



# Technical Seminar Series

*Be Smart — Choose the Right Part*

**Welcome to “Don’t Lose Your Current! Learn about  
Passive Parts for Power Supply Applications.”**



**Listen in as AVX, KEMET, and Panasonic share the key focus design parameters behind their best, newest, and key passive components targeted toward the power supply marketplace.**

**Sept. 19, 2006**



# Technical Seminar Series

*Be Smart — Choose the Right Part*

Welcome – Mark Burr-Lonnon, TTI, Inc.

## Technology Line-Up

### **Paumanok Publications, Inc.**

- Dennis Zogbi

### **AVX**

- Ron Demcko

### **KEMET**

- John Prymak

### **Panasonic**

- Len Metzger

## Q&A

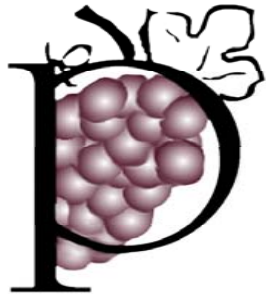
**Paumanok**

**Passive Component Market Research**

3Q 2006

**TTI Technical WEBCAST SERIES**

**Passive Components For  
Power Supplies**



**RESEARCH & PRESENTATION**

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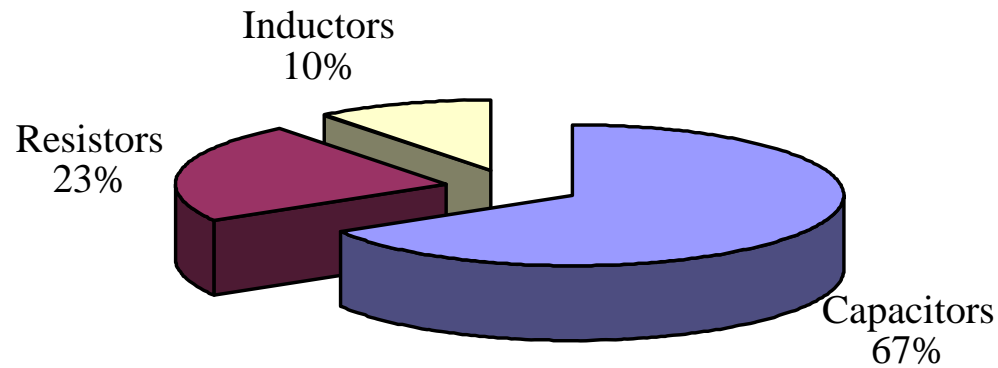
**Profitable News  
On The Multibillion Market  
For Passive Component In  
Power Related Devices**



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## Passive Component Market Forecast: 2006 CY

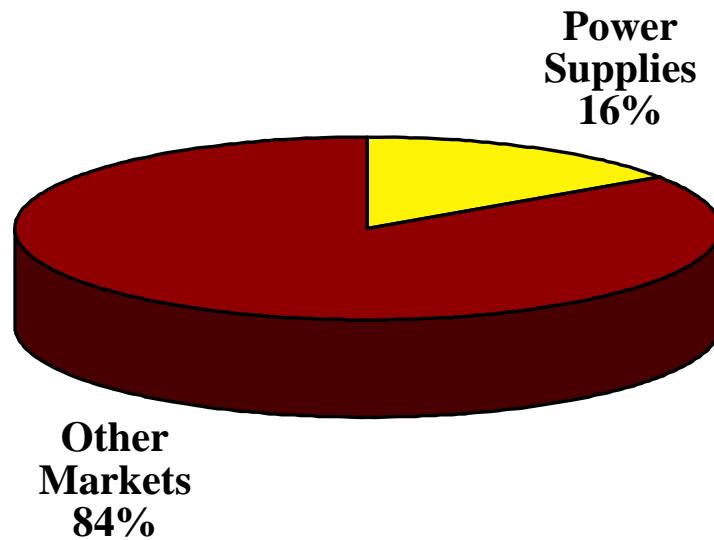
**2006 Estimated Global Consumption Value For Passive  
Electronic Components (C,R,L)  
\$25 Billion USD Total Market  
*+10-15% In 2006***



