3-Bit Scannable Registered Address Driver

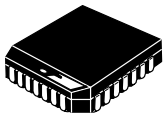
MC10E212
MC100E212

3-BIT SCANNABLE REGISTERED ADDRESS DRIVER

The MC10E/100E212 is a scannable registered ECL driver typically used as a fan-out memory address driver for ECL cache driving. In a VLSI array based CPU design, use of the E212 allows the user to conserve array output cell functionality and also output pins.

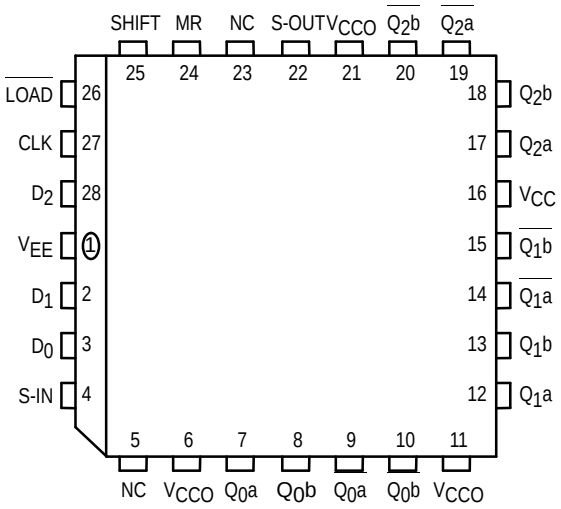
The input shift register is designed with control logic which greatly facilitates its use in boundary scan applications.

- Scannable Version E112 Driver
- 1025ps Max. CLK to Output
- Dual Differential Outputs
- Master Reset
- Extended 100E V_{EE} Range of – 4.2V to – 5.46V
- Internal 75kΩ Input Pulldown Resistors



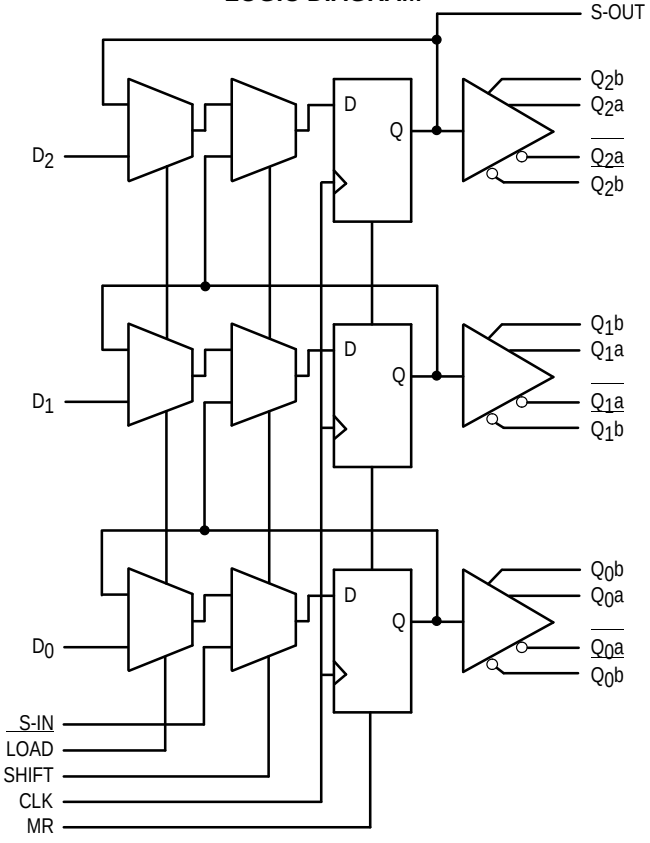
FN SUFFIX
PLASTIC PACKAGE
CASE 776-02

Pinout: 28-Lead PLCC (Top View)



* All V_{CC} and V_{CCO} pins are tied together on the die.

