# Micrel Precision Edge® Timing and Distribution Reference Guide

## Clock Distribution

| Part Number | Fanout | Input | Output | Voltage | Max. Freq. (GHz) | Package | Description |
|---|---|---|---|---|---|---|---|
| SY54011R ***New!*** | 1:2 | ANY | CML | 1.2/1.8V | 3.2 | MLF-16 | Low Voltage CML Fanout Buffer/Translator. |
| SY56011R ***New!*** | 1:2 | ANY | CML | 1.2/1.8/2.5V | 4.5 | MLF-16 | Low Voltage EQ Fanout Buffer. |
| SY56020R ***New!*** | 1:4 | ANY | CML | 1.2/1.8/2.5V | 4.5 | MLF-16 | Low Voltage EQ Fanout Buffer. |
| SY58011U | 1:2 | ANY | CML | 2.5/3.3V | 7 | MLF-16 | Fanout Buffer/Translator. |
| SY58012U | 1:2 | ANY | LVPECL | 2.5/3.3V | 5 | MLF-16 | Fanout Buffer/Translator. |
| SY58013U | 1:2 | ANY | RS-LVPECL | 2.5/3.3V | 6 | MLF-16 | Fanout Buffer/Translator with 400mV Output Swing. |
| SY58020U | 1:4 | ANY | CML | 2.5/3.3V | 6 | MLF-16 | Fanout Buffer/Translator. |
| SY58021U | 1:4 | ANY | LVPECL | 2.5/3.3V | 4 | MLF-16 | Fanout Buffer/Translator. |
| SY58022U | 1:4 | ANY | RS-LVPECL | 2.5/3.3V | 5.5 | MLF-16 | Fanout Buffer/Translator with 400mV Output Swing. |
| SY58031U | 1:8 | ANY | CML | 2.5/3.3V | 5 | MLF-32 | Fanout Buffer. |
| SY58032U | 1:8 | ANY | LVPECL | 2.5/3.3V | 4 | MLF-32 | Fanout Buffer. |
| SY58033U | 1:8 | ANY | RS-LVPECL | 2.5/3.3V | 5.5 | MLF-32 | Fanout Buffer with 400mV Output Swing. |
| SY58034U | 2:6 | ANY | CML | 2.5/3.3V | 6 | MLF-32 | Fanout Buffer w/2:1 MUX Input. |
| SY58035U | 2:6 | ANY | LVPECL | 2.5/3.3V | 4.5 | MLF-32 | Fanout Buffer w/2:1 MUX Input. |
| SY58036U | 2:6 | ANY | RS-LVPECL | 2.5/3.3V | 6 | MLF-32 | Fanout Buffer w/2:1 MUX Input and 400mV Output Swing. |
| SY58606U | 1:2 | ANY | CML | 2.5/3.3V | 2.5 | MLF-16 | Fanout Buffer with Fail-Safe Input. |
| SY58607U | 1:2 | ANY | LVPECL | 2.5/3.3V | 2.5 | MLF-16 | Fanout Buffer with Fail-Safe Input. |
| SY58608U | 1:2 | ANY | LVDS | 2.5V | 2 | MLF-16 | Fanout Buffer with Fail-Safe Input. |
| SY89112U | 2:12 | ANY | LVPECL | 2.5/3.3V | 3 | MLF-44 | Improved EP111 Replacement. |
| SY89113U | 2:12 | ANY | LVDS | 2.5V | 1 | MLF-44 | Fanout Buffer. |
| SY89200U | 1:8 | ANY | LVDS | 2.5V | 1.5 | MLF-32 | 3 Banks (÷1, ÷2, ÷4). |
| SY89202U | 1:8 | ANY | LVPECL | 2.5/3.3V | 1.5 | MLF-32 | 3 Banks (÷1, ÷2, ÷4). |
| SY89311U | 1:2 | ECL/PECL/LVPECL/LVECL | ECL/PECL/LVPECL/LVECL | 2.5/3.3/5V | 3 | MLF-8 | Differential Fanout Buffer. |
| SY89467U | 2:20 | ANY | LVPECL | 2.5/3.3V | 1.5 | TQFP-64 | Fanout Buffer with Fail-Safe Input. |
| SY89468U | 2:20 | ANY | LVDS | 2.5V | 1.5 | TQFP-64 | Fanout Buffer with Fail-Safe Input. |
| SY89645L | 1:4 | LVCMOS/LVTTL | LVDS | 3.3V | 0.65 | TSSOP-16 | LVCMOS/LVTTL-to-LVDS Fanout Buffer. |
| SY89808L | 1:9 | LVPECL/HSTL | HSTL | 3.3V | 0.5 | TQFP-32 | Fanout Buffer. |
| SY89809L | 1:9 | LVPECL/HSTL | HSTL | 3.3V | 0.5 | TQFP-32 | Bus Clock Driver. |
| SY89823L | 1:22 | LVPECL/HSTL | HSTL | 3.3V | 0.5 | TQFP-64 | Fanout Buffer/Translator. |
| SY89824L | 1:22 | LVPECL/HSTL | HSTL | 3.3V | 0.5 | TQFP-64 | Bus Clock Driver. |
| SY89825U | 1:22 | LVPECL/LVDS | LVPECL | 2.5/3.3V | 1 | TQFP-64 | Bus Clock Driver/Translator. |
| SY89826L | 1:22 | LVPECL/LVDS | LVDS | 3.3V | 1 | TQFP-64 | Fanout Buffer/Translator. |
| SY89827L | Dual 1:10 | LVPECL/HSTL | HSTL | 3.3V | 0.5 | TQFP-64 | Fanout Buffer/Translator. |
| SY89828L | Dual 1:10 | LVPECL/LVDS | LVDS | 3.3V | 1 | TQFP-64 | Fanout Buffer/Translator. |
| SY89829u | Dual 1:10 | LVPECL/LVDS | LVPECL | 2.5/3.3V | 2 | TQFP-64 | Clock Driver. |
| SY89830U | 2:4 | ECL/PECL/LVPECL/LVECL | ECL/PECL/LVPECL/LVECL | 2.5/3.3/5V | 2.5 | TSSOP-16 | Clock Driver with 2:1 MUX Input. |
| SY89831U | 1:4 | ANY | LVPECL | 2.5/3.3V | 2.0 | MLF-16 | Fanout Buffer/Translator. |
| SY89832U | 1:4 | ANY | LVDS | 2.5V | 2.0 | MLF-16 | Fanout Buffer/Translator. |
| SY89833L | 1:4 | ANY | LVDS | 3.3V | 2 | MLF-16 | Fanout Buffer/Translator. |
| SY89834U | 2:4 | LVTTL | LVPECL | 2.5/3.3V | 1 | MLF-16 | Fanout Buffer with 2:1 MUX Input. |
| SY89837U | 2:8 RPE | ANY | LVPECL | 2.5/3.3V | 1.5 | MLF-32 | RPE, FSI Fanout with 2:1 MUX Input. |
| SY89838U | 2:8 RPE | ANY | LVDS | 2.5V | 1.5 | MLF-32 | RPE, FSI Fanout with 2:1 MUX Input. |
| SY89843U | 2:2 RPE | ANY | LVPECL | 2.5/3.3V | 1.5 | MLF-24 | RPE, FSI Fanout with 2:1 MUX Input. |



