TEMPERATURE REGULATION USING PHASE CHANGE MATERIALS CONTAINED IN AN EMI CAN

Provided herein are multicomponent shield can(s) for temporary heat storage and junction temperature regulation using a phase change material (PCM) contained therein. Invention articles can be applied to most electronic devices, especially to small portable electronic devices such as cell phones and tablets.
INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 2015/052831

A.  CLASSIFICATION OF SUBJECT MATTER

H05K 9/00 (2006.01)
H01L 23/06 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B.  FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H05K 5/00-5/06, 9/00, H01L 23/00-23/06, 23/495, 25/00-25/04

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PAJ, Espacenet, Patentscope, K-PION, USPTO DB, PatSearch (RUPTO internal)

C.  DOCUMENTS CONSIDERED TO BE RELEVANT

Category* Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No.

X

Y

Y

Y

A

A

US 7623360 B2 (LAIRD TECHNOLOGIES, INC.) 24.11.2009, abstract, fig. 1, 20, 23, 24, col. 8, lines 20-46, col. 12, lines 30-50, col. 12, line 63 - col. 13, line 8

US 5486720 A (ANALOG DEVICES, INC.) 23.01.1996, abstract, fig. 7, 8

US 5294826 A (NORTHERN TELECOM LIMITED) 15.03.1994, abstract, col. 6, lines 14-16


US 5371404 A (MOTOROLA, INC.) 06.12.1994, abstract

US 7164587 B1 (SUN MICROSYSTEMS, INC.) 16.01.2007, abstract, fig. 1

1-6, 8-14, 16, 17

7

15

1-17

1-17

1-17

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

21 December 2015 (21.12.2015)

Date of mailing of the international search report

12 May 2016 (12.05.2016)

Name and mailing address of the ISA/ RU:

Federal Institute of Industrial Property,
Berezhkovskaya nab., 30-1, Moscow, G-59,
GSP-3, Russia, 125993

Facsimile No. (8-495) 531-63-18, (8-499) 243-33-37

Authorized officer

S. Surikov

Telephone No. (495)53 1-64-81

Form PCT/ISA/210 (second sheet) (January 2015)