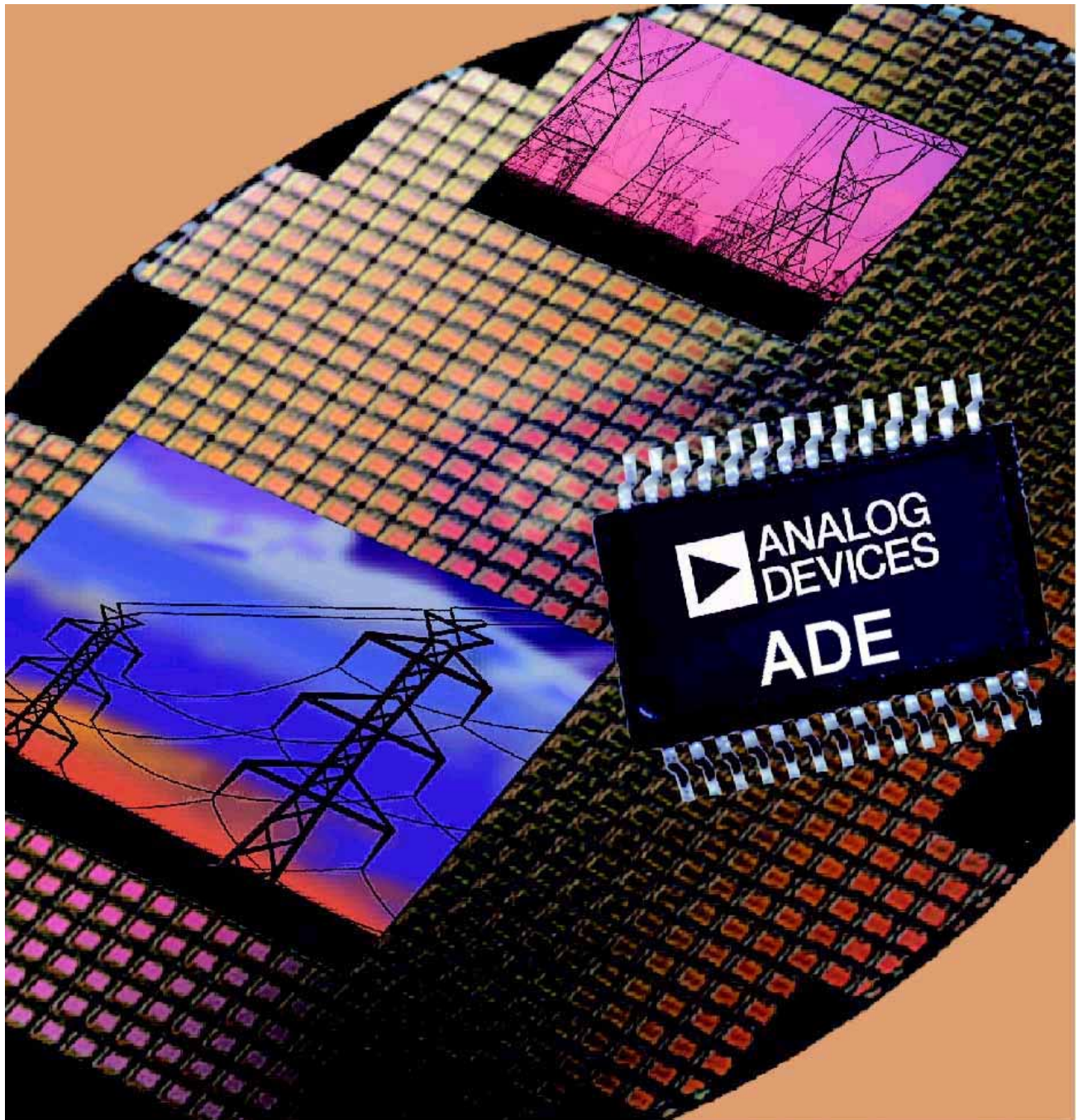


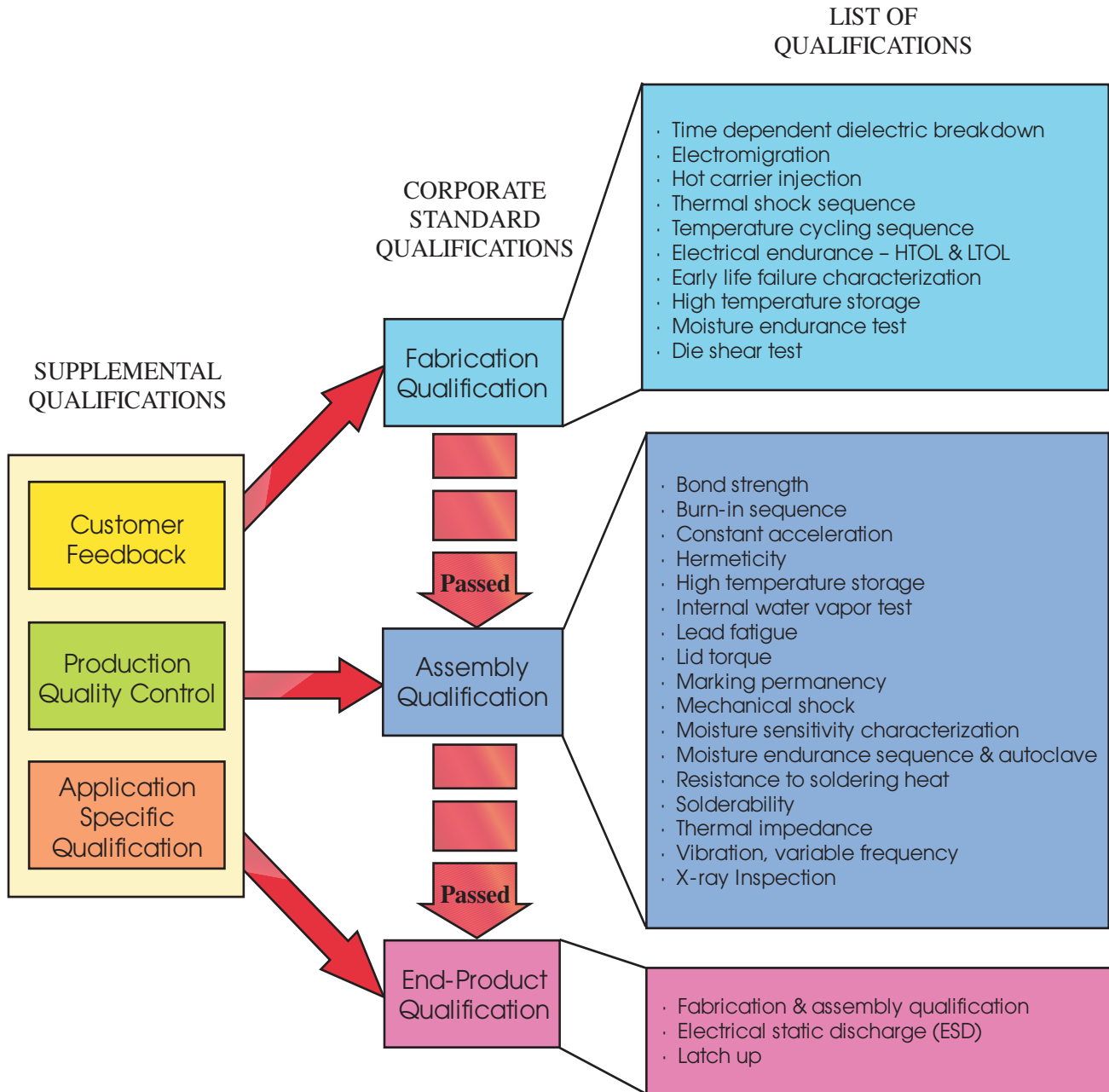
## Analog Devices Energy Metering Products (ADE)



Energy Metering IC's  
Quality you can trust.

