



Low Power, 3GHz, 1:2 CML Fanout Buffer/Translator with Internal Termination

SY58051U Evaluation Board

General Description

The SY58051U evaluation board is designed for convenient setup and quick evaluation of the SY58051U. The evaluation board allows the user to evaluate the part over the full voltage and temperature range without modifications.

The evaluation board is configured for AC-coupled applications using a single power supply, and directly interfaces with 50 Ω -compatible lab equipment. For ease-of-use, the inputs are terminated into 50 Ω to V_T . All data sheets and support documentation can be found on Micrel's web-site at www.micrel.com.

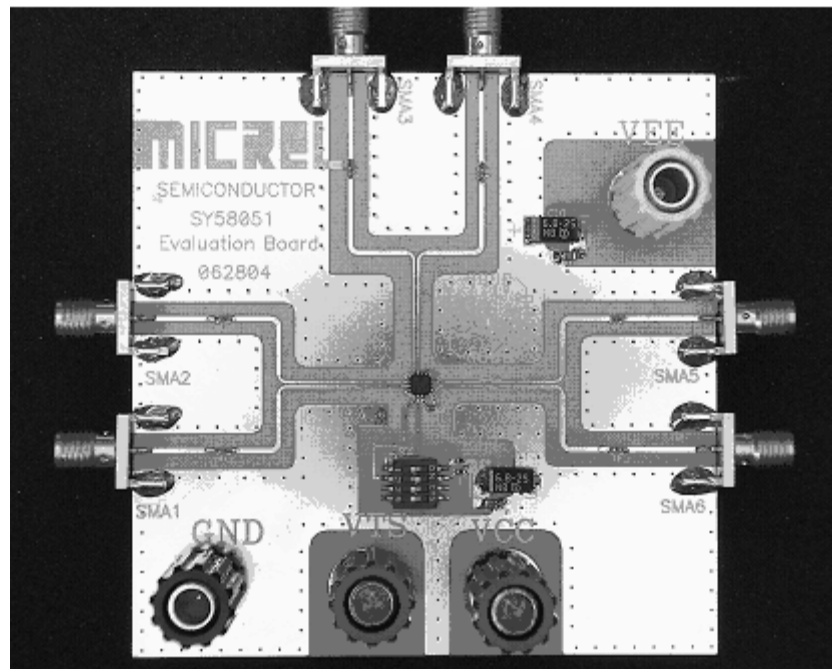
Features

- Single +2.5V or +3.3V power supply
- AC-coupled configuration for ease-of-use
- Evaluation board configured to directly interface with 50 Ω lab equipment
- Fully assembled and tested

Related Documentation

- SY58051U, Ultra Precision CML AnyGate[®] with Internal Input and Output Termination Data Sheet

Evaluation Board



AnyGate is a registered trademark of Micrel, Inc.

Evaluation Board Set-Up

The default configuration for the board is AC-coupled configuration. Follow the steps below to evaluate the device:

- Set $V_{CC} = 2.5V$ or $3.3V$, and $GND = V_{CC} = 0V$
- Apply $V_{IN} = 100mV$ (200mVpp) or greater
- Set V_T to $V_{CC}-1.3V$
- Directly connect the output pins to a 50Ω scope
- Select the output ports by programming the dip switch

