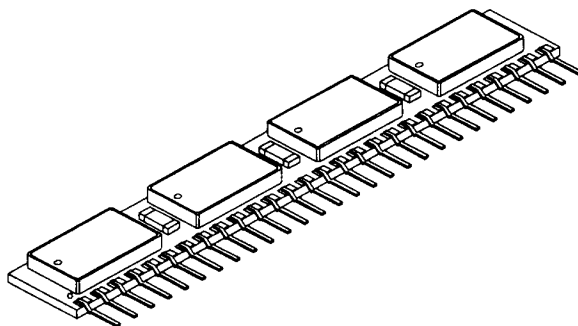


NOT RECOMMENDED FOR NEW DESIGNS

DESCRIPTION:

The DPS8645 is a 64K X 4 high-speed, low-power static RAM module comprised of four 64K X 1 monolithic SRAM's, and decoupling capacitors surface mounted on a single inline thick film ceramic substrate.

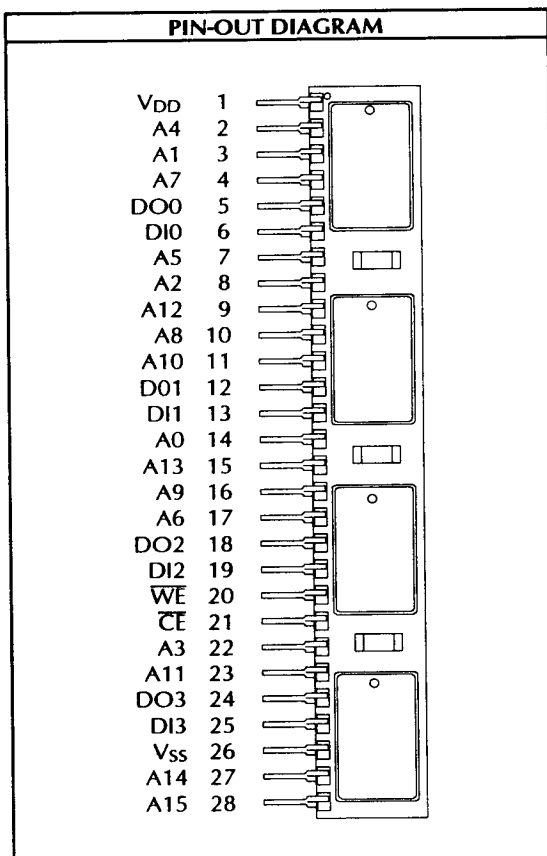
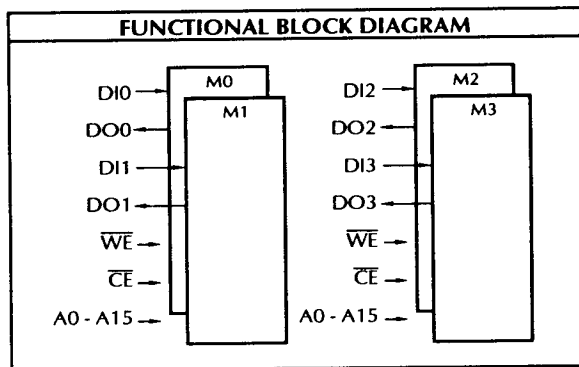
The DPS8645 operates from a single +5V supply and all input and output pins are completely TTL-compatible. The DPS8645 is best suited for high speed military computers and signal processing applications.



FEATURES:

- Access Times: 25, 35, 45, 55ns (max.)
- Low Power Dissipation
- Completely Static Operation - No Clock or Refresh Needed
- Three State Output
- All inputs and outputs are TTL-compatible
- 28-Pin SIP

PIN NAMES	
A0 - A15	Address Inputs
DI0 - DI3	Data Inputs
DO0 - DO3	Data Outputs
$\overline{CE}$	Chip Enable
$\overline{WE}$	Write Enable
VDD	Power (+5V)
VSS	Ground



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RECOMMENDED OPERATING RANGE ¹

Symbol	Characteristic	Min.	Typ.	Max.	Unit
V _{DD}	Supply Voltage	4.5	5.0	5.5	V
V _{IH}	Input HIGH Voltage	2.2		V _{DD} +0.5	V
V _{IL}	Input LOW Voltage	-0.5 ²		0.8	V

CAPACITANCE ⁴: T_A = 25°C, F = 1.0MHz

Symbol	Parameter	Max.	Unit	Condition
C _{ADR}	Address Input	60	pF	V _{IN} = 0V
C _{CE}	Chip Enable	60		
C _{WE}	Write Enable	60		
C _{I/O}	Data Input/Output	30		