# Analog Devices Superior Quality

All integrated circuits (IC) manufactured by Analog Devices endure a strict qualification process to ensure high quality of our end products. Extensive qualification processes are carried out in fabrication, assembly and end-product stages. To ensure consistent quality of our products, production samples are constantly drawn for reliability testing and failure analysis. Additionally, the results provided by our world-class Products Analysis Group on customer returns and device qualification failures help trigger continuous product/process improvements world-wide.

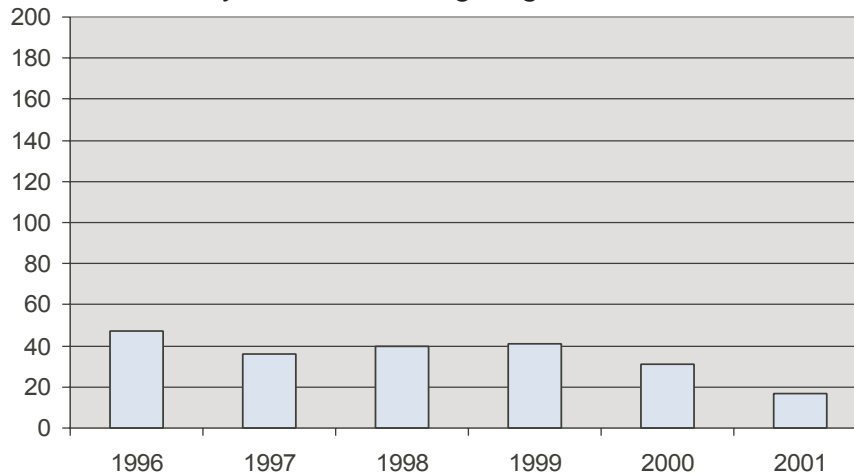


## Did You Know?

Analog Devices regularly performs tests that are tailored to our products' specific applications. For example, to answer our customers' question on the expected lifespan of solid-state energy meter, **our ADE7755 was tested and passed 3,000 hours accelerated life test (HTOL at 150 °C), an equivalence of 60 years lifespan!** This study disputes misconceptions that a solid-state energy meter IC has a short expected lifespan.

The qualification process is simply the very first step taken to ensure our quality and reliability. To ensure our products meet the highest quality standard, Analog Devices constantly monitors the finished products. The plot below shows the yearly failure rate in parts per million (ppm). Please note that the electrical ppm failure is largely comprised of marginal parametric rejects. In other words, these rejects are fully functional but are more likely to experience early failure in the field. As you can see, the consistent rate reflects the stability of our process. The low ppm rate also directly reflects the quality of the products our customers received. The low failure ppm ensures the products our customers receive have virtually zero defects and low probability of early failure in the field. Analog Devices' Product Analysis Group works directly with customers on quality issues and provide rapid responses to customers through correlation, analysis and corrective actions.

