

SCHEDULE 13G

Amendment No. 1  
Axcelis Technologies Incorporated  
Common Stock  
Cusip #054540109

Cusip #054540109  
Item 1: Reporting Person - FMR Corp.  
Item 4: Delaware  
Item 5: 671,491  
Item 6: 0  
Item 7: 4,045,819  
Item 8: 0  
Item 9: 4,045,819  
Item 11: 4.117%  
Item 12: HC

Cusip #054540109  
Item 1: Reporting Person - Edward C. Johnson 3d  
Item 4: United States of America  
Item 5: 0  
Item 6: 0  
Item 7: 4,045,819  
Item 8: 0  
Item 9: 4,045,819  
Item 11: 4.117%  
Item 12: IN

Cusip #054540109  
Item 1: Reporting Person - Abigail P. Johnson  
Item 4: United States of America  
Item 5: 0  
Item 6: 0  
Item 7: 4,045,819  
Item 8: 0  
Item 9: 4,045,819  
Item 11: 4.117%  
Item 12: IN

SCHEDULE 13G - TO BE INCLUDED IN  
STATEMENTS  
FILED PURSUANT TO RULE 13d-1(b) or 13d-2(b)

Item 1(a). Name of Issuer:  
Axcelis Technologies Incorporated

Item 1(b). Name of Issuer's Principal Executive Offices:  
55 Cherry Hill Drive  
Beverly, MA 01915

Item 2(a). Name of Person Filing:  
FMR Corp.

Item 2(b). Address or Principal Business Office or, if None,  
Residence:  
82 Devonshire Street, Boston,  
Massachusetts 02109

Item 2(c). Citizenship:  
Not applicable

Item 2(d). Title of Class of Securities:  
Common Stock

Item 2(e). CUSIP Number:

Item 3. This statement is filed pursuant to Rule 13d-1(b) or 13d-2(b) and the person filing, FMR Corp., is a parent holding company in accordance with Section 240.13d-1(b)(ii)(G). (Note: See Item 7).

Item 4. Ownership

(a) Amount Beneficially Owned: 4,045,819

(b) Percent of Class: 4.117%

(c) Number of shares as to which such person has:

(i) sole power to vote or to direct the vote: 671,491

(ii) shared power to vote or to direct the vote: 0

(iii) sole power to dispose or to direct the disposition of: 4,045,819

(iv) shared power to dispose or to direct the disposition of: 0

Item 5. Ownership of Five Percent or Less of a Class.

If this statement is being filed to report the fact that as of the date hereof, the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following (X).

Item 6. Ownership of More than Five Percent on Behalf of Another Person.

Not applicable

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company.

See attached Exhibit(s) A, B.

Item 8. Identification and Classification of Members of the Group.

Not Applicable. See attached Exhibit A.

Item 9. Notice of Dissolution of Group.

Not applicable.

Item 10. Certification.

Inasmuch as the reporting persons are no longer the beneficial owners of more than five percent of the number of shares outstanding, the reporting persons have no further reporting obligation under Section 13(d) of the Securities and Exchange Commission thereunder, and the reporting persons have no obligation to amend this Statement if any material change occurs in the facts set forth herein.

Signature

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this Schedule 13G in connection with FMR Corp.'s beneficial ownership of the Common Stock of Axcelis Technologies Incorporated at December 31, 2002 is true, complete and correct.

February 14, 2003  
Date

/s/Eric D. Roiter  
Signature

Eric D. Roiter  
Duly authorized under Power of Attorney  
dated December 30, 1997 by and on behalf  
of FMR Corp. and its direct and indirect  
subsidiaries

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FILED PURSUANT TO RULE 13d-1(b) or 13d-2(b)

Pursuant to the instructions in Item 7 of Schedule 13G, Fidelity Management & Research Company ("Fidelity"), 82 Devonshire Street, Boston, Massachusetts 02109, a wholly-owned subsidiary of FMR Corp. and an investment adviser registered under Section 203 of the Investment Advisers Act of 1940, is the beneficial owner of 3,374,328 shares or 3.434% of the Common Stock outstanding of Axcelis Technologies Incorporated ("the Company") as a result of acting as investment adviser to various investment companies registered under Section 8 of the Investment Company Act of 1940.