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## Clock Distribution (continued)

| Part Number | Fanout | Input | Output | Voltage | Max. Freq. (GHz) | Package | Description |
|---|---|---|---|---|---|---|---|
| SY89844U | 2:2 RPE | ANY | LVDS | 2.5V | 1.5 | MLF-24 | RPE, FSI Fanout with 2:1 MUX Input. |
| SY89464U | 2:10 RPE | ANY | LVPECL | 2.5/3.3V | 2 | MLF-44 | RPE, FSI Input MUX with 2:1 MUX Input. |
| SY89465U | 2:10 RPE | ANY | LVDS | 2.5V | 2 | MLF-44 | RPE, FSI Input MUX with 2:1 MUX Input. |
| SY89473U | 2:2 | ANY | LVPECL | 2.5/3.3V | 3 | MLF-24 | Fanout Buffer/Translator. |
| SY89474U | 2:2 | ANY | LVDS | 2.5V | 2.5 | MLF-24 | Fanout Buffer/Translator. |
| SY89846U | 2:5 | ANY | LVPECL | 2.5/3.3V | 1.5 | MLF-32 | Fanout Buffer with Fail-Safe Input. |
| SY89847U | 2:5 | ANY | LVDS | 2.5V | 1.5 | MLF-32 | Fanout Buffer with Fail-Safe Input. |
| SY89850U | 1:1 | ANY | LVPECL | 2.5/3.3V | 4 | MLF-8 | LVPECL Line Driver/Receiver. |
| SY89851U | 1:2 | ANY | LVPECL | 2.5/3.3V | 3 | MLF-16 | Low Power Fanout Buffer/Trans. |
| SY89854U | 1:4 | ANY | LVPECL | 2.5/3.3V | 3.5 | MLF-16 | Low Power Fanout Buffer/Trans. |
| SY89856U | 2:6 | ANY | LVPECL | 2.5/3.3V | 3 | MLF-32 | Low Power Fanout Buffer with 2:1 MUX Input. |
| SY89858U | 1:8 | ANY | LVPECL | 2.5/3.3V | 3 | MLF-32 | Low Power Fanout Buffer. |
| SY897132L ***New!*** | 1:2 | LVPECL | LVPECL | 3.3V | 0.8 | TSSOP-28 | Link Replicator. |
| SY898533L ***New!*** | 1:4 | LVPECL | LVPECL | 3.3V | 0.7 | TSSOP-20 | Fanout Buffer. |
| SY10/100E111 | 1:9 | PECL | PECL | 5V | 0.75 | PLCC-28 | With Enable. |
| SY10/100E111A/L | 1:9 | PECL | PECL | 3.3/5V | 0.75 | PLCC-28 | |
| SY10/100E111AE/LE | 1:9 | PECL | PECL | 3.3/5V | 0.75 | PLCC-28 | With Enable. |
| SY10/100EL11V | 1:2 | PECL | PECL | 3.3/5V | 0.75 | SOIC-8 | |
| SY10/100EL15 | 1:4 | PECL | PECL | 5V | 0.75 | SOIC-16 | With Enable. |
| SY100EL14V | 1:5 | PECL | PECL | 3.3/5V | 0.75 | SOIC-20 | With Enable. |
| SY100EL15L | 1:4 | PECL | PECL | 3.3V | 0.75 | SOIC-16 | With Enable. |
| SY100HA643 | 1:8 | ECL | TTL | 5/-5V | 0.75 | PLCC-28 | With Enable. |
| SY100S811 | 1:9 | PECL/TTL | PECL | 5V | 0.75 | PLCC/SOIC-28 | With Enable. |
| SY100S815 | 1:4 | PECL/TTL | PECL | 5V | 0.75 | SOIC-16 | With Enable. |