ABSOLUTE MAXIMUM RATINGS ³

Symbol	Parameter	Value	Unit
T _{STC}	Storage Temperature	-65 to + 150	°C
T _{BIAS}	Temperature Under Bias	-55 to + 125	°C
V _{DD}	Supply Voltage ¹	-0.5 to + 7.0	V
V _{I/O}	Input/Output Voltage ¹	-0.5 to V _{DD} + 0.5	V

TRUTH TABLE

Mode	$\overline{CE}$	$\overline{WE}$	I/O Pin	Supply Current
Not Selected	H	X	HIGH-Z	Standby
Read	L	H	D _{OUT}	Active
Write	L	L	D _{IN}	Active

H=HIGH

L=LOW

X=Don't Care

DC OPERATING CHARACTERISTICS: Over operating ranges

Symbol	Characteristics	Test Conditions	LIMITS		Unit
			Min.	Max.	
I _{IN}	Input Leakage Current	V _{IN} = 0V to V _{DD}	-40	+40	μA
I _{OUT}	Output Leakage Current	V _{I/O} = 0V to V _{DD} , CE or OE = V _{IH} , or WE = V _{IL}	-10	+10	μA
I _{CC1}	Operating Power Supply Current	CE = V _{IL} , f = 0 Outputs Open		420	mA
I _{CC2}	Dynamic Operating Supply Current	Outputs Open CE = V _{IL} , f = max.		560	mA
I _{SB1}	Standby Supply Current (TTL)	CE = V _{IH}		220	mA
I _{SB2}	Full Standby Supply Current (CMOS)	CE ≥ V _{DD} - 0.2V, V _{IN} ≥ V _{DD} - 0.2V or V _{IN} ≤ V _{SS} + 0.2V		100	mA
V _{OL}	Output Low Voltage	V _{OL} = 8.0mA		0.4	V
V _{OH}	Output High Voltage	V _{OH} = -4.0mA	2.4		V

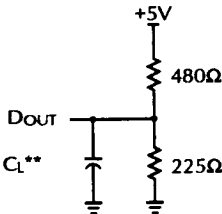
NOTE: Dense-Pac has other specialized suppliers that may provide better A.C. or D.C. Characteristics.

AC TEST CONDITIONS	
Input Pulse Levels	0V to 3.0V
Input Pulse Rise and Fall Times	5ns*
Input and Output Timing Reference Levels	1.5V

* Transient between 0.8V and 2.2V.

Output Load		
Load	C _L	Parameters Measured
1	30 pF	except t _{CLZ} , t _{CHZ} , t _{WHZ} , and t _{WLZ}
2	5 pF	t _{CLZ} , t _{CHZ} , t _{WHZ} , and t _{WLZ}

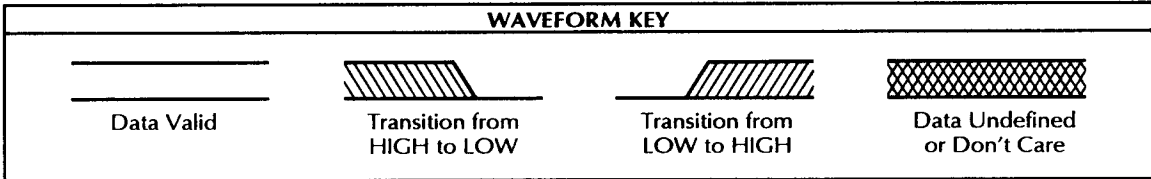
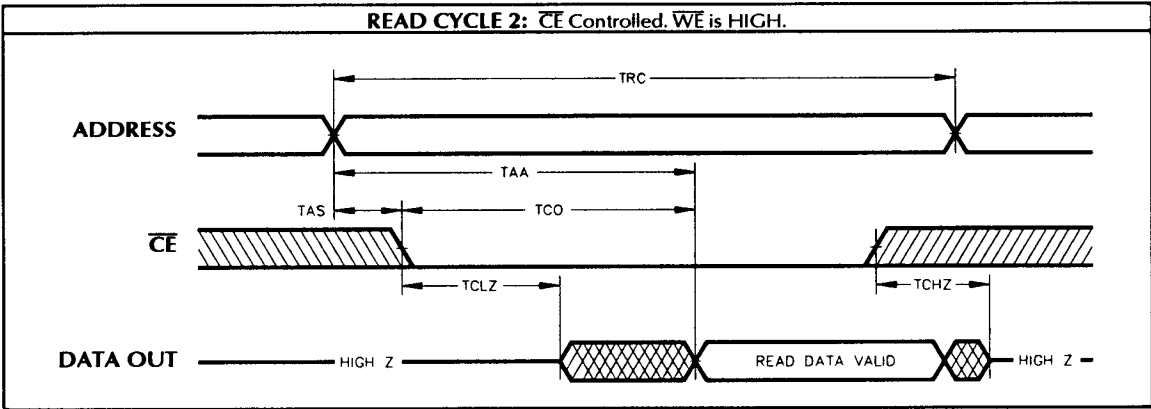
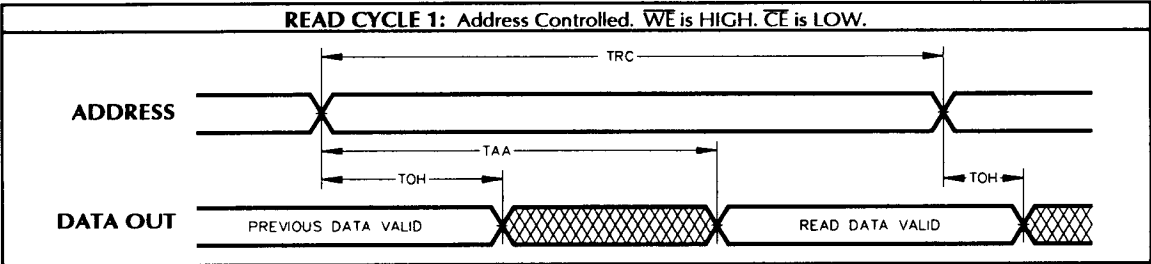
Figure 1. Output Load
** Including Probe and jig Capacitance.



