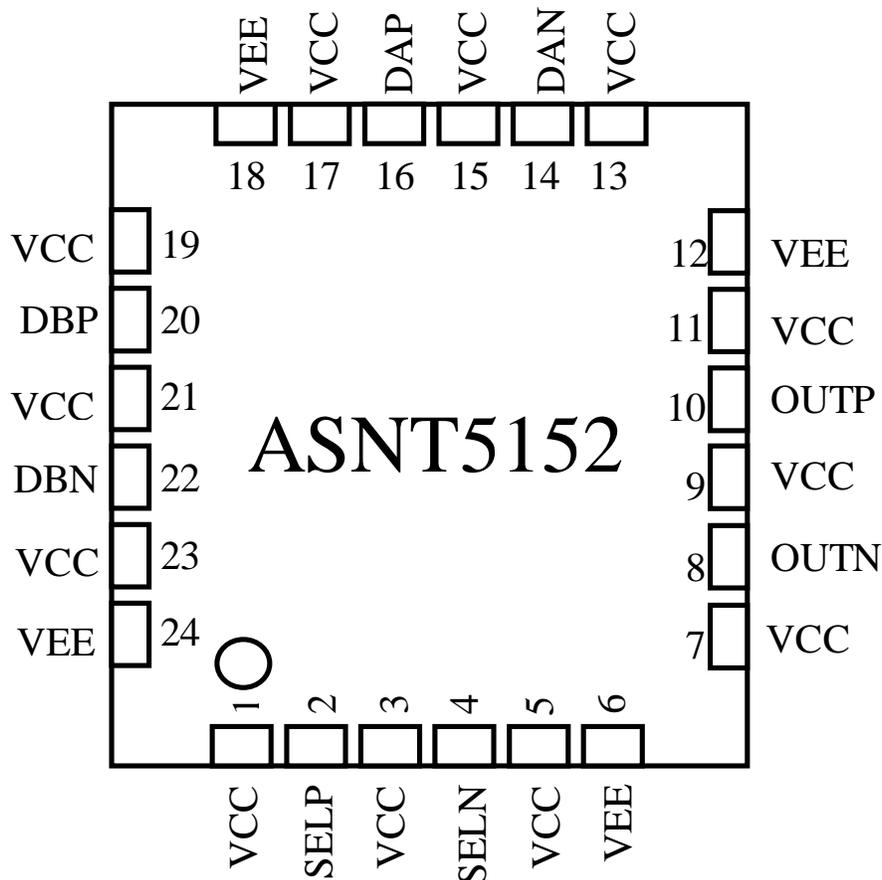




ASNT5052-PQC 28Gbps 2:1 High Isolation Selector

- High speed broadband 2:1 high isolation selector gate.
- Exhibits low jitter and limited temperature variation over industrial temperature range.
- 17GHz analog input bandwidth for both data inputs.
- Up to 1.0GHz of bandwidth for selector input.
- Ideal for high speed proof-of-concept prototyping.
- Fully differential input and output buffers with on-chip 50Ω termination.
- CML output interface with 400mV single-ended swing.
- Single ±3.3V power supply.
- Power consumption: 315mW.
- Fabricated in SiGe for high performance, yield, and reliability.
- Standard MLF/QFN 24-pin package.