## Clock Dividers/Generators

| Part Number | Fanout Buffer | Input | Output | Voltage | Max. Freq. (GHz) | Package | Description |
|---|---|---|---|---|---|---|---|
| SY89200U | Y | ANY | LVDS | 2.5V | 1.5 | MLF-32 | 3 Banks (÷1, ÷2, ÷4) 8 Total. |
| SY89202U | Y | ANY | LVPECL | 2.5/3.3V | 1.5 | MLF-32 | 3 Banks (÷1, ÷2, ÷4) 8 Total. |
| SY89218U | Y | ANY | LVDS | 2.5V | 1.5 | TQFP-64 | 4 Banks (÷1, ÷2, ÷4) 15 Total FSI Input. |
| SY89221U | Y | ANY | LVPECL | 2.5/3.3V | 1.5 | TQFP-64 | 4 Banks (÷1, ÷2, ÷4) 15 Total FSI Input. |
| SY89228U | N | ANY | LVPECL | 2.5/3.3V | 1 | MLF-16 | ÷3, ÷5 FSI Input. |
| SY89229U | N | ANY | LVDS | 2.5V | 1 | MLF-16 | ÷3, ÷5 FSI Input. |
| SY89230U | N | ANY | LVPECL | 2.5/3.3V | 3.2 | MLF-16 | ÷3, ÷5. |
| SY89231U | N | ANY | LVDS | 2.5V | 3.2 | MLF-16 | ÷3, ÷5. |
| SY89312V | N | ECL/PECL | ECL/PECL | 3.3/5V | 4 | MLF-8 | ÷2. |
| SY89313V | N | ECL/PECL | ECL/PECL | 3.3/5V | 4 | MLF-8 | ÷4. |
| SY89871U | Y | ANY | LVPECL | 2.5/3.3V | 2.5 | MLF-16 | 2 Banks (÷1, ÷2, ÷4, ÷8, ÷16). |
| SY89872U | Y | ANY | LVDS | 2.5V | 2 | MLF-16 | 2 Banks (÷1, ÷2, ÷4, ÷8, ÷16). |
| SY89873L | Y | ANY | LVDS | 3.3V | 2 | MLF-16 | 2 Banks (÷1, ÷2, ÷4, ÷8, ÷16). |
| SY89874U | Y | ANY | LVPECL | 2.5/3.3V | 2.5 | MLF-16 | ÷1, ÷2, ÷4, ÷8, ÷16. |
| SY89875U | Y | ANY | LVDS | 2.5V | 2 | MLF-16 | ÷1, ÷2, ÷4, ÷8, ÷16. |
| SY89876L | Y | ANY | LVDS | 3.3V | 2 | MLF-16 | ÷1, ÷2, ÷4, ÷8, ÷16. |
| SY100S834L | N | ECL/PECL/LVPECL | ECL/PECL | 3.3/5V | — | SOIC-16 | (÷1, 2, 4) or (÷2, 4, 8). |
| SY100S838L | N | ECL/PECL/LVPECL | ECL/PECL | 3.3/5V | — | SOIC-20 | (÷1, 2/3) or (÷2, 4/6). |
| SY100S839V | N | ECL/PECL/LVPECL | ECL/PECL | 3.3/5V | — | SOIC-20 | (÷2/4) or (÷4/5/6). |
| SY10/100EL32V | N | ECL | ECL | 3.3/5V | 3 | SOIC-8 | ÷2. |
| SY10/100EL33/L | N | ECL | ECL | 3.3/5V | 4 | SOIC-8 | ÷4. |
| SY10/100EL34/L | Y | ECL | ECL | 3.3/5V | — | SOIC-16 | 3 Outputs ÷2, 4, or 8. |
| SY10/100EL38/L | Y | ECL | ECL | 3.3/5V | — | SOIC-20 | 2 Banks (÷2) ,(÷4/6). |



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## Clock Synthesis

| Part Number | Input | Output | Voltage | Min Freq. (MHz) | Max Freq. (MHz) | Package | Description |
|---|---|---|---|---|---|---|---|
| SY87729L | XTAL | PECL | 3.3V | 10 | 365 | TQFP-32 | AnyClock® Fractional-N Synthesizer. |
| SY87739L | XTAL | PECL | 3.3V | 10 | 730 | TQFP-32 | AnyClock® Fractional-N Synthesizer. |
| SY89426 | TTL | PECL | 5V | 33 | 622 | PLCC-28 | SONET OC-12/OC -3. |
| SY89529L | XTAL | LVPECL | 3.3V | — | 200 | TQFP-32, SOIC-28 | Spectrum Clock Synthesizer. |
| SY89531L | XTAL | HSTL/LVPECL | 3.3V | 33 | 500 | TQFP-64 | XTAL Input Synthersizer. |
| SY89532L | XTAL | LVPECL | 3.3V | 33 | 500 | TQFP-64 | XTAL Input Synthesizer. |
| SY89533L | XTAL | LVDS/LVPECL | 3.3V | 33 | 500 | TQFP-64 | XTAL Input Synthesizer. |
| SY89534L | ANYX | LVPECL | 3.3V | 33 | 500 | TQFP-64 | Reference Input Synthesizer. |
| SY89535L | ANYX | LVDS/LVPECL | 3.3V | 33 | 500 | TQFP-64 | Reference Input Synthesizer. |
| SY89536L | ANYX | HSTL/LVPECL | 3.3V | 33 | 500 | TQFP-64 | Reference Input Synthesizer. |
| SY89537L | ANYX | LVDS/LVPECL | 3.3V | 73 | 750 | MLF-44 | Reference and XTAL Prog. Frequency. |
| SY89538L | ANYX | LVDS/LVPECL | 3.3V | 73 | 750 | TQFP-64 | Reference Input, Multiple Banks, Zero Delay. |
| SY89610L | ANY | CML | 3.3V | 19 | 694 | MLF-32 | Clock Synthesizer with Ultra Low Jitter. |

