2048 x 8)

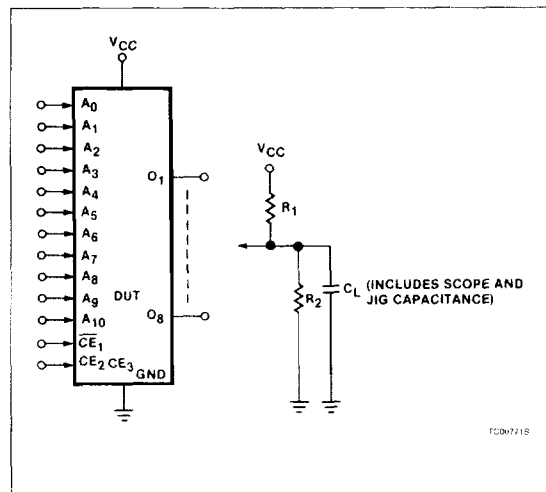
82S191, 82S191A

AC ELECTRICAL CHARACTERISTICS $R_1 = 270\Omega$, $R_2 = 600\Omega$, $C_L = 30\text{pF}$, $0^\circ\text{C} \leq T_A \leq +75^\circ\text{C}$, $4.75\text{V} \leq V_{CC} \leq 5.25\text{V}$

PARAMETER	TO	FROM	N82S191			N82S191A			UNIT
			Min	Typ ⁵	Max	Min	Typ	Max	
Access time⁴ T_{AA} T_{CE}	Output	Address		50	80		50	55	ns
		Chip enable		30	40		20	30	
	Output								
Disable time⁶ T_{CD}	Output	Chip disable		30	40		20	30	ns

NOTES:

1. Positive current is defined as into the terminal referenced.
2. All voltages with respect to network ground.
3. Duration of short circuit should not exceed 1 second.
4. Tested at an address cycle time of $1\mu\text{sec}$.
5. Typical values are at $V_{CC} = 5\text{V}$, $T_A = 25^\circ\text{C}$.
6. Measured at a delta of 0.5V from Logic Level with $R_1 = 750\Omega$, $R_2 = 750\Omega$ and $C_L = 5\text{pF}$.

TEST LOAD CIRCUIT**VOLTAGE WAVEFORM**