



**16:1
MULTIPLEXER**

**SY10E164
SY100E164**

FEATURES

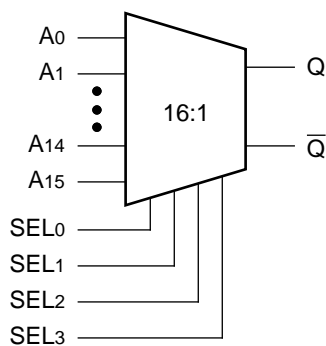
- 850ps Data Input to Output
- Extended 100E VEE range of -4.2V to -5.5V
- Differential output
- Fully compatible with industry standard 10KH, 100K ECL levels
- Internal 75KΩ input pull-down resistors
- Fully compatible with Motorola MC10E/100E164
- Available in 28-pin PLCC package

DESCRIPTION

The SY10/100E164 are 16:1 multiplexers with a differential output. The select inputs (SEL_{0,1,2,3}) control which one of the sixteen data inputs (A₀-A₁₅) is propagated to the output.

Special attention to the design layout results in a typical skew between the 16 inputs of only 50ps.

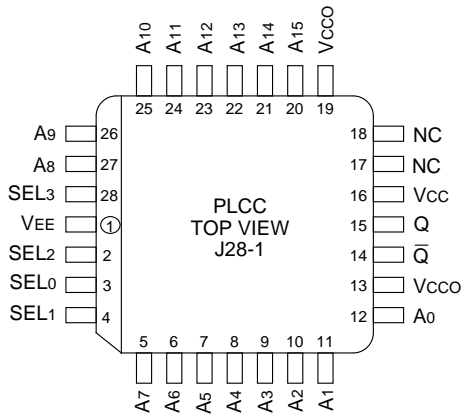
BLOCK DIAGRAM



PIN NAMES

Pin	Function
A ₀ - A ₁₅	Data Inputs
SEL[0:3]	Select Inputs
\bar{Q} , Q	Outputs
V _{CC0}	V _{CC} to Output

PACKAGE/ORDERING INFORMATION



28-Pin PLCC (J28-1)

Ordering Information⁽¹⁾

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY10E164JC	J28-1	Commercial	SY10E164JC	Sn-Pb
SY10E164JCTR ⁽²⁾	J28-1	Commercial	SY10E164JC	Sn-Pb
SY100E164JC	J28-1	Commercial	SY100E164JC	Sn-Pb
SY100E164JCTR ⁽²⁾	J28-1	Commercial	SY100E164JC	Sn-Pb
SY10E164JZ ⁽³⁾	J28-1	Commercial	SY10E164JZ with Pb-Free bar-line indicator	Matte-Sn
SY10E164JZTR ^(2, 3)	J28-1	Commercial	SY10E164JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E164JZ ⁽³⁾	J28-1	Commercial	SY100E164JZ with Pb-Free bar-line indicator	Matte-Sn
SY100E164JZTR ^(2, 3)	J28-1	Commercial	SY100E164JZ with Pb-Free bar-line indicator	Matte-Sn

Notes:

1. Contact factory for die availability. Dice are guaranteed at T_A = 25°C, DC Electricals only.
2. Tape and Reel.
3. Pb-Free package is recommended for new designs.

TRUTH TABLE

SEL3	SEL2	SEL1	SEL0	Data
L	L	L	L	A0
L	L	L	H	A1
L	L	H	L	A2
L	L	H	H	A3
L	H	L	L	A4
L	H	L	H	A5
L	H	H	L	A6
L	H	H	H	A7

SEL3	SEL2	SEL1	SEL0	Data
H	L	L	L	A8
H	L	L	H	A9
H	L	H	L	A10
H	L	H	H	A11
H	H	L	L	A12
H	H	L	H	A13
H	H	H	L	A14
H	H	H	H	A15

DC ELECTRICAL CHARACTERISTICS

VEE = VEE (Min.) to VEE (Max.); VCC = VCCO = GND

Symbol	Parameter	TA = 0°C			TA = +25°C			TA = +85°C			Unit	Condition
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
I _{IH}	Input HIGH Current	—	—	150	—	—	150	—	—	150	μA	—
I _{EE}	Power Supply Current	—	—	—	—	—	—	—	—	—	mA	—
		10E	59	71	59	71	59	71	68	81		
		100E	59	71	59	71	68	81				