## Receivers/Buffers/Drivers

| Part Number | Input | Output | Voltage | Max. Data Rate (Gbps) | Max. Freq. (GHz) | Package | Description |
|---|---|---|---|---|---|---|---|
| SY54016R ***New!*** | ANY | CML | 1.2/1.8V | 3.2 | 2.5 | MLF-8 (2 x 2mm) | Low Voltage CML Translator with Fail-Safe Input. |
| SY54016AR ***New!*** | ANY | CML | 1.2/1.8V | 3.2 | 3.2 | MLF-8 (2 x 2mm) | Low Voltage CML Translator. |
| SY56016R ***New!*** | ANY | CML | 1.2/1.8/2.5V | 6.4 | 5 | MLF-10 (2 x 2mm) | Differential Line Driver with EQ. |
| SY56216R ***New!*** | ANY | CML | 1.2/1.8/2.5V | 6.4 | 5 | MLF-16 (3 x 3mm) | Dual Channel EQ Receiver. |
| SY58016L | CML/PECL | CML | 3.3V | 10.7 | 7 | MLF-16 (3 x 3mm) | Differential CML Line Driver/Receiver. |
| SY58600U | ANY | CML | 2.5/3.3V | 10.7 | 7 | MLF-8 (2 x 2mm) | Line Driver/Receiver. |
| SY58601U | ANY | LVPECL | 2.5/3.3V | 5 | 5 | MLF-8 (2 x 2mm) | Line Driver/Receiver. |
| SY58602U | ANY | RS-LVPECL | 2.5/3.3V | 10.7 | 7 | MLF-8 (2 x 2mm) | Line Driver with 400mV Output Swing. |
| SY58603U | ANY | CML | 2.5/3.3V | 4.25 | 2.5 | MLF-8 (2 x 2mm) | Line/Driver Receiver with Fail-Safe Input. |
| SY58604U | ANY | LVPECL | 2.5/3.3V | 3.2 | 2.5 | MLF-8 (2 x 2mm) | Line/Driver Receiver with Fail-Safe Input. |
| SY58605U | ANY | LVDS | 2.5V | 3.2 | 2 | MLF-8 (2 x 2mm) | Line/Driver Receiver with Fail-Safe Input. |
| SY58620L | ANY | CML | 3.3V | 4.25 | 2.5 | MLF-24 (4 x 4mm) | Backplane Transceiver. |
| SY89206V | ECL/PECL | ECL/PECL | 3.3/5V | — | 1 | MLF-8 (2 x 2mm) | Receiver/Buffer-100k Comp. |
| SY89207L | LVECL/LVPECL | PECL | 3.3V | — | 0.8 | MSOP-10 | Amp. w/Low-Gain Feedback. |
| SY89216V | ECL/PECL | ECL/PECL | 3.3/5V | — | 1 | MLF-8 (2 x 2mm) | Receiver/Buffer-10k Comp. |
| SY89250V | ECL/PECL | ECL/PECL | 3.3/5V | — | — | MLF-8 (2 x 2mm) | Enhanced Differential Receiver. |
| SY89306V | ECL/PECL | ECL/PECL | 3.3/5V | — | 2.5 | MLF-8 (2 x 2mm) | Receiver/Buffer-100k Comp. |
| SY89307V | ECL/PECL | ECL/PECL | 3.3/5V | 2.5 | — | MLF-8 (2 x 2mm) | Variable Output Swing Differential Receiver. |
| SY89316V | ECL/PECL | ECL/PECL | 3.3/5V | — | 2.5 | MLF-8 (2 x 2mm) | Differential Receiver/Buffer-10k Comp. |
| SY89835U | LVDS | LVDS | 2.5V | 3.2 | 2 | MLF-8 (2 x 2mm) | Buffer with Fail-Safe Input. |
| SY89850U | CML/PECL/LVDS | LVPECL | 2.5/3.3V | 3.2 | 4 | MLF-8 (2 x 2mm) | Low Power. |
| SY10/100E112 | ECL/PECL | ECL/PECL | 5V | — | — | PLCC-28 | Quad Driver. |
| SY10/100E116 | ECL/PECL | ECL/PECL | 5V | — | — | PLCC-28 | Quint Differential Line Driver. |
| SY10/100E416 | ECL/PECL | ECL/PECL | 5V | — | — | PLCC-28 | Quint Differential Line Driver. |
| SY10/100EL12 | ECL/PECL | ECL/PECL | 5V | — | — | SOIC-8 | Low Impedance Driver. |
| SY10/100EL16V | ECL/LVPECL | ECL/LVPECL | 3.3/5V | — | — | SOIC/MSOP-8 | Differential Receiver. |
| SY10/100EL16VA-VF | ECL/LVPECL | ECL/LVPECL | 3.3/5V | — | — | SOIC/MSOP-8 | Enhanced Differential Receiver. |
| SY10/100EL16VS | ECL/LVPECL | ECL/LVPECL | 3.3/5V | — | — | SOIC/MSOP-8 | Variable Output Swing Receiver. |
| SY100EL17V | ECL/LVPECL | ECL/LVPECL | 3.3/5V | — | — | SOIC-20 | Quad Differential Receiver. |
| SY10EL1189 | ECL/PECL | ECL/PECL | 5V | — | — | SOIC-16 | FC Coaxial Cable Driver. |
| SY10EL89 | ECL/LVPECL | ECL/LVPECL | 3.3/5V | — | — | SOIC-8 | Coaxial Cable Driver. |
| SY10/100EP16U | ECL/PECL | ECL/PECL | 2.5/3.3V | 2.5 | 4 | MLF-8 (2 x 2mm) | ECL Differential Receiver/Driver. |
| SY100EP16V | ECL/PECL | ECL/PECL | 3.3/5V | 2.5 | 4 | MLF-8 (2 x 2mm) | ECL Differential Receiver/Driver. |



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## Skew Management

| Part Number | Input | Output | Voltage | Max. Freq. (GHz) | Package | Channels |
|---|---|---|---|---|---|---|
| SY89295U | LVPECL/LVTTL | LVPECL | 2.5/3.3V | 1.5 | TQFP/MLF-32 | Programmable Delay. |
| SY89296U | LVPECL/LVTTL | LVPECL | 2.5/3.3V | 1.5 | TQFP/MLF-32 | Programmable Delay with Fine Tune Control. |
| SY89297U ***New!*** | ANY | CML | 2.5V | 1.6/3.2(Gbps) | MLF-24 | 5ps /Step Programmable Delay, Dual Channel. |
| SY55856U | CML | CML | 2.5/3.3V | 2.5 | TQFP-32 | Two Channel Delay Line. |