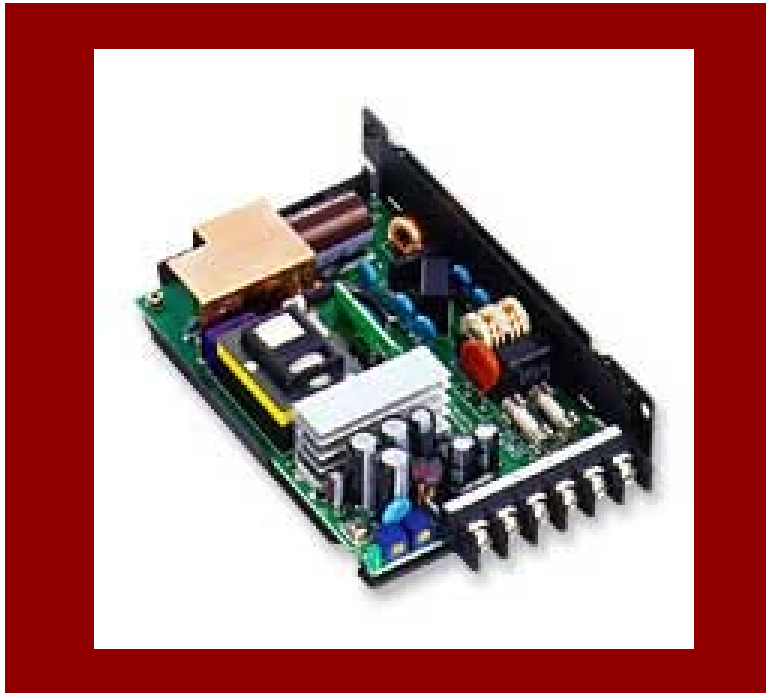
## The Importance Of Power Related Devices To The Passive Component Industry: 2006 CY