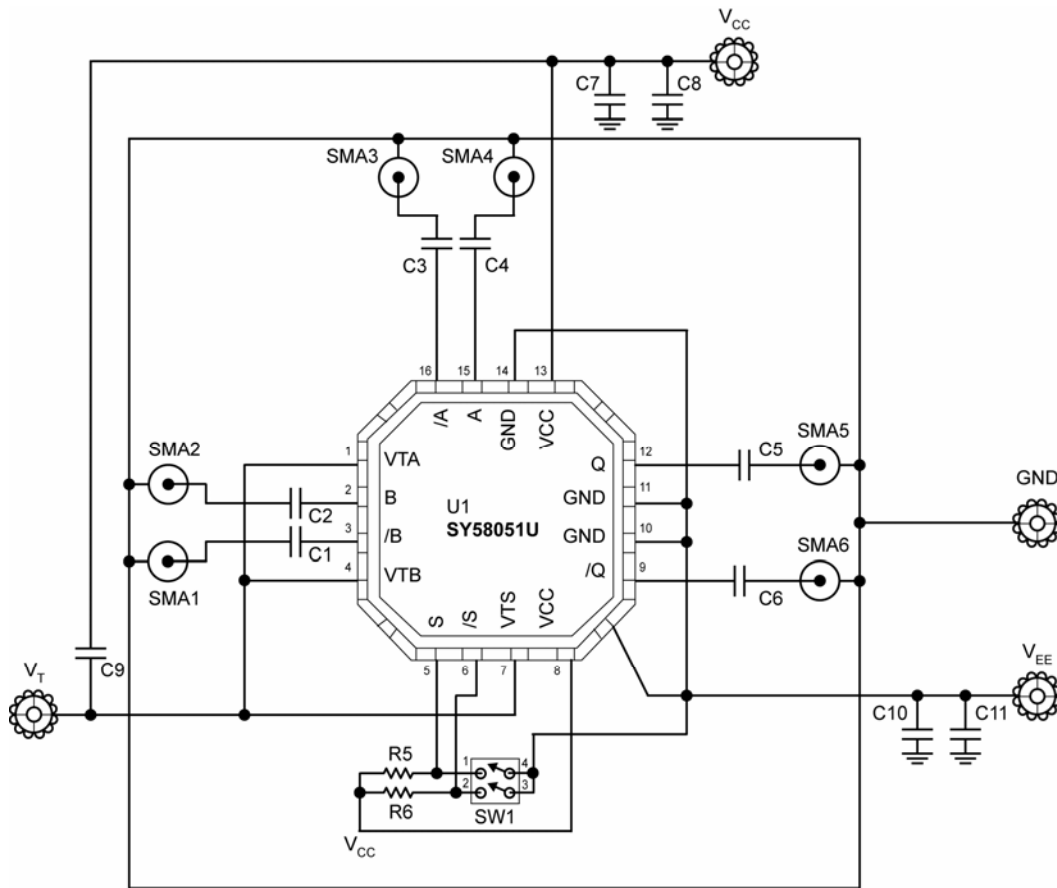
Evaluation Board PC Board Layout

The evaluation board is constructed with Rogers 4003 material, coplanar in design, fabricated to minimize noise, achieve high bandwidth and minimize crosstalk.

L1	GND and Signal
L2	GND
L3	V_{EE} and V_{DD}
L4	GND and Signal

Table 2. Layer Stack

Evaluation Board



SY58051U CML Evaluation Board

Power Supply	I/O Configuration	V _{CC}	GND	V _{EE}	V _T
2.5/3.3V	AC-coupled inputs/AC-coupled Outputs	+2.5/+3.3V	0V	0V	V _{CC} -1.3V

Table 1. SY58051U Configuration

Bill of Materials

Item	Part Number	Manufacturer	Description	Qty.
C1-C7, C9, C11	Vj0402Y104KXXAT	Vishay ⁽¹⁾	0.1 μ F, 25V, 10% Ceramic Capacitor, Size 0402, X7R Dielectric	9
C8, C10	293D685X0025C2T	Vishay ⁽¹⁾	6.8 μ F, 20V, Tantalum Electrolytic Capacitor, Size C	2
R5-R6	CRCW04023001F	Vishay ⁽¹⁾	3K Ω , 1/16W, 5% Thick-film Resistor, Size 0402	2
SMA1-SMA6	142-0701-851	Johnson Components ⁽²⁾	Jack Assembly End Launch SMA	6
SW	CT2182LPST-ND	Digi-Key ⁽³⁾	2 Position Switch, Surface Mount	1
V _{CC}	111-0702-001	Johnson Components ⁽²⁾	Red Banana Jack	1
GND	111-0703-001	Johnson Components ⁽²⁾	Black Banana Jack	1
V _{EE}	111-0701-001	Johnson Components ⁽²⁾	White Banana Jack	1
U1	SY58051U	Micrel⁽⁴⁾	Low Power, 1:2 CML Fanout Buffer/Translator w/Internal Termination	1

Notes:

1. Vishay tel.: 402-563-6866
2. Johnson Components tel.: 800-247-8256
3. Digikey tel.: 800-344-4539
4. **Micrel, Inc.** tel.: 408-944-0800

Micrel Cross Reference

To find an equivalent Micrel part, go to Micrel's website at: <http://www.micrel.com> and following the steps below.

1. Click on Dynamic Cross Reference.
2. Enter competitor's part number in the Dynamic Cross Reference field.
3. To download a PDF version of this information, click on the Cross Reference PDF tab.

Application Hints and Notes

For application notes on high speed termination on PECL and LVPECL products, clock synthesizer products, SONET jitter measurement, and other High Bandwidth products go to Micrel Semiconductors website at <http://www.micrel.com/>. Once in Micrel's website, follow the steps below:

1. Click on "Product Info."
2. In the Applications Information Box, choose "Application Hints and Application Notes."

HBW Support

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