## Crosspoint Switches

| Part Number | Input | Output | Voltage | Max. Data Rate (Gbps) | Package | Description |
|---|---|---|---|---|---|---|
| SY54023R ***New!*** | ANY | CML | 1.2/1.8V | 3.2 | MLF-16 | 2x2 with Fail-Safe Inputs. |
| SY56023R ***New!*** | ANY | CML | 1.2/1.8/2.5V | 6.4 | MLF-16 | 2x2 with Equalization. |
| SY56034AR ***New!*** | ANY | CML | 1.2/1.8/2.5V | 6.4 | MLF-32 | 2x2 Crosspoint Switch with Six Outputs. |
| SY56040AR ***New!*** | ANY | CML | 1.2/1.8/2.5V | 6.4 | MLF-44 | 4x4 Crosspoint Switch. |
| SY58023U | ANY | CML | 2.5/3.3V | 10.7 | MLF-16 | 2x2. |
| SY58024U | ANY | CML | 2.5/3.3V | 10.7 | MLF-32 | Dual 2x2. |
| SY58040U | ANY | CML | 2.5/3.3V | 5 | MLF-44 | 4x4. |
| SY89540U | ANY | LVDS | 2.5V | 3.2 | MLF-44 | 4x4. |
| SY55854U | ANY | CML | 2.5/3.3/5V | 2.5 | QSOP-16 | 2x2. |
| SY55858U | CML/PECL/LVPECL | CML | 2.5/3.3V | 3 | TQFP-32 | Dual 2x2. |
| SY55859L | CML | CML | 3.3V | 2.7 | MLF-32 | Dual 2x2. |

## Registers and Flip-Flops

| Part Number | Channels | Voltage | Max. Feq. | Package | Description |
|---|---|---|---|---|---|
| SY10/100E131 | Quad | 5V | 1.1 | PLCC-28 | 4-Bit D Flip Flop. |
| SY10/100E141 | Single | 5V | 0.7 | PLCC-28 | 8-Bit Shift Register. |
| SY10/100E142 | Single | 5V | 0.7 | PLCC-28 | 9-Bit Shift Register. |
| SY10/100E151 | Single | 5V | 1.1 | PLCC-28 | 6-Bit D Register. |
| SY10/100E451 | Single | 5V | 1.1 | PLCC-28 | 6-Bit D Register. |
| SY10/100E452 | Single | 5V | 1.1 | PLCC-28 | 5-Bit D Register. |
| SY10/100EL31 | Single | 5V | 2.8 | PLCC-28 | D Flip Flop w/ Set & Reset. |
| SY10/100EL35 | Single | 5V | 2.2 | SOIC-8 | JK Flip Flop. |
| SY10/100EL51 | Single | 5V | 2.8 | SOIC-8 | Differential Clock D Flip Flop. |
| SY10/100EL52 | Single | 5V | 2.0 | SOIC-8 | Differential Data & Clock D Flip Flop. |
| SY100S331 | Single | 5V | 0.8 | PLCC-28 | Triple D Flip Flop. |
| SY100S351 | Single | 5V | 0.7 | PLCC-28 | Hex D Flip Flop. |
| SY100S341 | Single | 5V | 0.6 | PLCC-28 | 8-Bit Shift Register. |
| SY10/100S891 | Single | 5V | — | PLCC-28 | 5-Bit Registered Transceiver. |