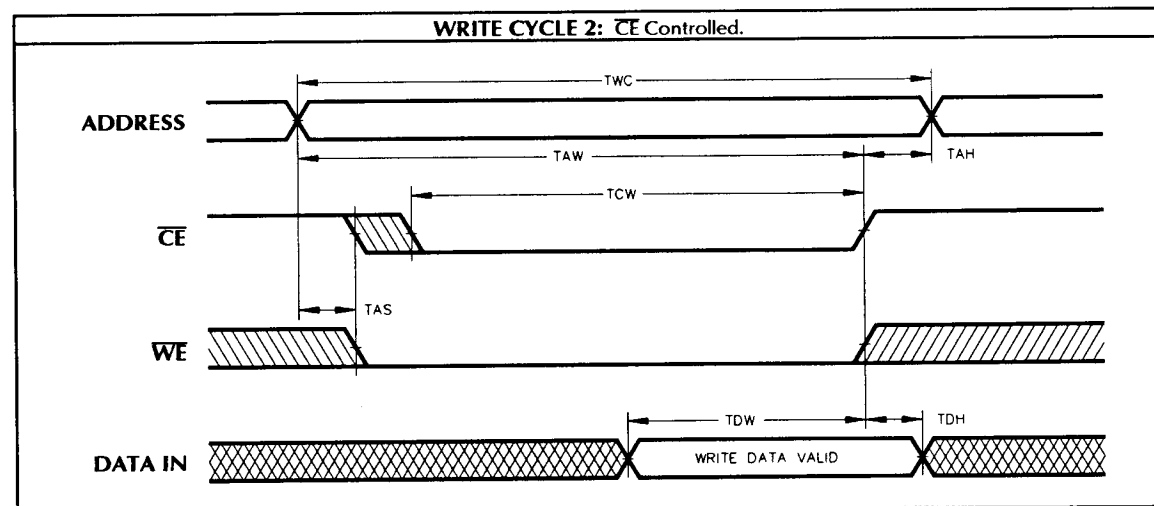
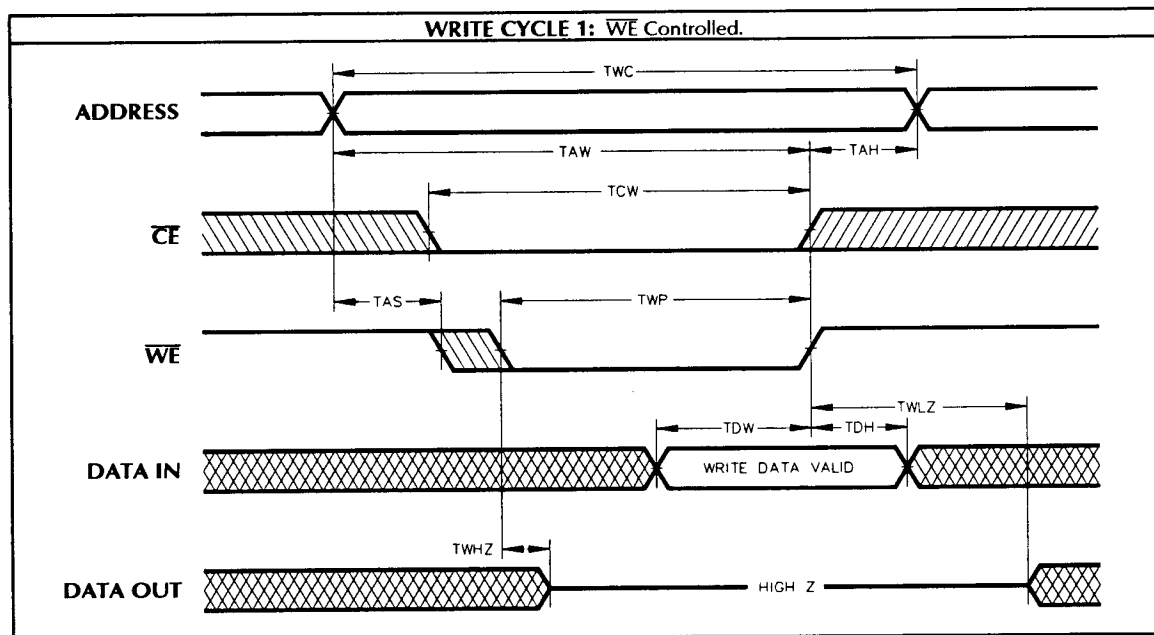
AC OPERATING CONDITIONS AND CHARACTERISTICS - READ CYCLE: Over operating ranges ⁶											
No.	Symbol	Parameter	-25		-35		-45		-55		Unit
			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	t _{RC}	Read Cycle Time	25		35		45		55		ns
2	t _{AA}	Address Access Time		25		35		45		55	ns
3	t _{CO}	Chip Enable to Output Valid		25		35		45		55	ns
4	t _{OH}	Output Hold for Address Change	5		5		5		5		ns
5	t _{CLZ}	Chip Enable to Output in LOW-Z ^{4, 5}	5		5		5		5		ns
6	t _{CHZ}	Chip Enable to Output in HIGH-Z ^{4, 5}		15		20		35		35	ns

