

## Preliminary Information

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

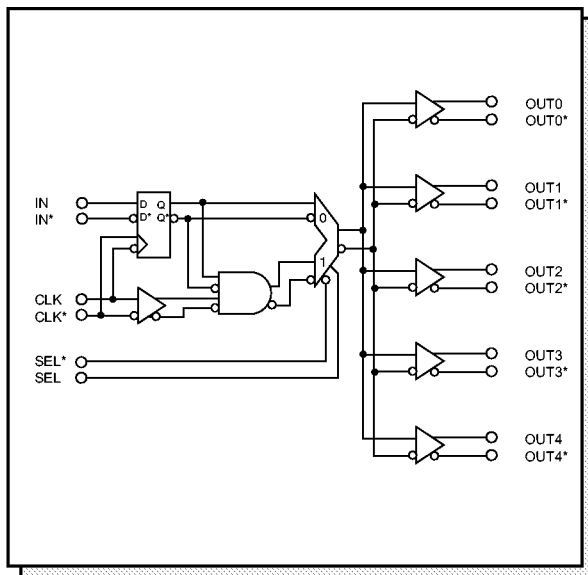
## Functional Description

The SK1503 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 SK1503 outputs are open emitter with an internal current source, optimized for applications that are:

- Point to point, double terminated, timing critical lines
- Non-50Ω transmission lines

## Functional Block Diagram



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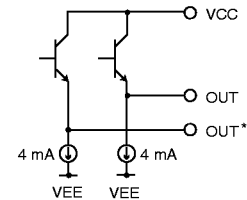
**1:5 Clock / Data Driver**

**3 GHz Fmax**

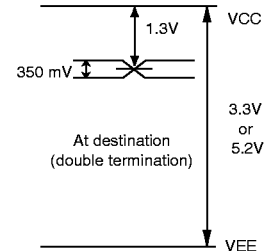
**3.3V / 5.2V Compatible**

### Output Options

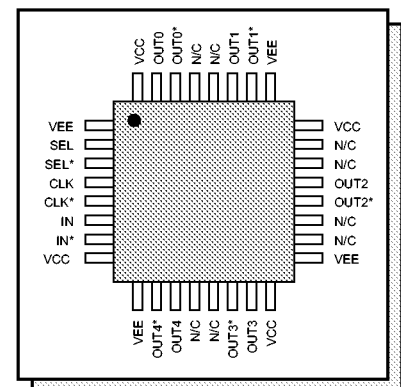
#### Internal Current Sink



#### 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*	600	700		mV
Output Common Mode Range	(OUT + OUT*) / 2	V <sub>CC</sub> - 1.5	V <sub>CC</sub> - 1.3	V <sub>CC</sub> - 1.1	V
Internal Current Source	I <sub>SINK</sub>	TBD	5	TBD	mA
<b>Power Supply</b>					
Power Supply Current	I <sub>EE</sub>	TBD	135	TBD	mA
Power Supply Voltage	V <sub>CC</sub> - V <sub>EE</sub>	3.0		5.5	V

Test Conditions:

**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				<10	ps
Maximum Operating Frequency (Note 1)	F <sub>max</sub>	3.0			GHz
Minimum Pulse Width (Note 1)	PW min	160			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>		125	150	ps
Temperature Coefficient	ΔT <sub>pd</sub> / ΔT		<1		ps / °C

Note 1: Guaranteed by characterization. Not production tested.