## Multiplexers

| Part Number | Fanout | Input | Output | Voltage | Frequency (Gbps) | Max. Freq. (GHz) | Package | Description |
|---|---|---|---|---|---|---|---|---|
| SY54017R ***New!*** | 2:1 | ANY | CML | 1.2/1.8V | 3.2 | 2.5 | MLF-16 | Low Voltage CML with Fail-Safe Input. |
| SY54017AR ***New!*** | 2:1 | ANY | CML | 1.2/1.8V | 3.2 | 2.5 | MLF-16 | Low Voltage CML MUX. |
| SY56017R ***New!*** | 2:1 | ANY | CML | 1.2/1.8/2.5V | 6.4 | 3.2 | MLF-16 | Low Voltage EQ MUX. |
| SY58017U | 2:1 | ANY | CML | 2.5/3.3V | 10.7 | 7 | MLF-16 | Internal Termination. |
| SY58018U | 2:1 | ANY | LVPECL | 2.5/3.3V | 5 | 4 | MLF-16 | Internal Termination and 800mV Output Swing. |
| SY58019U | 2:1 | ANY | RS-LVPECL | 2.5/3.3V | 10.7 | 7 | MLF-16 | Internal Termination and 400mV Output Swing. |
| SY58025U | Dual 2:1 | ANY | CML | 2.5/3.3V | 10.7 | 7 | MLF-32 | Internal Termination. |
| SY58026U | Dual 2:1 | ANY | LVPECL | 2.5/3.3V | 5 | 6 | MLF-32 | Internal Termination and 800mV Output Swing. |
| SY58027U | Dual 2:1 | ANY | RS-LVPECL | 2.5/3.3V | 10.7 | 6 | MLF-32 | Internal Termination and 400mV Output Swing. |
| SY58028U | 4:2 | ANY | CML | 2.5/3.3V | 10.7 | 7 | MLF-32 | Internal Termination. |
| SY58029U | 4:2 | ANY | LVPECL | 2.5/3.3V | 5 | 4 | MLF-32 | Internal Termination and 800mV Output Swing. |
| SY58030U | 4:2 | ANY | RS-LVPECL | 2.5/3.3V | 10.7 | 7 | MLF-32 | Internal Termination and 400mV Output Swing. |
| SY58037U | 8:2 | ANY | CML | 2.5/3.3V | 5 | 4 | MLF-44 | Internal Termination. |
| SY58038U | 8:2 | ANY | LVPECL | 2.5/3.3V | 4.5 | 5 | MLF-44 | Internal Termination and 800mV Output Swing. |
| SY58039U | 8:2 | ANY | RS-LVPECL | 2.5/3.3V | 5 | 5.5 | MLF-44 | Internal Termination and 400mV Output Swing. |
| SY58609U | 2:1 | ANY | CML | 2.5/3.3V | 4.25 | 2.5 | MLF-16 | Fail-Safe Input and Internal Termination. |
| SY58610U | 2:1 | ANY | LVPECL | 2.5/3.3V | 3.2 | 2.5 | MLF-16 | Fail-Safe Input and Internal Termination. |
| SY58611U | 2:1 | ANY | LVDS | 2.5V | 3.2 | 2.5 | MLF-16 | Fail-Safe Input and Internal Termination. |
| SY89208V | 2:1 | ECL/PECL | ECL/PECL | 3.3/5V | — | 3 | MLF-8 | Internal Termination and 800mV Output Swing. |
| SY89464U | 2:10 | ANY | LVPECL | 2.5/3.3V | — | 2 | MLF-44 | Internal Termination and 800mV Output Swing. |
| SY89465U | 2:10 | ANY | LVDS | 2.5V | — | 2 | MLF-44 | Fast Edge Rates and Internal Termination. |
| SY89473U | 2:2 | ANY | LVPECL | 2.5/3.3V | 2.5 | 2.5 | MLF-24 | Internal Termination and 800mV Output Swing. |
| SY89474U | 2:2 | ANY | LVDS | 2.5V | 2.5 | 2.5 | MLF-24 | Fast Edge Rates and Internal Termination. |
| SY89542U | Dual 2:1 | ANY | LVDS | 2.5V | 3.2 | 4 | MLF-32 | Fast Edge Rates and Internal Termination. |
| SY89543L | Dual 2:1 | ANY | LVDS | 3.3V | 3.2 | 3 | MLF-32 | Fast Edge Rates and Internal Termination. |
| SY89544U | 4:1 | ANY | LVDS | 2.5V | 3.2 | 4 | MLF-32 | Fast Edge Rates and Internal Termination. |
| SY89545L | 4:1 | ANY | LVDS | 3.3V | 3.2 | 3 | MLF-32 | Fast Edge Rates and Internal Termination. |
| SY89546U | 4:2 | ANY | LVDS | 2.5V | 3.2 | 4 | MLF-32 | Fast Edge Rates and Internal Termination. |
| SY89547L | 4:2 | ANY | LVDS | 3.3V | 3.2 | 4 | MLF-32 | Fast Edge Rates and Internal Termination. |
| SY89840U | 2:1 | ANY | LVPECL | 2.5/3.3V | — | 2 | MLF-16 | Internal Termination and 800mV Output Swing. |
| SY89841U | 2:1 | ANY | LVDS | 2.5V | — | 1.5 | MLF-16 | Fast Edge Rates and Internal Termination. |
| SY89842U | 2:1 | ANY | CML | 2.5/3.3V | — | 2 | MLF-16 | Internal Termination. |
| SY89843U | 2:2 | ANY | LVPECL | 2.5/3.3V | — | 2 | MLF-24 | Internal Termination and 800mV Output Swing. |
| SY89844U | 2:2 | ANY | LVDS | 2.5V | — | 2 | MLF-24 | Fast Edge Rates and Internal Termination. |
| SY89845U | 2:2 | ANY | CML | 2.5/3.3V | — | 2 | MLF-24 | Internal Termination. |
| SY89852U | 2:1 | ANY | LVPECL | 2.5/3.3V | 2.5 | 2.5 | MLF-16 | Internal Termination and 800mV Output Swing. |
| SY89853U | Dual 2:1 | ANY | LVPECL | 2.5/3.3V | 2.5 | 2.5 | MLF-32 | Internal Termination and 800mV Output Swing. |
| SY89855U | 4:2 | ANY | LVPECL | 2.5/3.3V | 2.5 | 2.5 | MLF-32 | Internal Termination and 800mV Output Swing. |
| SY89859U | 8:2 | ANY | LVPECL | 2.5/3.3V | 2.5 | 2.5 | MLF-44 | Internal Termination and 800mV Output Swing. |
| SY897132L ***New!*** | 2:1 | LVPECL | LVPECL | 3.3V | 1.5 | 0.8 | TSSOP-28 | Link Replicator. |
| SY10/100EL57 | 4:1 | ECL | ECL | 4.2V to 5.5V | — | — | SOIC-16 | |
| SY10/100EL58 | 2:1 | ECL | ECL | 4.2V to 5.5V | — | — | SOIC-8 | |
| SY100EL56V | Dual 2:1 | ECL | ECL | 3.3/5V | | | SOIC-20 | With Individual Selects. |
| SY100EL57L | 4:1 | ECL | ECL | 3.3V | | | SOIC-16 | |
| SY100S355 | 4:1 | ECL | ECL | 4.2V to 5.5V | | | PLCC-28 | Quad Mux/Latch. |
| SY100S363 | Dual 8:1 | ECL | ECL | 4.2V to 5.5V | | | PLCC-28 | |
| SY100S364 | 16:1 | ECL | ECL | 4.2V to 5.5V | | | PLCC-28 | |
| SY100S370 | 1 of 4/8 | ECL | ECL | 4.2V to 5.5V | | | PLCC-28 | Universal Demux/Decoder. |
| SY100S371 | Triple 4:1 | ECL | ECL | 4.2V to 5.5V | | | PLCC-28 | With Enable. |
| SY100S863 | 8:1 | PECL | PECL TTL | 5V | | | PLCC-28 | |



