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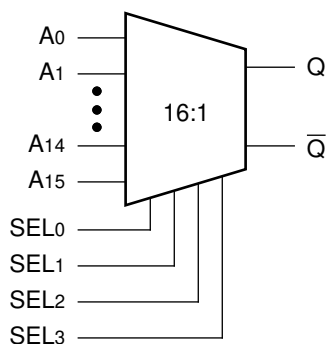

**16:1
MULTIPLEXER**
**SY10E164
SY100E164**
FEATURES

- 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 75K Ω input pull-down resistors
- Fully compatible with Motorola MC10E/100E164
- Available in 28-pin PLCC package

DESCRIPTION

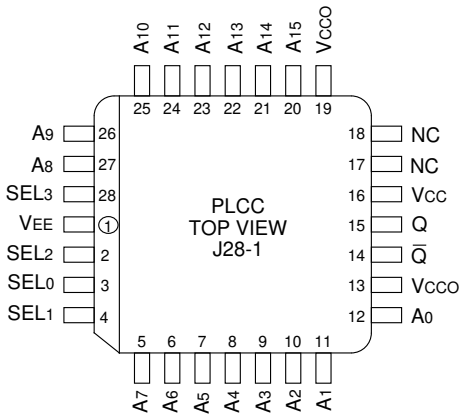
The SY10/100E164 are 16:1 multiplexers with a differential output. The select inputs (SEL_{0,1,2,3}) control which one of the sixteen data inputs (A₀-A₁₅) is propagated to the output.

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 $T_A = 25^\circ\text{C}$, 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	—	59	71	—	59	71	—	59	71	mA	—
		10E	59	71	59	71	59	71				
		100E	59	71	59	71	68	81				

AC ELECTRICAL CHARACTERISTICS

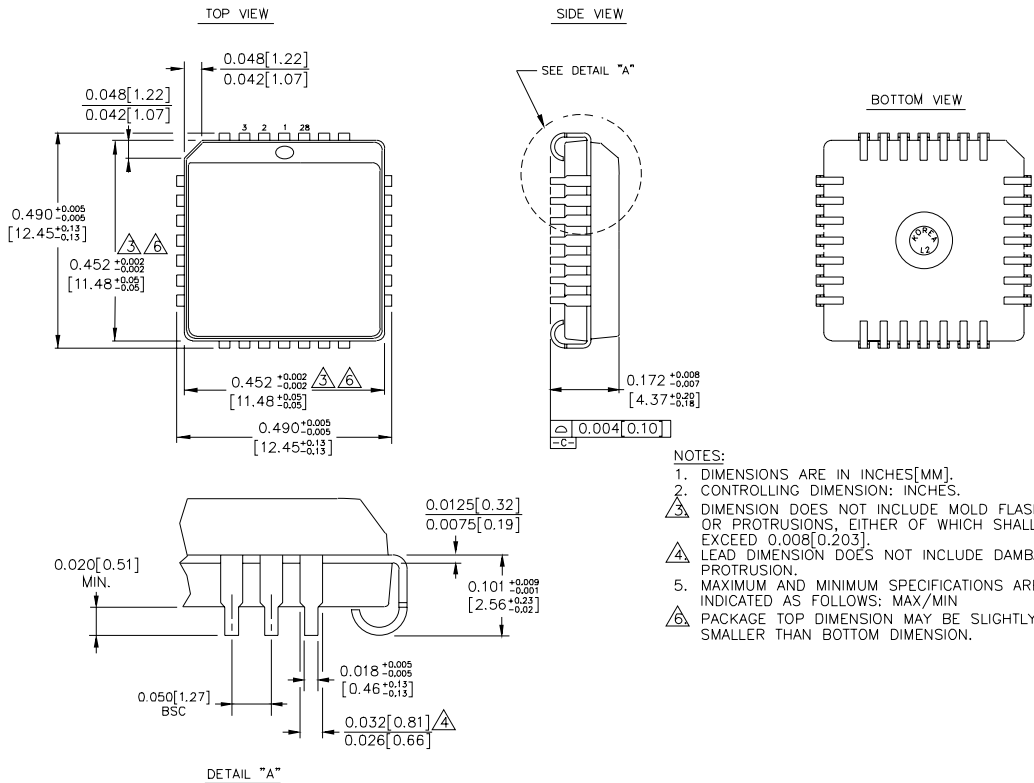
VEE = VEE (Min.) to VEE (Max.); VCC = VCCO = GND

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	350	600	850	350	600	850	350	600	850	ps	—
	A Input	500	700	900	500	700	900	500	700	900		
	SEL0	400	675	900	400	675	900	400	675	900		
	SEL1	400	675	900	400	675	900	400	675	900		
	SEL2	400	675	900	400	675	900	400	675	900		
	SEL3	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)



- NOTES:**
1. DIMENSIONS ARE IN INCHES[MM].
 2. CONTROLLING DIMENSION: INCHES.
 3. DIMENSION DOES NOT INCLUDE MOLD FLASH OR PROTRUSIONS, EITHER OF WHICH SHALL NOT EXCEED 0.008[0.203].
 4. LEAD DIMENSION DOES NOT INCLUDE DAMBAR PROTRUSION.
 5. MAXIMUM AND MINIMUM SPECIFICATIONS ARE INDICATED AS FOLLOWS: MAX/MIN
 6. PACKAGE TOP DIMENSION MAY BE SLIGHTLY SMALLER THAN BOTTOM DIMENSION.

Rev. 03

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