AC OPERATING CONDITIONS AND CHARACTERISTICS - WRITE CYCLE: Over operating ranges ⁷											
No.	Symbol	Parameter	-25		-35		-45		-55		Unit
			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
10	t _{WC}	Write Cycle Time	25		35		45		55		ns
11	t _{AW}	Address Valid to End of Write	20		30		40		50		ns
12	t _{CW}	Chip Enable to End of Write	20		30		40		50		ns
13	t _{DW}	Data Valid to End of Write	25		25		25		25		ns
14	t _{DH}	Data Hold Time	0		0		0		0		ns
15	t _{WP}	Write Pulse Width	15		20		25		35		ns
16	t _{AS}	Address Set-up Time***	5		5		5		5		ns
17	t _{AH}	Address Hold Time	5		5		5		5		ns
18	t _{WHZ}	Write Enable to Output in HIGH-Z ^{4, 5}		20		20		25		25	ns
19	t _{WLZ}	Write Enable to Output in LOW-Z ^{4, 5}	5		5		5		5		ns

*** Valid for both Read and Write Cycles.



NOT RECOMMENDED FOR NEW DESIGNS



ORDERING INFORMATION

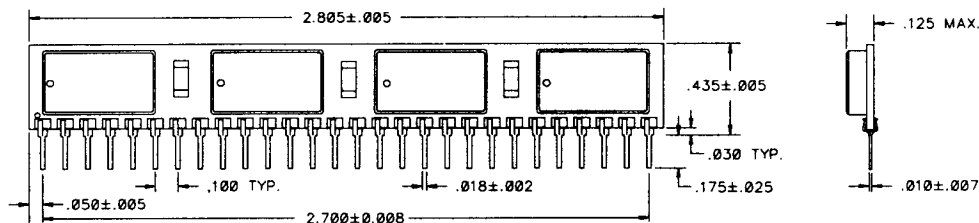
PREFIX	DEVICE TYPE	SPEED	GRADE	
DP	S8645	XX	X	
				C COMMERCIAL 0°C to +70°C
				I INDUSTRIAL -40°C to +85°C
				M MILITARY -55°C to +125°C
				B* MIL-PROCESSED -55°C to +125°C
		25		25ns
		35		35ns
		45		45ns
		55		55ns
				CMOS SRAM 64K X 4 MODULE

* B grade modules built with 883 devices.

NOTES:

1. All voltages are with respect to V_{SS} .
2. -3.0V min. for pulse width less than 20ns (V_{IL} min. = -0.5V at DC level).
3. Stresses greater than those under **ABSOLUTE MAXIMUM RATINGS** may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect reliability.
4. This parameter is guaranteed and not 100% tested.
5. Transition is measured at the point of $\pm 500\text{mV}$ from steady state voltage.
6. When $\overline{CE}$ is LOW and $\overline{WE}$ is HIGH, I/O pins are in the output state, and input signals of opposite phase to the outputs must not be applied.
7. The outputs are in a high impedance state when $\overline{WE}$ is LOW.

MECHANICAL DRAWING



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