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## Translators

| Part Number | Input | Output | Voltage | Max. Freq. (GHz) | Package | Single/Dual |
|---|---|---|---|---|---|---|
| SY10/100ELT20V | TTL | PECL | 3.3/5V | 0.75 | SOIC-8 | Single |
| SY10/100ELT21 | PECL | TTL | 5V | 0.32 | SOIC-8 | Single |
| SY10/100ELT22 | TTL | PECL | 5V | 0.75 | SOIC-8 | Dual |
| SY10/100ELT23 | PECL | TTL | 5V | 0.32 | SOIC-8 | Dual |
| SY100ELT24 | TTL | ECL | 5V | 0.5 | SOIC-8 | Single |
| SY100ELT25 | ECL | TTL | 5V | 0.5 | SOIC-8 | Single |
| SY100E417 | LVPECL/PECL | LVPECL/PECL | 5V | 0.5 | PLCC-28 | Five |
| SY100EL90V | ECL/LVECL | PECL/LVPECL | 3.3V | 0.5 | SOIC-20 | Triple |
| SY100EL91 | PECL | ECL | 3.3/5V | 0.5 | SOIC-20 | Triple |
| SY100EL91L | PECL | ECL | 5V | 0.4 | SOIC-20 | Triple |
| SY100EL92 | PECL/LVPECL | PECL/LVPECL | 5/-5 | 0.3 | SOIC-20 | Triple |
| SY100ELT982 | PECL | CML | 5V | 1.25 | MSOP-10 | Single |
| SY100HA643 | ECL | TTL | 5V | 0.32 | PLCC-28 | Single |
| SY100S324 | TTL | ECL | 5V | 0.8 | PLCC-28 | Six |
| SY100S325 | ECL | TTL | 5V | 0.32 | PLCC-28 | Six |
| SY100S391 | TTL | PECL | 5V | 0.8 | PLCC-28 | Six |
| SY100S811 | PECL/TTL | PECL | 5V | 0.8 | PLCC-28 | Single |
| SY100S815 | PECL/TTL | PECL | 5V | 0.8 | SOIC-16 | Single |
| SY55851/A | PECL/LVPECL/CML | CML | 2.5/3.3V | 3 | MSOP-10 | Single |
| SY55855V | ANY | LVDS | 3.3/5V | 0.75 | MSOP-10 | Dual |
| SY55857L | ANY | LVPECL | 3.3V | 2.5 | MSOP-10 | Dual |
| SY89222L | TTL | PECL | 3.3V | 0.4 | MLF-8 (2 x 2mm) | Dual |
| SY89223L | LVPECL | LVTTL | 3.3V | 0.16 | MLF-8 (2 x 2mm) | Dual |
| SY89321L | LVPECL | LVTTL | 3.3V | 0.275 | MLF-8 (2 x 2mm) | Single |
| SY89322V | LVTTL | LVPECL | 3.3/5V | 0.8 | MLF-8 (2 x 2mm) | Dual |
| SY89323L | LVPECL | LVTTL | 3.3V | 0.275 | MLF-8 (2 x 2mm) | Dual |
| SY89325V | ANY | LVDS | 3.3V | 0.750 | MLF-8 (2 x 2mm) | Single |
| SY89327L | ANY | LVPECL | 3.3V | 2.5 | MLF-8 (2 x 2mm) | Single |
| SY89328L | LVPECL/LVTTL | LVTTL/LVPECL | 3.3V | 0.275 | MLF-8 (2 x 2mm) | Single |
| SY89329V | LVTTL | LVPECL | 3.3/5V | 0.8 | MLF-8 (2 x 2mm) | Single |
| SY89464U | ANY | LVPECL | 2.5/3.3V | 2.0 | MLF-44 | Single |
| SY89465U | ANY | LVDS | 2.5V | 2.0 | MLF-44 | Single |
| SY89645L | LVCMOS/LVTTL | LVDS | 3.3V | 0.65 | TSSOP-16 | Single |
| SY89825U | LVDS/LVPECL | LVPECL | 2.5/3.3V | 1.0 | TQFP-64 | Single |
| SY89826L | LVDS/LVPECL | LVDS | 3.3V | 1.0 | TQFP-64 | Single |
| SY89827L | HSTL/LVPECL | HSTL | 3.3V | 0.5 | TQFP-64 | Dual |
| SY89828L | LVDS/LVPECL | LVDS | 3.3V | 1.0 | TQFP-64 | Dual |
| SY89829U | LVDS/LVPECL | LVPECL | 2.5/3.3V | 1.0 | TQFP-64 | Dual |
| SY89831U | LVPECL/HSTL/CML | LVPECL | 2.5/3.3V | 2.5 | MLF-16 (3 x 3mm) | Single |
| SY89832U | LVPECL/HSTL/LVDS/CML | LVDS | 2.5V | 2.5 | MLF-16 (3 x 3mm) | Single |
| SY89833L | LVPECL/HSTL/LVDS/CML | LVDS | 3.3V | 2.0 | MLF-16 (3 x 3mm) | Single |
| SY89834U | LVTTL/CMOS | LVPECL | 2.5/3.3V | 1.0 | MLF-16 (3 x 3mm) | Single |



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## Gates

| Part Number | Input | Output | Voltage | Max. Freq. (GHz) | Package | Description |
|---|---|---|---|---|---|---|
| SY58051U | ANY | CML | 2.5/3.3V | 7 | MLF-16 | CML AnyGate®. |
| SY58052U | ANY | CML | 2.5/3.3V | 10.7 | MLF-16 | Data/Clock Synchronizer. |
| SY55851/A | CML/PECL/LVPECL | CML | 2.5/3.3V | 3 | MSOP-10 | CML AnyGate®. |
| SY55852U | CML/PECL/LVPECL | CML | 2.5/3.3/5V | 2.5 | MSOP-10 | D Flip Flop. |
| SY55853U | CML/PECL/LVPECL | CML | 2.5/3.3/5V | 2.5 | MSOP-10 | D Latch. |
| SY10/100E101 | ECL | ECL | 5V | — | PLCC-28 | Quad 4-Input OR/NOR. |
| SY10/100E104 | ECL | ECL | 5V | — | PLCC-28 | Quint 2-Input AND/NAND. |
| SY10/100E122 | ECL | ECL | 5V | — | PLCC-28 | 9 Bit Buffer. |
| SY10/100EL01 | ECL | ECL | 5V | 2 | SOIC-8 | 4-Input OR/NOR. |
| SY10/100EL04 | ECL | ECL | 5V | — | SOIC-8 | 2-Input AND/NAND. |
| SY10/100EL05 | ECL | ECL | 5V | — | SOIC-8 | 2-Input Diff. AND/NAND. |
| SY10/100EL07 | ECL | ECL | 5V | — | SOIC-8 | 2-Input XOR/XNOR. |
| SY100S301 | ECL | ECL | 5V | — | PLCC-28 | Triple 5-Input OR/NOR. |
| SY100S302 | ECL | ECL | 5V | — | PLCC-28 | Quint 2-Input OR/NOR. |
| SY100S304 | ECL | ECL | 5V | — | PLCC-28 | Quint AND/NAND. |
| SY100S307 | ECL | ECL | 5V | — | PLCC-28 | Quint XOR/XNOR. |
| SY100S317 | ECL | ECL | 5V | — | PLCC-28 | Triple 2-Wide OA/OAI. |
| SY100S318 | ECL | ECL | 5V | — | PLCC-28 | 5-Wide 5,4,4,4,2 OA/OAI. |
| SY100S321 | ECL | ECL | 5V | — | PLCC-28 | Low-Power 9-Bit Inverter. |
| SY100S322 | ECL | ECL | 5V | — | PLCC-28 | 9 Bit Buffer. |