**Passive Component Consumption In The Global Power Electronics Business: 2006 Forecasts**  
*+16.5% in 2006*

**\$4 Billion USD In Global C,R,L Sales In 2006**

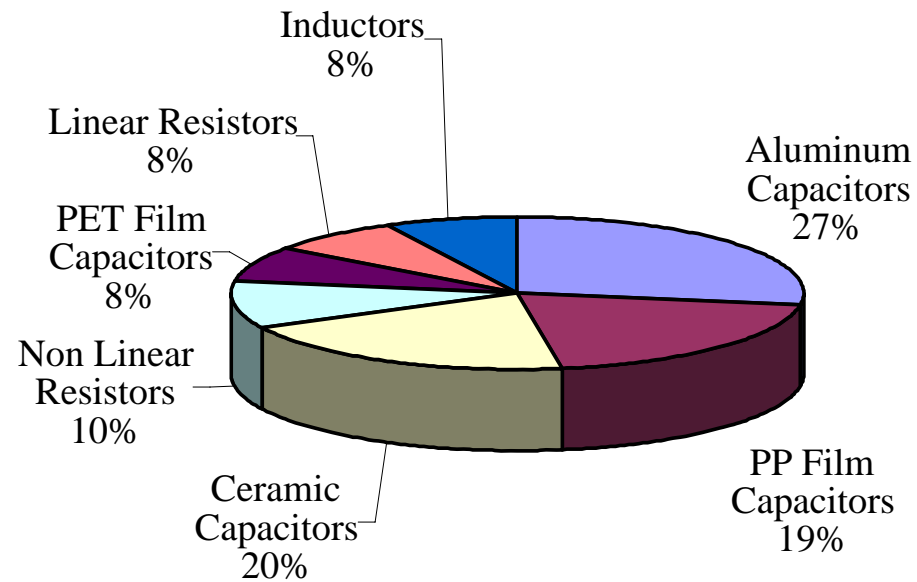


## Teardowns Reveal That Power Supplies Are Passive Component Intensive

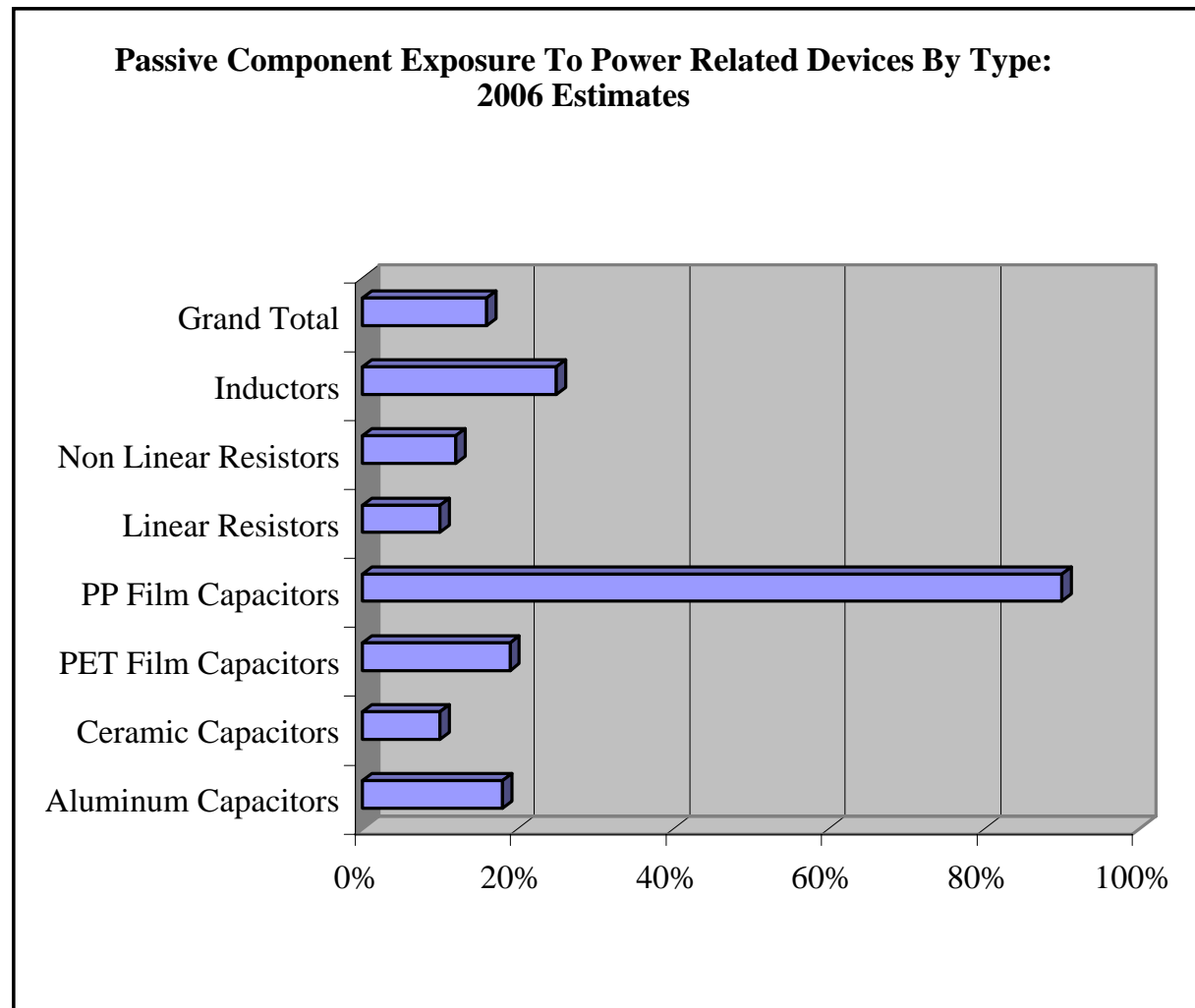


# Power Related Designs Define Passive Component Demand By Type In 2006

**Passive Component Consumption Value By Type In  
Power Related Devices: 2006E**  
*A \$4 Billion Global Market For Passives*



