

# SY100S321JZ Datasheet



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DiGi Electronics Part Number SY100S321JZ-DG

Manufacturer Microchip Technology

Manufacturer Product Number SY100S321JZ

Description IC INVERTER 9CH 1-INP 28PLCC

Detailed Description Inverter IC 9 Channel 28-PLCC (11.48x11.48)



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

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# **Purchase and inquiry**

Manufacturer Product Number:	Manufacturer:
SY100S321JZ	Microchip Technology
Series:	Product Status:
100S	Discontinued at Digi-Key
Logic Type:	Number of Circuits:
Inverter	9
Number of Inputs:	Features:
1	
Voltage - Supply:	Current - Output High, Low:
-4.2V ~ -5.5V	
Input Logic Level - Low:	Input Logic Level - High:
Max Propagation Delay @ V, Max CL:	Operating Temperature:
700ps @ -5V, -	0°C ~ 85°C
Mounting Type:	Supplier Device Package:
Surface Mount	28-PLCC (11.48x11.48)
Package / Case:	Base Product Number:
28-LCC (J-Lead)	100S321

# **Environmental & Export classification**

8542.39.0001

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	2 (1 Year)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	



# LOW-POWER 9-BIT INVERTER

SY100S321

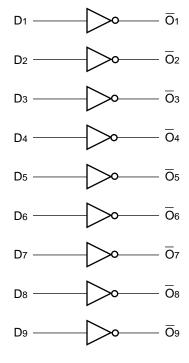
### **FEATURES**

- Max. propagation delay of 700ps
- IEE min. of -55mA
- Extended supply voltage option: VEE = -4.2V to -5.5V
- Voltage and temperature compensation for improved noise immunity
- 70% faster than Fairchild 300K at lower power
- Internal 75k $\Omega$  input pull-down resistors
- Function and pinout compatible with Fairchild F100K
- Available in 28-pin PLCC package

#### **DESCRIPTION**

The SY100S321 is a monolithic 9-bit inverter. The device contains nine inverting buffer gates with single input and output.

### **BLOCK DIAGRAM**

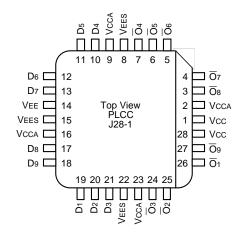


#### **PIN NAMES**

Pin	Function				
D1 – D9	Data Inputs				
$\overline{\mathbb{Q}}_1 - \overline{\mathbb{Q}}_9$	Data Outputs				
VEES	VEE Substrate				
VCCA	Vcco for ECL Outputs				

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## **PACKAGE/ORDERING INFORMATION**



28-Pin PLCC (J28-1)

## **Ordering Information**

Part Number	Package Type	Operating Range	Package Marking	Lead Finish
SY100S321JC	J28-1	Commercial	SY100S321JC	Sn-Pb
SY100S321JCTR <sup>(1)</sup>	J28-1	Commercial	SY100S321JC	Sn-Pb
SY100S321JZ <sup>(2)</sup>	J28-1	Commercial	SY100S321JZ with Pb-Free bar-line indicator	Matte-Sn
SY100S321JZTR <sup>(1, 2)</sup>	J28-1	Commercial	SY100S321JZ with Pb-Free bar-line indicator	Matte-Sn

#### Notes:

- 1. Tape and Reel.
- 2. Pb-Free package is recommended for new designs.

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## DC ELECTRICAL CHARACTERISTICS

VEE = -4.2V to -5.5V unless otherwise specified, VCC = VCCA = GND

Symbol	Parameter	Min.	Тур.	Max.	Unit	Condition
IIН	Input HIGH Current	_	_	200	μΑ	VIN = VIH (Max.)
IEE	Power Supply Current	<b>-</b> 55	-41	-25	mA	Inputs Open

## **AC ELECTRICAL CHARACTERISTICS**

VEE = -4.2V to -5.5V unless otherwise specified, VCC = VCCA = GND

		TA = 0°C		TA = +25°C		TA = +85°C			
Symbol	Parameter	Min.	Max.	Min.	Max.	Min.	Max.	Unit	Condition
tPLH tPHL	Propagation Delay <sup>(1)</sup> Data to Output	300	700	300	700	300	700	ps	
ttlh tthl	Transition Time <sup>(1)</sup> 20% to 80%, 80% to 20%	300	900	300	900	300	900	ps	
ts, G-G	Skew, Gate-to-Gate	_	200	_	200	_	200	ps	

#### NOTE:

<sup>1.</sup> Reference Figures 1 and 2

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## TEST CIRCUITRY<sup>(1)</sup>

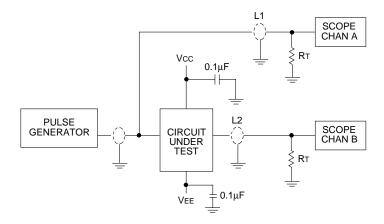


Figure 1. AC Test Circuit

#### Note:

1. VCC, VCCA = +2V, VEE = -2.5V.

L1 and L2 = equal length  $50\Omega$  impedance lines.

 $RT = 50\Omega$  terminator internal to scope.

Decoupling  $0.1 \mu F$  from GND to Vcc and VEE.

All unused outputs are loaded with  $50\Omega$  to GND.

 $C_L$  = Fixture and stray capacitance  $\leq$  3pF.

### **SWITCHING WAVEFORMS**

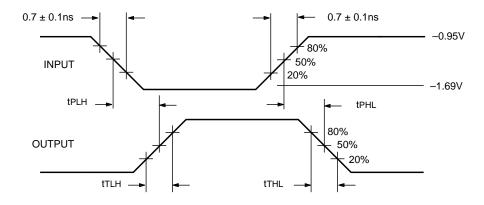


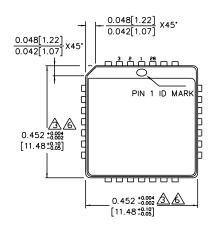
Figure 2. Propagation Delay and Transition Times

#### Note:

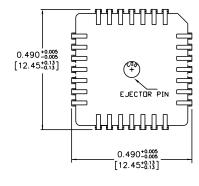
VEE = -4.2V to -5.5V unless otherwise specified, VCC = VCCA = GND

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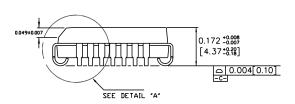
#### 28-PIN PLCC (J28-1)



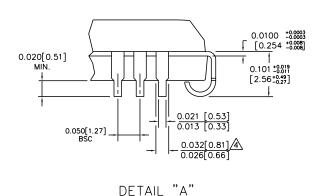
TOP VIEW



BOTTOM VIEW



SIDE VIEW



Rev. A

#### NOTES:

DIMENSIONS ARE IN INCHES [MM]. CONTROLLING DIMENSION: INCHES.

DIMENSION DOES NOT INCLUDE MOLD FLASH OR PROTRUSIONS, EITHER OF WHICH SHALL NOT EXCEED 0.008 [0.203].
LEAD DIMENSION DOES NOT INCLUDE DAMBAR PROTRUSION.

PROTRUSION.
MAXIMUM AND MINIMUM SPECIFICATIONS ARE INDICATED AS FOLLOWS: MAX/MIN

PACKAGE TOP DIMENSION MAY BE SMALLER THAN BOTTOM DIMENSION.

#### MICREL, INC. 2180 FORTUNE DRIVE SAN JOSE, CA 95131

TEL + 1 (408) 944-0800 FAX + 1 (408) 474-1000 WEB http://www.micrel.com

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