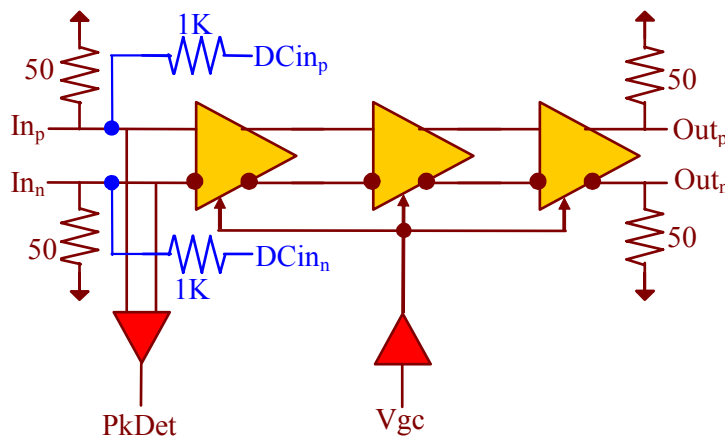


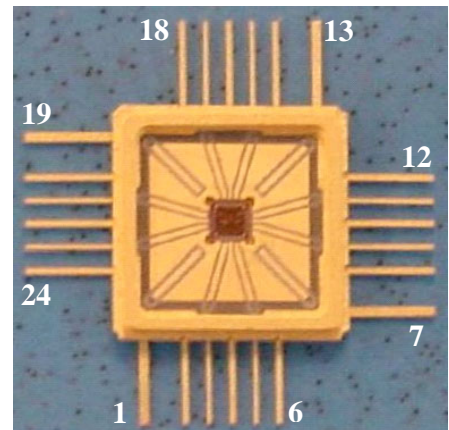
ASNT5136-KMC 45Gbps Limiting Amplifier

- Broadband limiting amplifier for receiver side applications.
- Features gain control, input offset adjustment, and peak detector.
- Exhibits low jitter and limited temperature variation over industrial temperature range.
- 30GHz of analog bandwidth for limiting of input data.
- Adjustable 32-38dB of gain.
- Ideal for high speed receive side low noise amplification.
- Fully differential input and output buffers with on-chip 50Ω termination.
- CML output interface with 300mV single-ended swing.
- Single -3.3V power supply.
- Power consumption: 330mW.
- Fabricated in SiGe for high performance, yield, and reliability.
- Custom CQFP 24-pin package.

DESCRIPTION



Functional Block Diagram



Package View

The temperature stable ASNT5132-KMC SiGe IC provides low jitter broadband variable signal amplification between its input and output signal ports and is intended for use in high-speed communication systems. ASNT5132-KMC can process an up to 45Gbps data signal and deliver a limited output for input signal amplitudes as low as 10mV pk-pk through external adjustment of its gain control 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 -3.3V power supply.



TERMINAL FUNCTIONS

NAME	(NO.)		
vcc	2,4,6,8,10,12 14,16,18,20,22,24	PS	Power Supply: 0V
vee	1,7,13,19	PS	Power Supply: -3.3V
inp	21	Input	Differential CML high-speed data signal inputs
inn	23	Input	
outp	11	Output	Differential CML high-speed data signal outputs
outn	9	Output	
Vgc	5	Input	Low-speed gain adjustment tuning input
PkDet	15	Output	Low-speed peak detection output
Dcinp	17	Input	Input offset adjustment pin (inp)
Dcinn	3	Input	Input offset adjustment pin (inn)

ELECTRICAL CHARACTERISTICS

PARAMETER	MIN	TYP	MAX	UNIT	COMMENTS
VEE	-3.1	-3.3	-3.5	V	±6%
VCC		0.0		V	
IEE		110		mA	
Power		330		mW	
Junction Temp.	-25	50	125	°C	
Input (in)					
Frequency	0.0		40	Gbps	
CM Level	V _{cc} -0.8	V _{cc} -0.3	V _{cc} +0.3	V	
SE Swing	10	200	500	mV	Peak-to-peak
Output (out)					
Frequency	0.0		45	Gbps	
CM Level		V _{cc} -0.15		V	
SE Swing	280	300	320	mV	Peak-to-peak
Rise/Fall Times	10	12	14	ps	20%-80%
Additive Jitter			1.0	ps	Peak-to-peak
Tuning Port (Vgc)					
Input Signal Range	-1.0		0.0	V	
Gain Variation	32	35	38	dB	< ±5%
Bandwidth	0.0		100	MHz	
Input Offset (Dcin)					
Input Signal Range	-3.3		0.0	V	
Peak Detect (PkDet)					
Output Signal Range	-1.0		0.0	V	
Bandwidth	0.0		1.0	KHz	

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](#).