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*Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.*

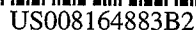
*Therefore, this*

**United States Patent**

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*Director of the United States Patent and Trademark Office*



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(56) **References Cited**

U.S. PATENT DOCUMENTS

5,377,073	A *	12/1994	Fukaumi et al. ....	361/540
6,249,424	B1 *	6/2001	Nitoh et al. ....	361/523
6,563,693	B2 *	5/2003	Nakada et al. ....	361/523
6,977,807	B2 *	12/2005	Arai et al. ....	361/523
7,206,193	B2 *	4/2007	Nagasawa et al. ....	361/535
7,417,844	B2 *	8/2008	Ishizuka et al. ....	361/301.4

\* cited by examiner

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(57) ABSTRACT

A stacked solid electrolytic capacitor and a method for manufacturing the same are disclosed. The stacked solid electrolytic capacitor includes two capacitor sets, a positive electrode conducting device, a negative electrode conducting device, and a package unit. Each capacitor set includes at least one capacitor unit. The front side of the positive electrode portion of the capacitor set extends to form a positive electrode pin. The positive electrode conducting device has at least one first positive electrode conducting lead frame and at least one second positive electrode conducting lead frame. The first positive electrode conducting lead frame is electrically connected with the second positive electrode conducting lead frame. The negative electrode conducting device has at least one negative electrode conducting lead frame, and is electrically connected with the negative electrode of the two capacitor sets by using metal conductive material.

28 Claims, 5 Drawing Sheets

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*H01G 9/00* (2006.01)

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(58) **Field of Classification Search** ..... 361/523,  
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