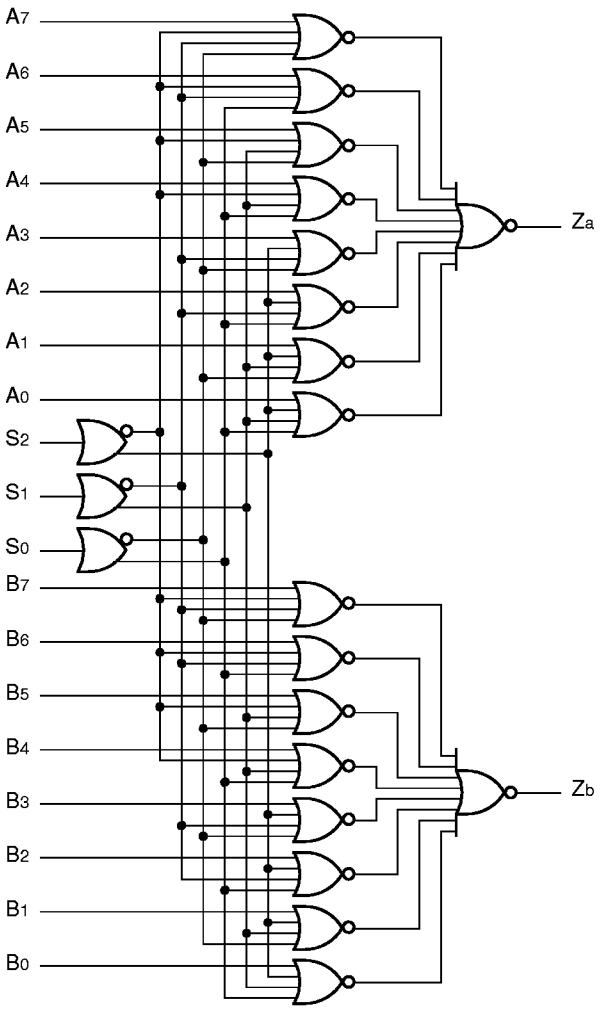
DUAL 8-INPUT MULTIPLEXER

FEATURES

- **Max. propagation delay of 900ps**
- **I_{EE} min. of –92mA**
- **Industry standard 100K ECL levels**
- **Extended supply voltage option: V_{EE} = –4.2V to –5.5V**
- **Voltage and temperature compensation for improved noise immunity**
- **Internal 75KΩ input pull-down resistors**
- **60% faster than National 300K at lower power**
- **Function and pinout compatible with National and Signetics F100K**
- **ESD protection of 2000V**
- **Available in 24-pin CERDIP, 24-pin CERPACK and 28-pin PLCC packages**

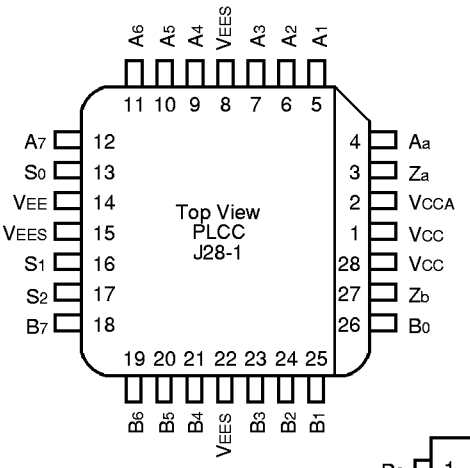
BLOCK DIAGRAM

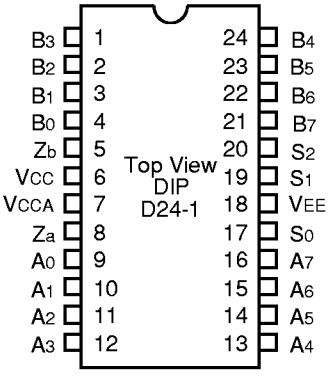


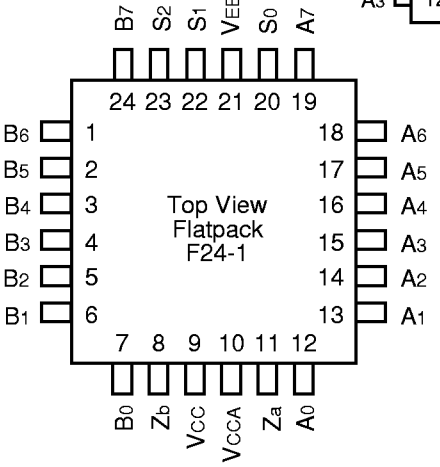
DESCRIPTION

The SY100S363 is a dual 8-input multiplexer designed for use in new, high-performance ECL systems. The three Data Select inputs (S_0, S_1, S_2) determine the bits from each of the inputs (A_n, B_n) that will be passed on through the two outputs. The same bit will be selected from the two groups of 8 inputs. The inputs on this device have 75KΩ pull-down resistors.