AC ELECTRICAL CHARACTERISTICS

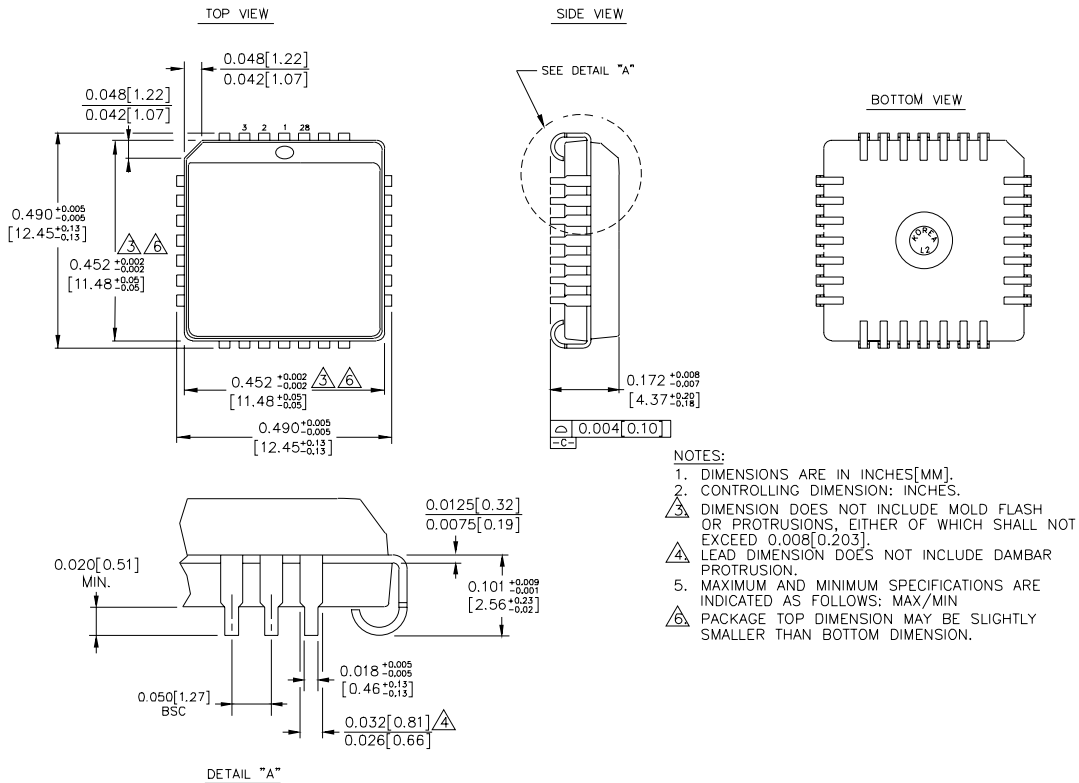
VEE = VEE (Min.) to VEE (Max.); VCC = VCCO = GND

Symbol	Parameter	TA = 0°C			TA = +25°C			TA = +85°C			Unit	Condition
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
t _{PD}	Propagation Delay to Output	—	—	—	—	—	—	—	—	—	ps	—
	A Input	350	600	850	350	600	850	350	600	850		
	SEL ₀	500	700	900	500	700	900	500	700	900		
	SEL ₁	400	675	900	400	675	900	400	675	900		
	SEL ₂	400	675	900	400	675	900	400	675	900		
	SEL ₃	400	550	700	400	550	700	400	550	700		
t _{skew}	Within-Device Skew	—	50	—	—	50	—	—	50	—	ps	1
t _r t _f	Rise/Fall Times 20–80%	275	400	550	275	400	550	275	400	550	ps	—

Note:

1. Within-device skew is defined as the difference in the A to Q delay between the 16 different A inputs.

28-PIN PLCC (J28-1)



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