Yearly Electrical Outgoing PPM Results

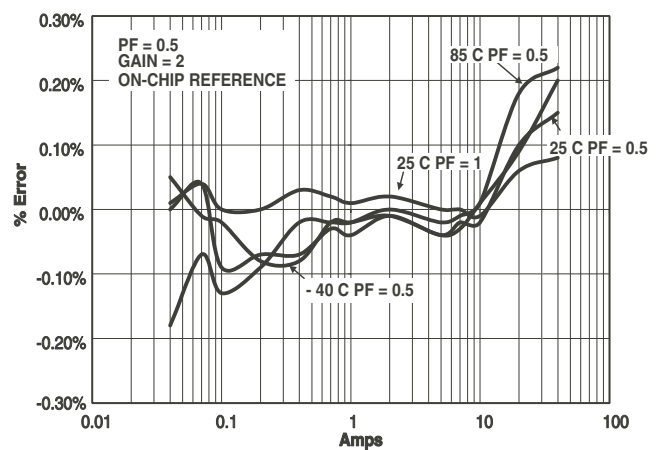
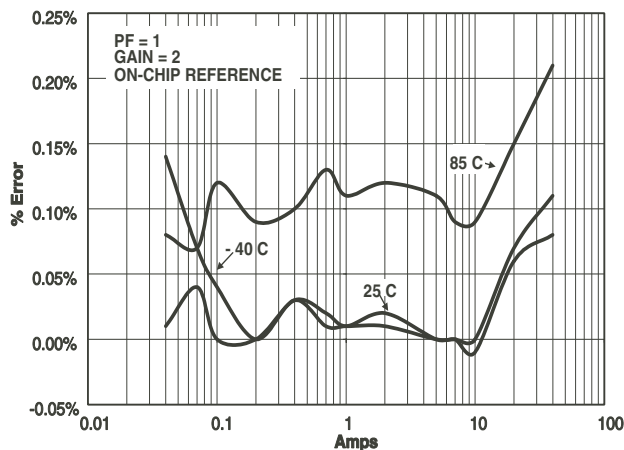


### Did You Know?

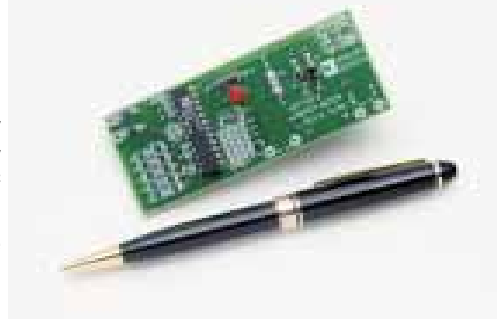
The quality of the product you receive depends on the overall failure rate of the lot that the part comes from. **The lower the failure rate of the lot, the better the quality of the product.** The consistently low failure rate from Analog Devices' manufacturing process shows the reliability of our products.

## Analog Devices Energy Measurement Performance

ADE7751 is an important member of our ADE family. ADE7751's pioneering anti-tempering feature and unsurpassed wide-dynamic range accuracy make it the product of choice for many meter manufacturers around the world. The plots below highlight the performance of ADE7751 over a dynamic range of 1000:1 and temperature range of  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$ . Even at low power factor (PF=0.5), as shown on the plot on the right, ADE7751 maintains its high accuracy.



Another main reason why many manufacturers choose ADE7751 is its ease of use. A single calibration point for each current sensing channel, typically at 1b (basic current), is all that is needed to calibrate the meter. The ADE7751 needs a single 5V voltage supply, and it provides direct drive capability to a mechanical counter. The circuitry needed for a meter is very simple. Shown on the right is our solid-state watt-meter reference design used for ADE7755. Similar design is also available for ADE7751 and the full documentation of this meter, Application Note AN-563, can be found in our web site. The reference design is provided to help our customer shorten the design cycle. Please visit our web site for further details.



## Energy Measurement ICs: Selection Guide

Analog Front End and Fixed Function ICs										
Application	Gen Purpose DSP or uP	General Purpose DAQ	Analog Calibration	Analog Cal + Anti-tamper	Analog Cal + Oscillator	Digital Calibration	Digital Cal + di/dt integrator	Digital Cal + Power Quality + di/dt integrator	Digital Cal + Anti-tamper	Digital Cal + Power Quality
3-Phase	Programmable processor based meter	ADSP2185/6 ADuC812	AD73360 AD73360L							ADE7754
	Single Chip with stepper counter display			ADE7752						
1-Phase	Programmable processor based meter	ADuC812				ADE7756	ADE7759	ADE7753		
	Single Chip with stepper counter display			ADE7755	ADE7751	ADE7757	ADE7735		ADE7731	

**Legend:** Products available today  
 New Products sampling or available in 2002  
 Future products

### Application Notes

- ADE7751 (AN-563, AN-574)
- ADE7755 (AN-559)
- ADE7756 (AN-564, AN-578)

### WORLDWIDE HEADQUARTERS

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