PIN CONFIGURATIONS







Rev.: F Amendment: /0
Issue Date: October, 1998

PIN NAMES

Pin	Function
$S_0 - S_2$	Data Select Inputs
$A_0 - A_7$	A Data Inputs
$B_0 - B_7$	B Data Inputs
Z_a, Z_b	Data Outputs
V_{EES}	V_{EE} Substrate
V_{CCA}	V_{CCO} for ECL Outputs

TRUTH TABLE[1]

Inputs											Outputs
Select			Data								
S_2	S_1	S_0	A_7/B_7	A_6/B_6	A_5/B_5	A_4/B_4	A_3/B_3	A_2/B_2	A_1/B_1	A_0/B_0	Z_a/Z_b
L L	L L	L L								L H	L H
L L	L L	H H							L H		L H
L L	H H	L L						L H			L H
L L	H H	H H					L H				L H
H H	L L	L L				L H					L H
H H	L L	H H			L H						L H
H H	H H	L L		L H							L H
H H	H H	H H	L H								L H

NOTE:

1. H = HIGH Voltage Level
   L = LOW Voltage Level
   Blank = X = Don't Care

DC ELECTRICAL CHARACTERISTICS

V_{EE} = –4.2V to –5.5V unless otherwise specified; V_{CC} = V_{CCA} = GND

Symbol	Parameter	Min.	Typ.	Max.	Unit	Condition
I_{IH}	Input HIGH Current S_n A_n, B_n	 — —	 — —	 200 200	µA	V_{IN} = V_{IH} (Max.)
I_{EE}	Power Supply Current	–92	–66	–45	mA	Inputs Open

AC ELECTRICAL CHARACTERISTICS

CERDIP

V_{EE} = –4.2V to –5.5V unless otherwise specified; V_{CC} = V_{CCA} = GND

		T_A = 0°C		T_A = +25°C		T_A = +85°C			
Symbol	Parameter	Min.	Max.	Min.	Max.	Min.	Max.	Unit	Condition
t_{PLH} t_{PHL}	Propagation Delay A_0 – A_7, B_0 – B_7 to Output	300	1100	300	1100	300	1100	ps	
t_{PLH} t_{PHL}	Propagation Delay S_0 – S_2 to Output	400	1500	400	1500	400	1500	ps	
t_{TLH} t_{THL}	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps	

CERPACK

V_{EE} = –4.2V to –5.5V unless otherwise specified; V_{CC} = V_{CCA} = GND

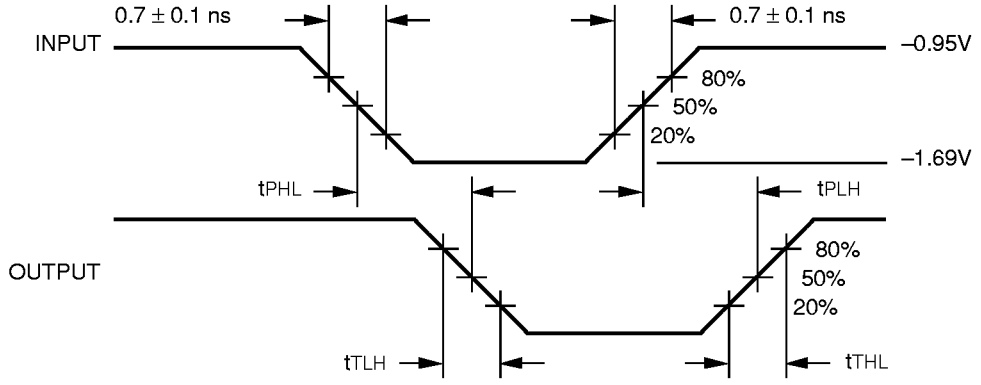
		T_A = 0°C		T_A = +25°C		T_A = +85°C			
Symbol	Parameter	Min.	Max.	Min.	Max.	Min.	Max.	Unit	Condition
t_{PLH} t_{PHL}	Propagation Delay A_0 – A_7, B_0 – B_7 to Output	300	1000	300	1000	300	1000	ps	
t_{PLH} t_{PHL}	Propagation Delay S_0 – S_2 to Output	400	1400	400	1400	400	1400	ps	
t_{TLH} t_{THL}	Transition Time 20% to 80%, 80% to 20%	300	1000	300	1000	300	1000	ps	