# Level Of Importance Power Related Devices Are To Specific Passive Component Product Lines: 2006



# Power Related Device Markets Defined

## Professional

- Utility Transmission & Distribution
- DC Motors & Generators
- Other

## Electric Transport

- Electric Rail
- Hybrid Electric Vehicle (Emerging)



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## Consumer

- SMPS and Brick Converters For Digital Electronics
- Smoke Detectors, Alarms

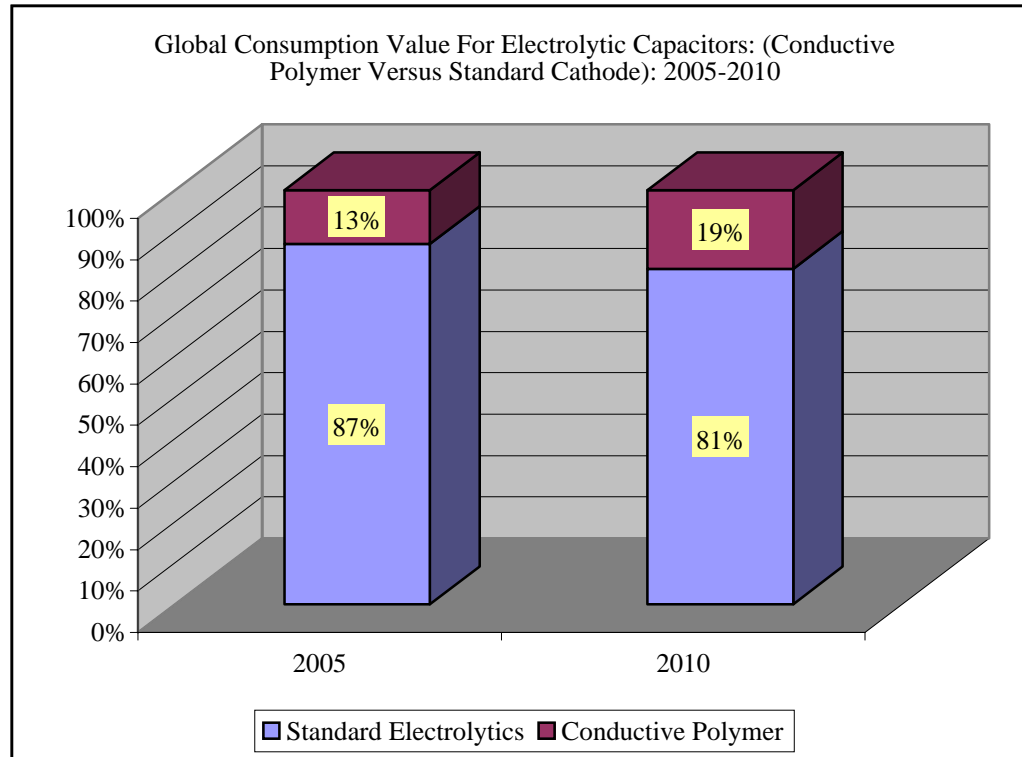
## Telecom/Datacom

- Central Office
- Other Telephony

## Lighting

- Ballasts

# Conductive Polymer Capacitors Improve Power Efficiency



Design engineers are expected to use more conductive polymer capacitors due to efficiency of lower ESR cathodes.



# Power Related Trends & Directions Impacting Passive Components

## 1) Global Movement Toward Renewable Energy

1) Variable Speed Drives

2) Hybrid Electric Vehicles

*-Electrification of the Power Train*

*-Both markets are capacitor, resistor and inductor intensive, and my growth forecasts are conservative and yet substantial. I forecast a major market upturn for polypropylene capacitors, metal film and wirewound resistors and power inductors.*



# HEV: The Next Big Thing In Automotive and Power Electronics

## *Toyota Prius® HEV 1st Generation Architecture*

