

# **CARTS Europe 2011**

**Nice, France  
10-12 October 2011**

**ISBN: 978-1-62748-085-7**

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2011) by the Electronic Components Industry Association (ECIA)  
All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact the Electronic Components Industry Association (ECIA)  
at the address below.

Electronic Components Industry Association (ECIA)  
1111 Alderman Drive, Suite 400  
Alpharetta, GA 30005

Phone: (678) 393-9990

Fax: (678) 393-9998

[rwillis@eciaonline.org](mailto:rwillis@eciaonline.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2634  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

<b>Storage Capacitor Properties and Their Effect on Energy Harvester Performance .....</b>	<b>1</b>
<i>R. Faltus, M. Jane, T. Zednicek</i>	
<b>How Low Voltage Can Go in Polymer Tantalum Capacitors .....</b>	<b>9</b>
<i>Yuri Freeman, Philip Lessner, William R. Harrell, Githin Alapatt, Igor Luzinov, Angela Kramer</i>	
<b>The Frequency Response Effects of Internal Component Configuration on Multiple Ceramic Dielectric System.....</b>	<b>16</b>
<i>S. Pala, R. Demcko, M. Berolini</i>	
<b>Power Solutions for Automotive HID Applications .....</b>	<b>25</b>
<i>Evangelista Boni, Davide Montanari, Luca Caliarì, Francesco Bergamaschi, Reggie Phillips, John Bultitude, Mark Laps, Bill Sloka</i>	
<b>Sulfur Testing of Chip Resistors.....</b>	<b>40</b>
<i>Michael Belman</i>	
<b>Tantalum Capacitor Anodes Providing Highest Capacitances: Where Are the Limits? .....</b>	<b>46</b>
<i>Helmut Haas, M. Hagymasi</i>	
<b>Hermetically Sealed SMD Tantalum Capacitors .....</b>	<b>57</b>
<i>I. Zednickova, M. Biler, J. Petrzilek, T. Zednicek</i>	
<b>High Voltage Tantalum Powder – Challenges and Opportunities for New Powder Generation .....</b>	<b>62</b>
<i>Marcel Hagymasi, Helmut Haas, Christoph Schnitter, Holger Brumm</i>	
<b>How ESA “R” Failure Rate Qualified Parts Can Fill The Requirements Of High Reliability Applications.....</b>	<b>73</b>
<i>Dominique Vignolo, Vishay Sfernice</i>	
<b>Noise of Thick-Film Resistors Used as Pressure Sensors.....</b>	<b>80</b>
<i>Vlasta Sedlakova, Jiri Majzner, Petr Sedlak, Martin Kopecky, Josef Sikula, Marina Santo Zarnik, Darko Belavic, Marko Hrovat</i>	
<b>Reliability of High-Voltage Tantalum Polymer Capacitors .....</b>	<b>86</b>
<i>Erik Reed, George Haddox</i>	
<b>Evaluation of EEE Components Suitable for Space Application.....</b>	<b>99</b>
<i>Denis Lacombe, Eddie Manthorpe</i>	
<b>Study of the Method to Evaluate Long Term Reliability for Thinner-Layered MLCC .....</b>	<b>106</b>
<i>Toshimi Oguni, Makoto Matsuda, Hideyuki Hashimoto, Tomoyuki Nakamura, Noriyuki Kubodera</i>	
<b>Ion Diffusion and Field Crystallization in Niobium Oxide Capacitors .....</b>	<b>114</b>
<i>J. Sikula, V. Sedlakova, H. Navarova, M. Kopecky, T. Zednicek</i>	
<b>The Impact of Polymer Termination on Safety MLCC’s Impedance Characteristics.....</b>	<b>123</b>
<i>Martin Kozmik, Mark Stewart</i>	
<b>Author Index</b>	