

## Preliminary Information

January 20, 2000

This document contains information on a new product. The parametric information, although not fully characterized, is the result of testing initial devices.

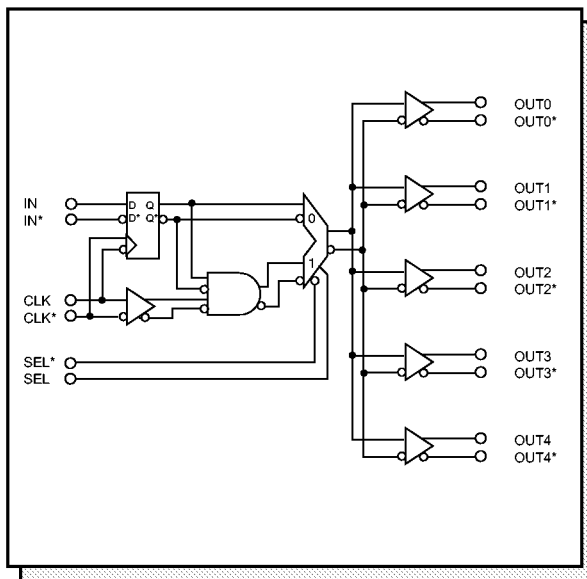
## Functional Description

The SK1501 is an extremely fast, stable, and accurate low skew 1:5 clock / signal distributor featuring a synchronous enable, which allows the outputs to be turned off and on without the risk of an unpredictable output pulse.

The SK1501 uses open emitter outputs with a double amplitude swing suitable for the following applications:

- TTL compatible destinations
- Double termination situations that require a full swing at the destination
- Long cables

## Functional Block Diagram



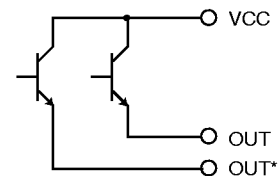
1:5 Clock / Data Driver

2 GHz Fmax

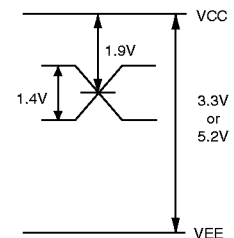
3.3V / 5.2V Compatible

## Output Options

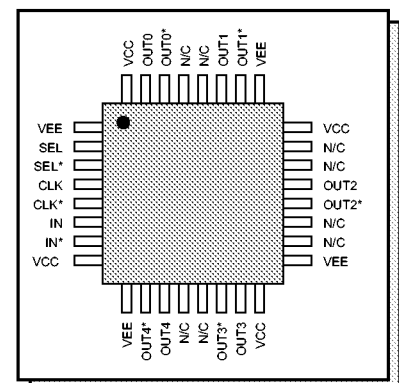
### Open Emitter



### Output Swing



32 pin, 5 mm x 5 mm  
TQFP Package



**DC Characteristics**

Parameter	Symbol	Min	Typ	Max	Units
<b>Inputs</b>					
Input High	V <sub>IH</sub>	V <sub>EE</sub> + 2.0		V <sub>CC</sub>	V
Input Low	V <sub>IL</sub>	V <sub>EE</sub>		V <sub>CC</sub> - .2	V
(IN - IN*, CLK - CLK*, SEL - SEL*) Differential Input Voltage	Input - Input*	.2		4.3	V
Timing Inputs (CLK / CLK*)					
Input High Current	I <sub>IH</sub>	+1		+25	μA
Input Low Current	I <sub>IL</sub>	-1		+1	μA
Functional Inputs (IN / IN*, SEL / SEL*)					
Input Current	I <sub>IH</sub> , I <sub>IL</sub>	-420		+250	μA
<b>Outputs</b>					
Digital Output Voltage	OUT - OUT*	1.2	1.4		V
Output Common Mode Range	(OUT + OUT*) / 2	V <sub>CC</sub> - 2.1	V <sub>CC</sub> - 1.9	V <sub>CC</sub> - 1.7	V
<b>Power Supply</b>					
Power Supply Current	I <sub>EE</sub>	TBD	95	TBD	mA
Power Supply Voltage	V <sub>CC</sub> - V <sub>EE</sub>	3.0		5.5	V

Test Conditions: Outputs terminated with 50Ω to V<sub>CC</sub> - 3V.

**AC Characteristics**

Parameter	Symbol	Min	Typ	Max	Units
<b>High Performance Option</b>					
Propagation Delay					
CLK to OUT (SEL = 0)	T <sub>pd</sub>	X - 100	X	X + 100	ps
CLK to OUT (SEL = 1)	T <sub>pd</sub>	Y - 100	Y	Y + 100	ps
SEL to OUT	T <sub>pd</sub>	Z - 100	Z	Z + 100	ps
Channel to Channel Skew				<20	ps
Maximum Operating Frequency (Note 1)	F <sub>max</sub>	2.0			GHz
Minimum Pulse Width (Note 1)	PW min	250			ps
IN to CLK (Note 1)					
Set Up Time	T <sub>su</sub>	100			ps
Hold Time	T <sub>h</sub>	100			ps
Output Rise and Fall Times (20% / 80%)	T <sub>r</sub> / T <sub>f</sub>		200	250	ps
Temperature Coefficient	ΔT <sub>pd</sub> / ΔT		<1		ps / °C

Note 1: Guaranteed by characterization. Not production tested.