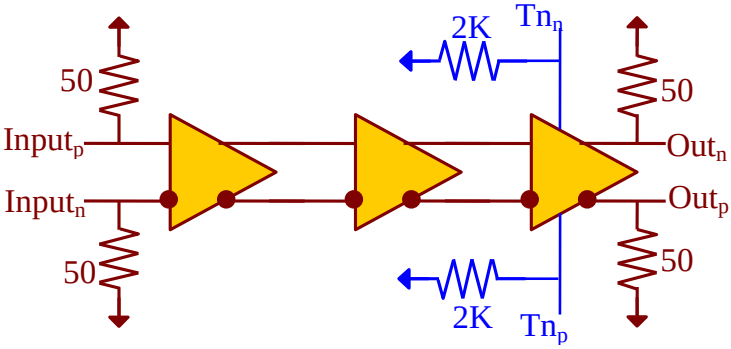
ADSANTEC
Advanced Science and Novel Technology
27 Via Porto Grande, Rancho Palos Verdes, CA, 90275. Ph. # 1-310-377-6029. Fax # 1-310-377-9940.

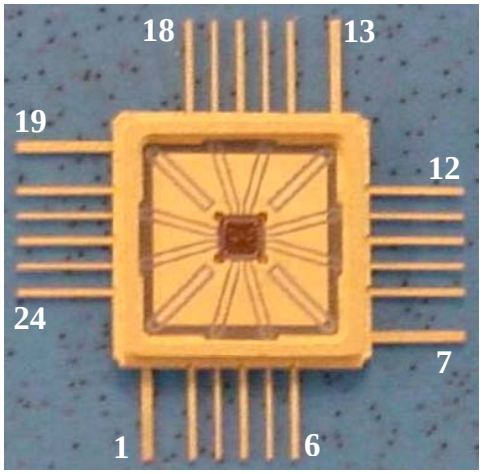
ASNT5031-KMC
28G*bps* Limiting Amplifier

- Broadband (DC-28*Gbps*) limiting amplifier featuring output signal amplitude adjustment from 0.0*V* to 1.0*V* single ended.
- Exhibits low jitter and limited temperature variation over industrial temperature range.
- 100*MHz* of bandwidth for the amplitude adjustment tuning port.
- Ideal for high speed proof-of-concept prototyping.
- Fully differential input and output buffers with on-chip 50Ω termination.
- CML output interface with nominal 500*mV* single-ended swing.
- Single -5.0*V* power supply.
- Power consumption: 1.05*W*.
- Fabricated in SiGe for high performance, yield, and reliability.
- Custom CQFP 24-pin package.

DESCRIPTION



Functional Block Diagram



Package View

The temperature stable ASNT5031-KMC SiGe IC provides extremely low jitter broadband signal amplitude control capability between its input and output signal ports and is intended for use in high-speed measurement / test equipment. ASNT5031-KMC can process an up to 28*Gbps* data signal and deliver output signal amplitudes between 0.0*V*-1.0*V* through the up to 100*MHz* external adjustment of its differential tuning port. 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 -5.0*V* power supply.

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TERMINAL FUNCTIONS

TERMINAL NAME	(NO.)	TYPE	DESCRIPTION
vcc	2,3,4,6,8,10,12 14,16,17,18,20,22,24	PS	Power Supply: 0V
vee	1,7,13,19	PS	Power Supply: -5.0V
inp	21	Input	Differential CML high-speed data signal inputs
inn	23		
outp	11	Output	Differential CML high-speed data signal outputs
outn	9		
tnp	5	Input	Differential low-speed amplitude adjustment tuning inputs
tnn	15		

ELECTRICAL CHARACTERISTICS

PARAMETER	MIN	TYP	MAX	UNIT	COMMENTS
VEE	-4.5	-5.0	-5.5	V	±10%
VCC		0.0		V	
IEE		210		mA	
Power		1.05		W	
Junction Temp.	-25	50	125	°C	
Input (in)					
Frequency	0.0		28	Gbps	
CM Level	Vcc-0.8	Vcc-0.2	Vcc	V	
Swing (Diff or SE)	50	400	1000	mV	Peak-to-Peak
Output (out)					
Frequency	0.0		28	Gbps	
CM Level*	Vcc-0.3	Vcc-0.25	Vcc-0.2	V	
SE Swing*	475	500	525	mV	Peak-to-Peak
Rise/Fall Times*	10	12	14	ps	20%-80%
Additive Jitter		TBD		ps	Peak-to-Peak
Tuning Port (tn)					
Diff. Swing	-500		500	mV	Peak-to-Peak
CM Level	Vcc-0.5	Vcc-0.25	Vcc	V	
Amplitude Variation	0.0	500	1000	mV	
CM Level	Vcc-0.5	Vcc-0.25	Vcc	V	
Bandwidth	0.0		100	MHz	
* Tuning 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.