PLCC

V_{EE} = –4.2V to –5.5V unless otherwise specified; V_{CC} = V_{CCA} = GND

		T_A = 0°C		T_A = +25°C		T_A = +85°C			
Symbol	Parameter	Min.	Max.	Min.	Max.	Min.	Max.	Unit	Condition
t_{PLH} t_{PHL}	Propagation Delay A_0 – A_7, B_0 – B_7 to Output	300	900	300	900	300	900	ps	
t_{PLH} t_{PHL}	Propagation Delay S_0 – S_2 to Output	400	1300	400	1300	400	1300	ps	
t_{TLH} t_{THL}	Transition Time 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps	

TIMING DIAGRAM



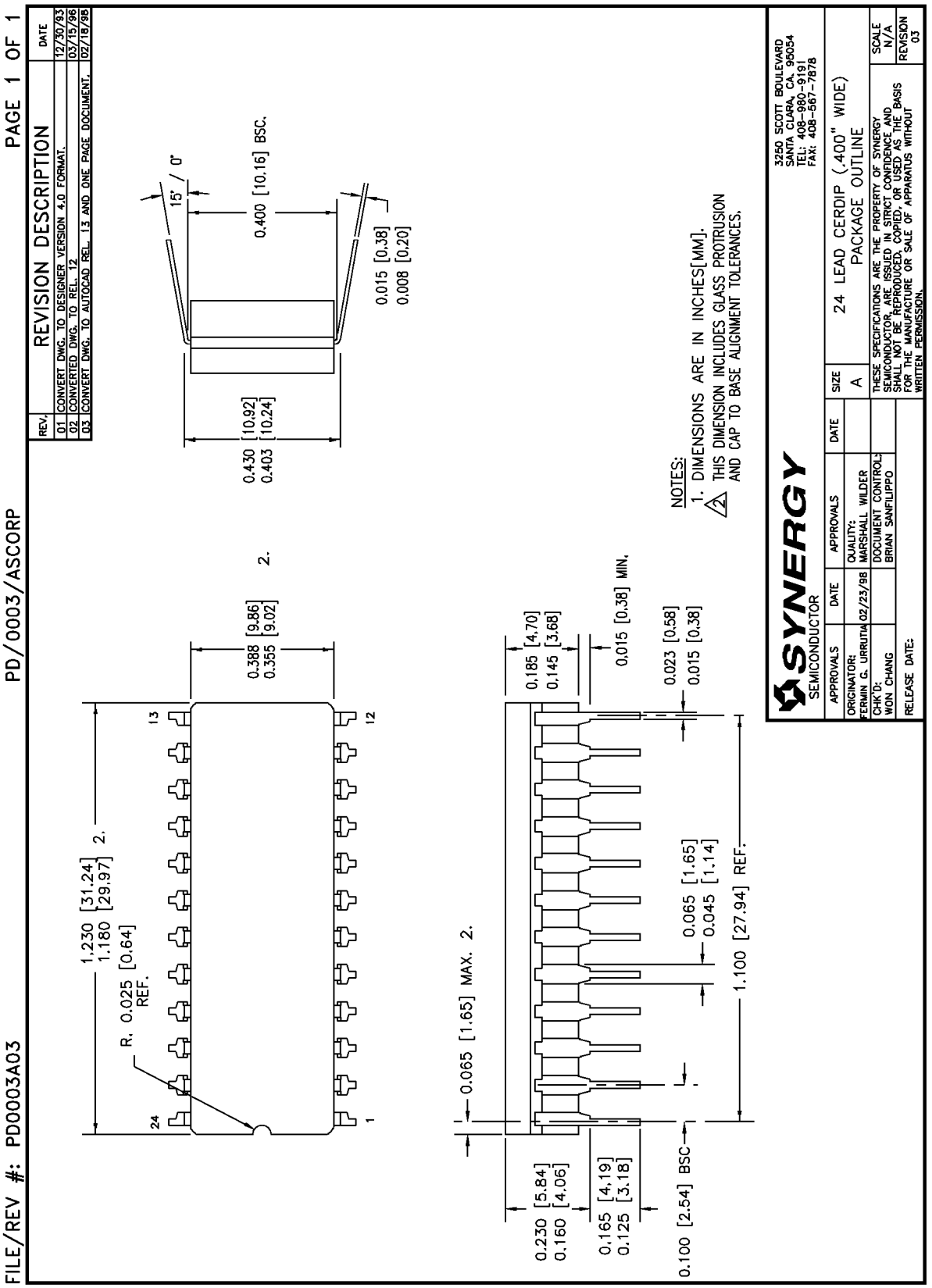
Propagation Delay and Transition Times

NOTE:
V_{EE} = –4.2V to –5.5V unless otherwise specified; V_{CC} = V_{CCA} = GND

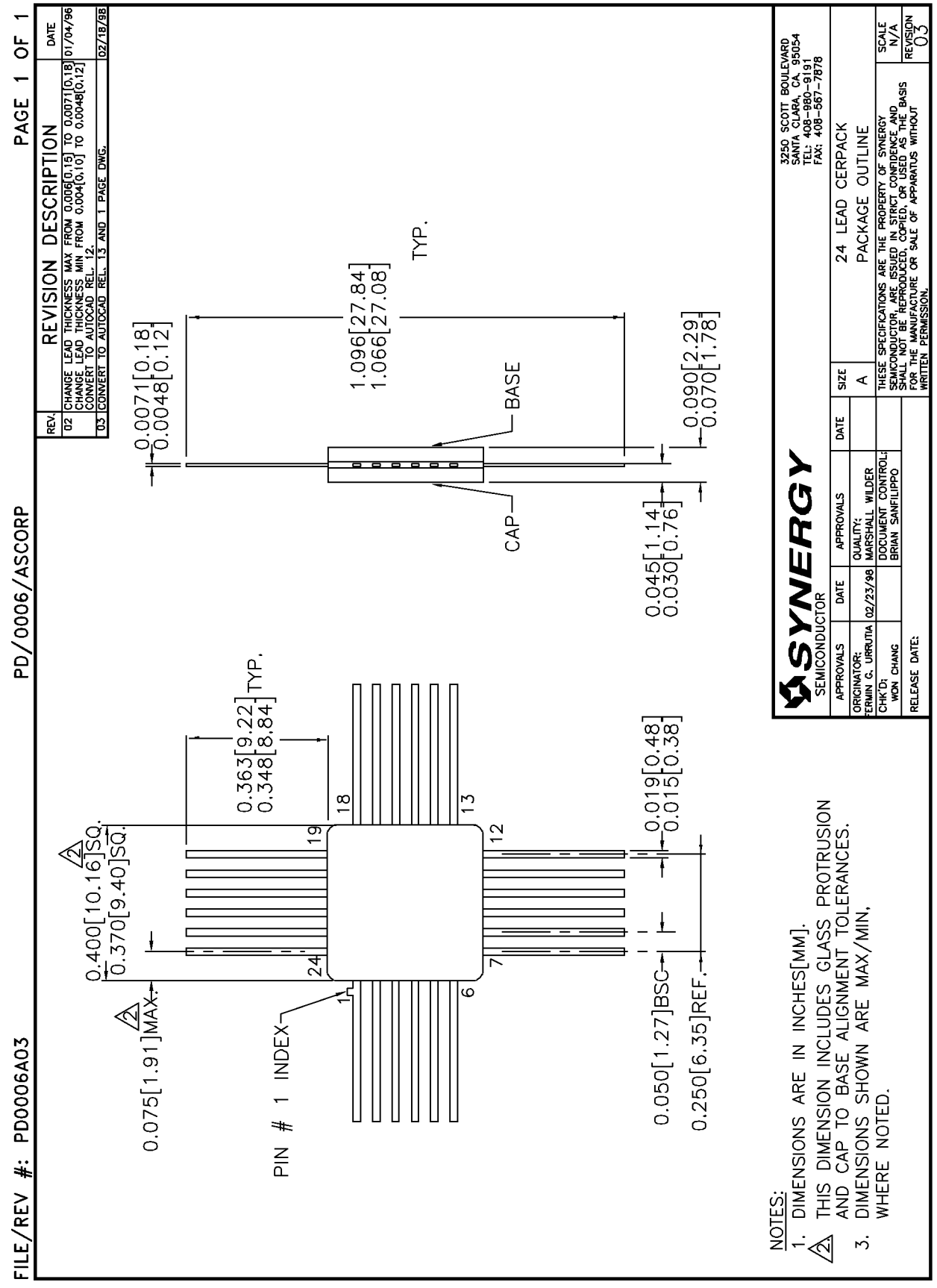
PRODUCT ORDERING CODE

Ordering Code	Package Type	Operating Range
SY100S363DC	D24-1	Commercial
SY100S363FC	F24-1	Commercial
SY100S363JC	J28-1	Commercial
SY100S363JCTR	J28-1	Commercial

24 LEAD CERDIP (D24-1)



24 LEAD CERPACK (F24-1)



28 LEAD PLASTIC LEADED CHIP CARRIER (J28-1)