LOGIC DIAGRAM



PIN NAMES

Pin	Function
$D_0 – D_2$	Data Inputs
S-IN	Scan Input
LOAD	LOAD/HOLD Control
SHIFT	Scan Control
CLK	Clock
MR	Reset
S-OUT	Scan Output
Q[0:2]a, Q[0:2]b	True Outputs
Q[0:2]a, Q[0:2]b	Inverting Outputs

MOTOROLA

DC CHARACTERISTICS (V_{EE} = V_{EE}(min) to V_{EE}(max); V_{CC} = V_{CCO} = GND)

Symbol	Characteristic	0°C			25°C			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		80	96		80	96		80	96		
	100E		80	96		80	96		92	110		

AC CHARACTERISTICS (V_{EE} = V_{EE}(min) to V_{EE}(max); V_{CC} = V_{CCO} = GND)

Symbol	Characteristic	0°C			25°C			85°C			Unit	Condition
		min	typ	max	min	typ	max	min	typ	max		
t_{PLH}	Propagation Delay to Output										ps	
t_{PHL}	CLK	575	800	1025	575	800	1025	575	800	1025		
	MR	575	800	1025	575	800	1025	575	800	1025		
	CLK to S-OUT	575	800	1025	575	800	1025	575	800	1025		
t_s	Setup Time										ps	
	D	175	25		175	25		175	25			
	$\overline{\text{SHIFT}}$	150	– 50		150	– 50		150	– 50			
	LOAD	225	50		225	50		225	50			
	S-IN	150	– 50		150	– 50		150	– 50			
t_h	Hold Time										ps	
	D	250	25		250	25		250	25			
	$\overline{\text{SHIFT}}$	300	100		300	100		300	100			
	LOAD	225	0		225	0		225	0			
	S-IN	300	100		300	100		300	100			
t_{RR}	Reset Recovery	600	350		600	350		600	350		ps	
t_{SKEW}	Within-Device Skew		100			100			100		ps	1
t_{SKEW}	Within-Gate Skew		50			50			50		ps	2
t_r	Rise/Fall Times										ps	
t_f	20 - 80%	275	425	650	275	425	650	275	425	650		

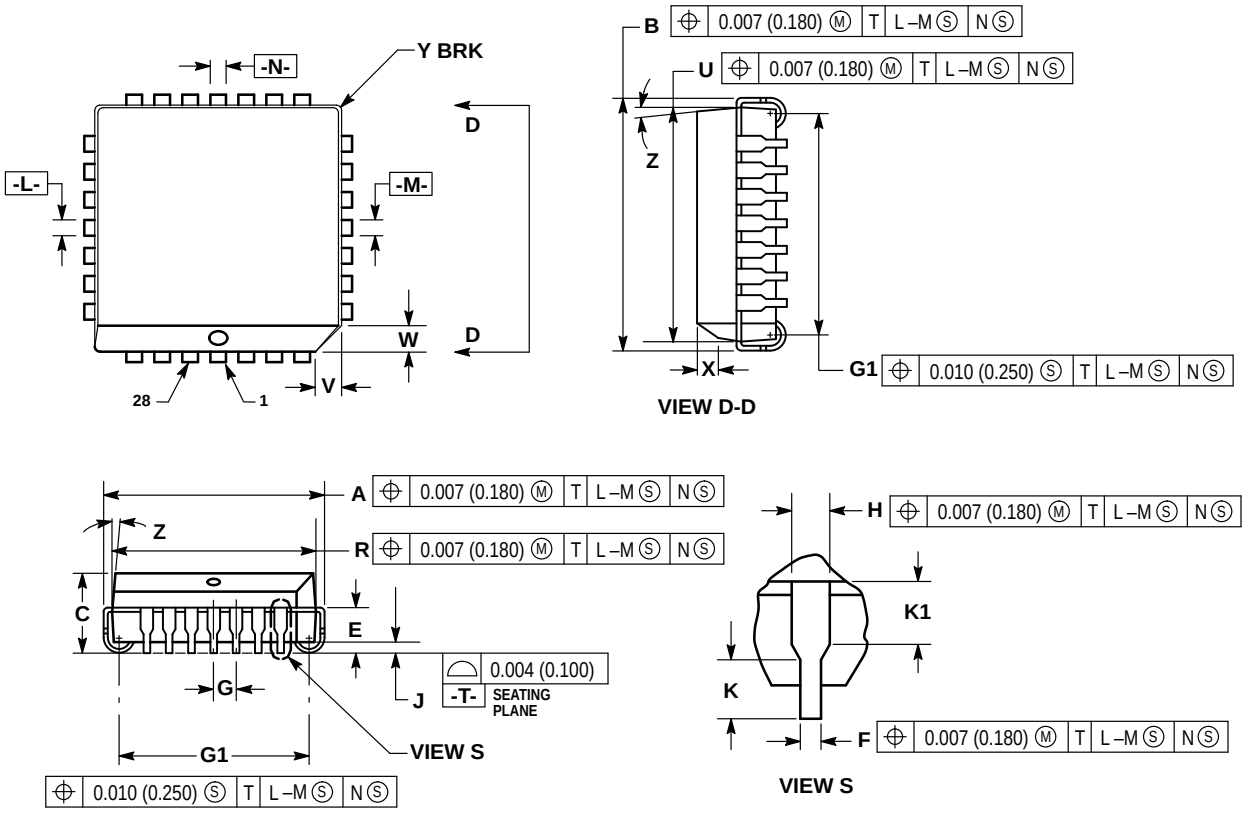
1. Within-device skew is defined as identical transitions on similar paths through a device.
2. Within-gate skew is defined as the difference in delays between various outputs of a gate when driven from the same input.

