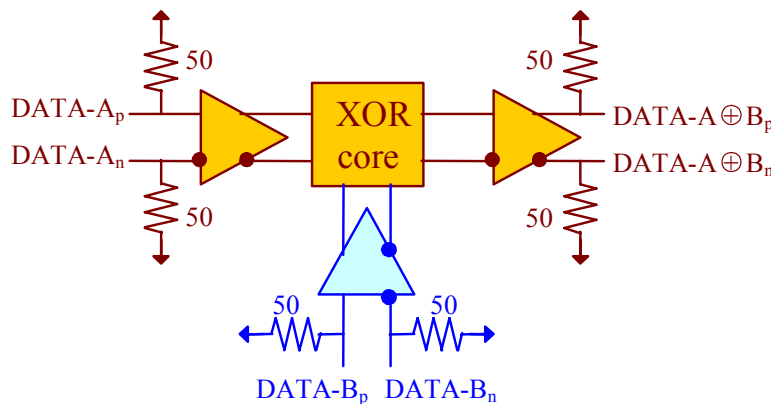


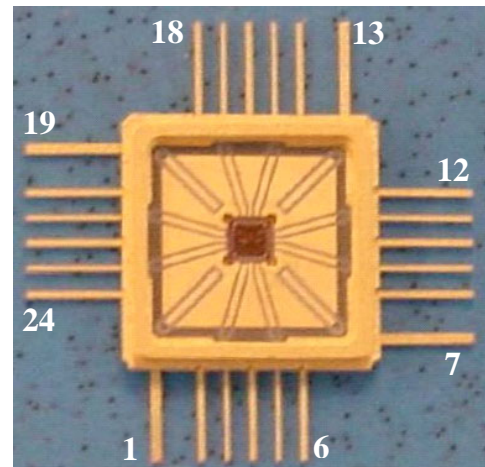
ASNT5140-KMC 30GHz XOR Logic Gate

- High speed broadband Exclusive-OR (XOR) Boolean logic gate.
- Exhibits low jitter and limited temperature variation over industrial temperature range.
- 30GHz analog input bandwidth for both data inputs.
- 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: 270mW.
- Fabricated in SiGe for high performance, yield, and reliability.
- Custom CQFP 24-pin package.

DESCRIPTION



Functional Block Diagram



Package View

The temperature stable ASNT5140-KMC SiGe IC provides broadband Exclusive-OR (XOR) Boolean logic functionality and is intended for use in high-speed measurement / test equipment. ASNT5140-KMC can XOR an up to 15GHz clock signal with another up to 15GHz clock signal to create an up to 30GHz clock output signal. 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.



TERMINAL FUNCTIONS

TERMINAL		TYPE	DESCRIPTION
NAME	(NO.)		
vcc	2,4,6,8,10,12 14-18,20,22,24	PS	Power Supply: 0V
vee	1,7,13,19	PS	Power Supply: -3.3V
dap dan	21 23	Input	Differential CML high-speed signal inputs
dbp dbn	3 5	Input	Differential CML high-speed signal inputs
outp outn	11 9	Output	Differential CML high-speed signal outputs

ELECTRICAL CHARACTERISTICS

PARAMETER	MIN	TYP	MAX	UNIT	COMMENTS
VEE	-3.1	-3.3	-3.5	V	±6%
VCC		0.0		V	
IEE		82		mA	
Power		270		mW	
Junction Temp.	-25	50	125	°C	
Inputs (d)					
Frequency	0.0		30	GHz	
CM Level	Vcc-0.8	Vcc-0.3	Vcc+0.3	V	
SE Swing	50	300	800	mV	Peak-to-peak
Output (out)					
Frequency	0.0		30	GHz	
CM Level	Vcc-0.3	Vcc-0.2	Vcc-0.1	V	
SE Swing	380	400	420	mV	Peak-to-peak
Rise/Fall Times	6	8	10	ps	20%-80%
Additive Jitter			<1	ps	Peak-to-peak

PACKAGE INFORMATION

The chip is packaged in ADSANTEC's custom 24-pin metal-ceramic package (CQFP). The package's mechanical information is available on the company's [website](#).