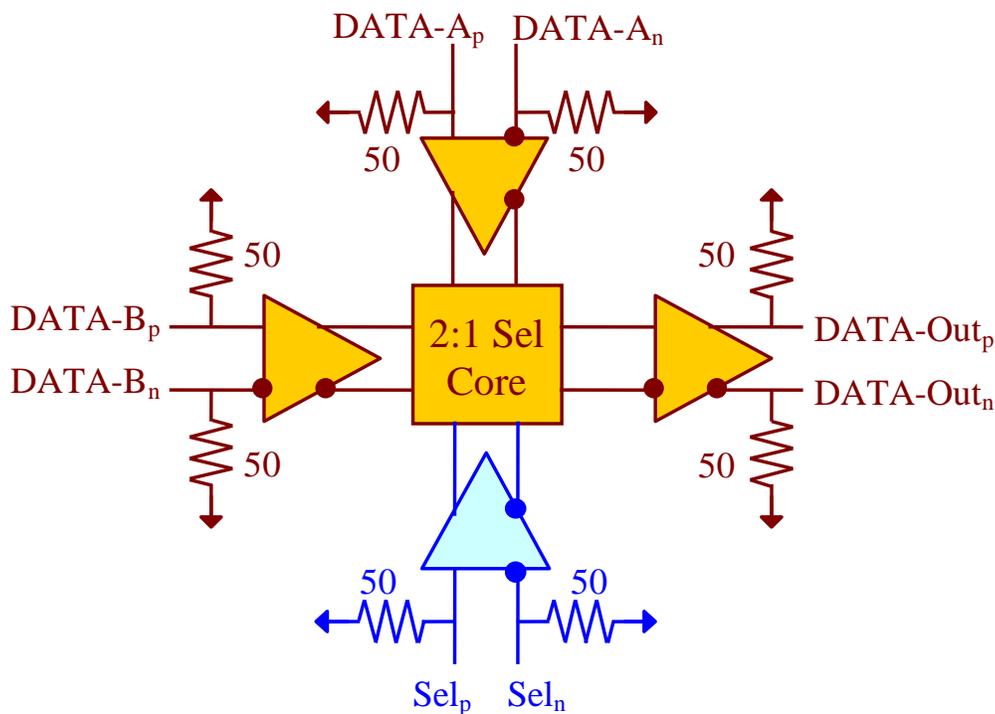




DESCRIPTION

The temperature stable and broadband ASNT5052-PQC SiGe IC is a high isolation selector switch that is intended for use in high-speed measurement / test equipment. ASNT5052-PQC can route one of its up to 28Gbps data inputs to its output while effectively blocking the other data input with high isolation. Selection of a specific data input is achieved through appropriate up to 1.0GHz external biasing of the selector signal inputs. The part's I/Os support the CML logic interface with on chip 50Ω termination and may be used differentially, AC/DC coupled, single-ended, or in any combination. It operates from a single ±3.3V power supply.

FUNCTIONAL BLOCK DIAGRAM



POWER SUPPLY CONFIGURATION

The ASNT5052-PQC can operate with either $V_{CC} = 0.0V$ and $V_{EE} = -3.3V$ or $V_{CC} = +3.3V$ and $V_{EE} = 0.0V$. Different PCB layouts will be needed for each different power supply combination.

All the characteristics detailed below assume $V_{CC} = 0.0V$ and $V_{EE} = -3.3V$.



ABSOLUTE MAXIMUM RATINGS

Caution: Exceeding the absolute maximum ratings may cause damage to this product and/or lead to reduced reliability. Functional performance is specified over the recommended operating conditions for power supply and temperature only. AC and DC device characteristics at or beyond the absolute maximum ratings are not assumed or implied. All min and max voltage limits are referenced to ground.

Parameter	Min	Max	Units
Supply Voltage - VEE		-3.6	V
Power Consumption		0.4	W
RF Input Voltage Swing (SE)		1.0	V
Operational Temperature	-5	+70	°C
Case Temperature		+90	°C
Storage Temperature	-40	+100	°C
Operational Humidity	10	98	%
Storage Humidity	10	98	%

TERMINAL FUNCTIONS

vcc	1,3,5,7,9,11 13,15,17,19,21,23	PS	Power Supply: 3.3V / 0V
vee	6,12,18,24	PS	Power Supply: 0V / -3.3V
dbp	20	Input	Differential CML high-speed data signal inputs
dbn	22		
dap	16	Input	Differential CML high-speed data signal inputs
dan	14		
selp	2	Input	Differential CML selector signal inputs
seln	4		
outp	10	Output	Differential CML high-speed data signal outputs
outn	8		



ELECTRICAL CHARACTERISTICS

PARAMETER	MIN	TYP	MAX	UNIT	COMMENTS
VEE	-3.1	0.0 / -3.3	-3.5	V	±6%
VCC	3.1	3.3 / 0.0	3.5	V	±6%
IEE		95		mA	
Power		315		mW	
Junction Temp.	-25	50	125	°C	
Input Datas (d)					
Frequency	0.0		28	Gbps	
CM Level	V _{cc} -0.8	V _{cc} -0.3	V _{cc} +0.3	V	
SE Swing	50	300	800	mV	Peak-to-peak
Input Select (sel)					
Frequency	0.0		1.0	GHz	
CM Level	V _{cc} -0.8	V _{cc} -0.3	V _{cc} +0.3	V	
SE Swing	50	300	800	mV	Peak-to-peak
Duty Cycle	40%	50%	60%		
Output Data (out)					
Frequency	0.0		28	Gbps	
CM Level	V _{cc} -0.3	V _{cc} -0.2	V _{cc} -0.1	V	
SE Swing	380	400	420	mV	Peak-to-peak
Rise/Fall Times	15	17	19	ps	20%-80%
Additive Jitter			<1	ps	Peak-to-peak

PACKAGE INFORMATION

The chip die is housed in a standard 24-pin QFN package. The package's mechanical information is available on the company's [website](#). It is recommended that the center heat slug located on the back side of the package be soldered to ground to help dissipate heat generated by the chip during operation.

The part's identification label is ASNT5052-PQC. The first 8 digits of the name before the underscore identify the bare die including general circuit family, fabrication technology, specific circuit type, and part version while the 3 digits after the underscore represent the package's manufacturer, type, and pin out count.

This device complies with the Restriction of Hazardous Substances (RoHS) per EU 2002/95/EC for all six substances.



REVISION HISTORY

Revision	Date	Changes
1.0	8-2011	Initial Release
1.1	1/2012	Updated description Updated Electrical characteristics Table