## Latch

| Part Number | Description | Voltage | Package |
|---|---|---|---|
| SY100S350 | Hex D Latch | 5V | PLCC-28 |
| SY100S355 | Quad Multiplexer/Latch | 5V | PLCC-28 |

## Backplane and Cable Management Solutions

| Part Number | Input | Output | Voltage | Max. Data Rate (Gbps) | Package | Description |
|---|---|---|---|---|---|---|
| SY56016R ***New!*** | ANY | CML | 1.2/1.8/2.5V | 6.4 | MLF-10 (2 x 2mm) | Differential Line Driver with EQ |
| SY56216R ***New!*** | ANY | CML | 1.2/1.8/2.5V | 6.4 | MLF-16 (3 x 3mm) | Dual Channel EQ Receiver. |
| SY58620L | ANY | CML | 3.3V | 4.25 | MLF-24 | Backplane Transceiver with Integrated Loopback. |
| SY58621L | ANY | LVPECL/CML | 3.3V | 3.2 | MLF-24 | Backplane Transceiver with Integrated Loopback. |
| SY58626L | ANY | CML | 3.3V | 6.4 | MLF-32 | Pre-Emphasis Driver with Integrated Loopback. |
| SY58627L | ANY | CML | 3.3V | 6.4 | MLF-32 | Equalization Receiver with Integrated Loopback. |



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## MLF-8 (2mm x 2mm) Solutions

| Part Number | Equivalent | Input | Output | Voltage | Max. Freq. (GHz) | Description |
|---|---|---|---|---|---|---|
| SY54016R ***New!*** | — | ANY | CML | 1.2/1.8V | 2.5 | Low Voltage CML Translator w/ FSI. |
| SY54016AR ***New!*** | — | ANY | CML | 1.2/1.8V | 3.2 | Low Voltage CML Translator. |
| SY58600U | — | ANY | CML | 2.5V/3.3V | 7 | 7GHz/10.7Gbps Differential Translator. |
| SY58601U | — | ANY | LVPECL | 2.5V/3.3V | 5 | 5GHz/5Gbps Differential Translator. |
| SY58602U | — | ANY | LVPECL | 2.5V/3.3V | 7 | 7GHz/10.7Gbps Differential Translator. |
| SY58603U | — | ANY | CML | 2.5V/3.3V | 2.5 | Fail-Safe Input Buffers. |
| SY58604U | — | ANY | LVPECL | 2.5V/3.3V | 2.5 | Fail-Safe Input Buffers. |
| SY58605U | — | ANY | LVDS | 2.5V | 2 | Fail-Safe Input Buffers. |
| SY89206V | 100EL16V | PECL | PECL | 3.3/5V | 1 | Differential Receiver/Buffer. |
| SY89208V | 100EP58V | PECL | PECL | 3.3/5V | 3 | 2:1 Multiplexer. |
| SY89216V | 10EL16V | PECL | PECL | 3.3/5V | 1 | Differential Receiver/Buffer. |
| SY89222L | 100ELT22L | TTL | PECL | 3.3V | 0.40 | Dual Differential Translator. |
| SY89223L | 100ELT23L | LVPECL | LVTTL | 3.3V | 0.16 | Dual Differential Translator. |
| SY89250V | 100EL16VC | PECL | PECL | 3.3/5V | 1 | Enhanced Differential Receiver. |
| SY89306V | 100EP16V | PECL | PECL | 3.3/5V | 2.5 | Differential Receiver/Buffer. |
| SY89307V | 100EP16VS | PECL | PECL | 3.3/5V | 2.5 | Variable-out Differential Receiver. |
| SY89311U | 100EP11U | PECL | PECL | 2.5/3.3/5V | 3 | Differential 1:2 FOB. |
| SY89312V | 100EP32V | PECL | PECL | 3.3/5V | 4 | ÷2 Clock Generator. |
| SY89313V | 100EP33V | PECL | PECL | 3.3/5V | 4 | ÷4 Clock Generator. |
| SY89316V | 10EP16V | PECL | PECL | 3.3/5V | 2.5 | Differential Receiver/Buffer. |
| SY89321L | 100EPT21L | LVPECL | LVTTL | 3.3V | 0.275 | Differential Translator. |
| SY89322V | 100EPT22V | LVTTL | LVPECL | 3.3/5V | 0.800 | Dual Differential Translator. |
| SY89323L | 100EPT23L | LVPECL | LVTTL | 3.3V | 0.275 | Dual Differential Translator. |
| SY89325V | 55855V | ANYX | LVDS | 3.3/5V | 0.750 | Differential Translator. |
| SY89327L | 55857L | ANYX | LVPECL | 3.3V | 2.5 | Differential Translator. |
| SY89328L | 100EPT28L | LVTTL/LVPECL | LVTTL/LVPECL | 3.3V | 0.275 | Dual Differential Translator. |
| SY89329V | 100EPT20V | LVTTL | LVPECL | 3.3/5V | 0.800 | Differential Translator. |

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