FUNCTION TABLE

$\overline{\text{LOAD}}$	SHIFT	MR	MODE
L	L	L	Load
H	L	L	Hold
X	H	L	Shift
X	X	H	Reset

OUTLINE DIMENSIONS

FN SUFFIX
PLASTIC PLCC PACKAGE
CASE 776–02
ISSUE D



NOTES:
1. DATUMS -L-, -M-, AND -N- DETERMINED WHERE TOP OF LEAD SHOULDER EXITS PLASTIC BODY AT MOLD PARTING LINE.
2. DIM G1, TRUE POSITION TO BE MEASURED AT DATUM -T-, SEATING PLANE.
3. DIM R AND U DO NOT INCLUDE MOLD FLASH. ALLOWABLE MOLD FLASH IS 0.010 (0.250) PER SIDE.
4. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
5. CONTROLLING DIMENSION: INCH.
6. THE PACKAGE TOP MAY BE SMALLER THAN THE PACKAGE BOTTOM BY UP TO 0.012 (0.300). DIMENSIONS R AND U ARE DETERMINED AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY EXCLUSIVE OF MOLD FLASH, TIE BAR BURRS, GATE BURRS AND INTERLEAD FLASH, BUT INCLUDING ANY MISMATCH BETWEEN THE TOP AND BOTTOM OF THE PLASTIC BODY.
7. DIMENSION H DOES NOT INCLUDE DAMBAR PROTRUSION OR INTRUSION. THE DAMBAR PROTRUSION(S) SHALL NOT CAUSE THE H DIMENSION TO BE GREATER THAN 0.037 (0.940). THE DAMBAR INTRUSION(S) SHALL NOT CAUSE THE H DIMENSION TO BE SMALLER THAN 0.025 (0.635).

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.485	0.495	12.32	12.57
B	0.485	0.495	12.32	12.57
C	0.165	0.180	4.20	4.57
E	0.090	0.110	2.29	2.79
F	0.013	0.019	0.33	0.48
G	0.050 BSC		1.27 BSC	
H	0.026	0.032	0.66	0.81
J	0.020	—	0.51	—
K	0.025	—	0.64	—
R	0.450	0.456	11.43	11.58
U	0.450	0.456	11.43	11.58
V	0.042	0.048	1.07	1.21
W	0.042	0.048	1.07	1.21
X	0.042	0.056	1.07	1.42
Y	—	0.020	—	0.50
Z	2°	10°	2°	10°
G1	0.410	0.430	10.42	10.92
K1	0.040	—	1.02	—

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