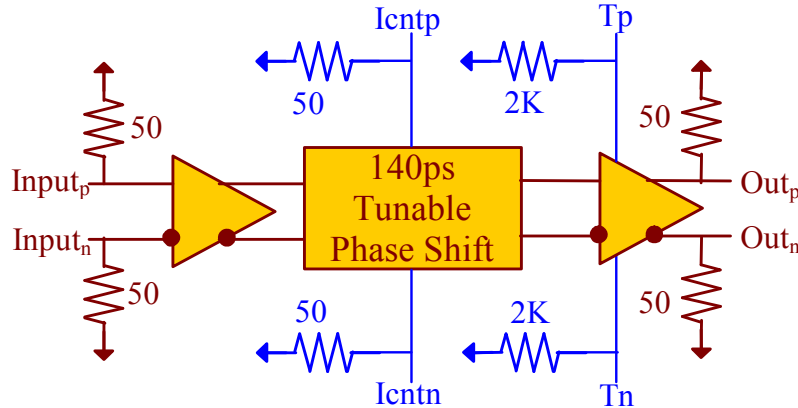


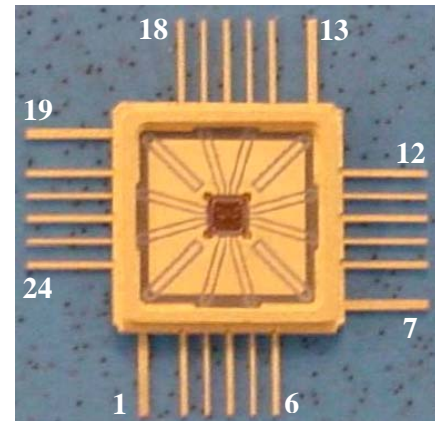
ASNT5076-KMC

14GHz/28Gbps Phase Shifter with Output Signal Amplitude Control

- Broadband (10MHz-14GHz/20Mbps-28Gbps) tunable clock/data phase shifter with 140ps of delay variation.
- Output signal amplitude adjustment from 0.0V to 1.0V single ended.
- Exhibits low jitter and limited temperature variation over industrial temperature range.
- 1GHz of bandwidth for the phase adjustment tuning ports.
- 10MHz of bandwidth for the amplitude adjustment tuning ports.
- Fully differential input and output buffers with on-chip 50Ω termination.
- Ideal for high speed proof-of-concept prototyping.
- Single -3.3V power supply.
- Power consumption: 1.3W.
- Fabricated in SiGe for high performance, yield, and reliability.
- Custom CQFP 24-pin package.



Functional Block Diagram



Package View

DESCRIPTION

The temperature stable ASNT5076-KMC SiGe IC provides extremely low jitter broadband signal phase shifting and amplitude control capability between its input and output signal ports and is intended for use in high-speed measurement / test equipment. ASNT5076-KMC can process an up to 14GHz/28Gbps RF clock/data signal and deliver both 0-140ps of adjustable phase delay and output signal amplitudes between 0.0V-1.0V through two external adjustment single ended tuning ports. 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 14-17,20,22	PS	Power Supply: 0V (GND)
vee	1,7,13,19	PS	Power Supply: -3.3V
inp	21	Input	Differential CML high-speed signal inputs
inn	23		
outp	11	Output	Differential CML high-speed signal outputs
outn	9		
icntp	3	Input	Differential high-speed phase adjustment tuning inputs
icntn	5		
tnp	17	Input	Differential low-speed amplitude adjustment tuning inputs
tnn	15		

ELECTRICAL CHARACTERISTICS

PARAMETER	MIN	TYP	MAX	UNIT	COMMENTS
VEE	-3.1	-3.3	-3.5	V	±6%
VCC		0.0		V	
IEE*		385		mA	
Power*		1.3		W	
Junction Temp.	-25	50	125	°C	
Input (in)					
Frequency	0.0		14/28	GHz-Gbps	
CM Level	Vcc-0.8	Vcc-0.2	Vcc	V	
SE Swing	50	400	1000	mV	Peak-to-peak
Output (out)					
Frequency	0.0		14/28	GHz/Gbps	
CM Level*	Vcc-0.3	Vcc-0.25	Vcc-0.2	V	
SE Swing*	475	500	525	mV	Peak-to-peak
Amplitude Variation	0.0	500	1000	mV	
Rise/Fall Times*	6	8	10	ps	20%-80%
Additive Jitter		TBD		ps	Peak-to-Peak
Duty Cycle	45%	50%	55%		For clock signal
Tuning Port (icnt)					
Diff. Swing	-500		500	mV	Peak-to-peak
CM Level	Vcc-0.5	Vcc-0.25	Vcc	V	
Phase Shift	0		140	ps	< ±5%
Shift Stability	-12		12	ps	0-125°C
Bandwidth	0.0		1000	MHz	
Tuning Port (tn)					
Diff. Swing	-500		500	mV	Peak-to-peak
CM Level	Vcc-0.5	Vcc-0.25	Vcc	V	
Bandwidth	0.0		10	MHz	

* Tn pins are not connected (NC)

**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](#).