Edward C. Johnson 3d, FMR Corp., through its control of Fidelity, and the funds each has sole power to dispose of the 3,374,328 shares owned by the Funds.

Neither FMR Corp. nor Edward C. Johnson 3d, Chairman of FMR Corp., has the sole power to vote or direct the voting of the shares owned directly by the Fidelity Funds, which power resides with the Funds' Boards of Trustees. Fidelity carries out the voting of the shares under written guidelines established by the Funds' Boards of Trustees.

Fidelity Management Trust Company, 82 Devonshire Street, Boston, Massachusetts 02109, a wholly-owned subsidiary of FMR Corp. and a bank as defined in Section 3(a)(6) of the Securities Exchange Act of 1934, is the beneficial owner of 671,100 shares or 0.683% of the Common Stock outstanding of the Company as a result of its serving as investment manager of the institutional account(s).

Edward C. Johnson 3d and FMR Corp., through its control of Fidelity Management Trust Company, each has sole dispositive power over 671,100 shares and sole power to vote or to direct the voting of 671,100 shares of Common Stock owned by the institutional account(s) as reported above.

Geode Capital Management, LLC, 53 State Street, Boston, Massachusetts 02109, a Delaware limited liability company ("Geode LLC"), is the beneficial owner of 391 shares or 0.000% of the outstanding common stock of the Company. Geode LLC is wholly-owned by Fidelity Investors III Limited Partnership ("FILP III"), a Delaware limited partnership. Geode LLC is an investment adviser registered under Section 203 of the Investment Advisers Act of 1940. Fidelity Investors Management, LLC ("FIML"), a Delaware limited liability company, is the general partner and investment manager of FILP III, and is an investment manager registered under Section 203 of the Investment Advisers Act of 1940. The managers of Geode LLC, the members of FIML and the limited partners of FILP III are certain shareholders and employees of FMR Corp.

Members of the Edward C. Johnson 3d family are the predominant owners of Class B shares of common stock of FMR Corp., representing approximately 49% of the voting power of FMR Corp. Mr. Johnson 3d owns 12.0% and Abigail Johnson owns 24.5% of the aggregate outstanding voting stock of FMR Corp. Mr. Johnson 3d is Chairman of FMR Corp. and Abigail P. Johnson is a Director of FMR Corp. The Johnson family group and all other Class B shareholders have entered into a shareholders' voting agreement under which all Class B shares will be voted in accordance with the majority vote of Class B shares. Accordingly, through their ownership of voting common stock and the execution of the shareholders' voting agreement, members of the Johnson family may be deemed,

under the Investment Company Act of 1940, to form a controlling group with respect to FMR Corp.

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STATEMENTS

FILED PURSUANT TO RULE 13d-1(b) or 13d-2(b)  
RULE 13d-1(f)(1) AGREEMENT

The undersigned persons, on February 14, 2003, agree and consent to the joint filing on their behalf of this Schedule 13G in connection with their beneficial ownership of the Common Stock of Axcelis Technologies Incorporated at December 31, 2002.

FMR Corp.

By /s/ Eric D. Roiter  
Eric D. Roiter  
Duly authorized under Power of Attorney  
dated December 30, 1997, by and on behalf  
of FMR Corp. and its direct and indirect  
subsidiaries

Edward C. Johnson 3d

By /s/ Eric D. Roiter  
Eric D. Roiter  
Duly authorized under Power of Attorney  
dated December 30, 1997, by and on behalf  
of Edward C. Johnson 3d

Abigail P. Johnson

By /s/ Eric D. Roiter  
Eric D. Roiter  
Duly authorized under Power of Attorney  
dated December 30, 1997, by and on behalf  
of Abigail P. Johnson

Fidelity Management & Research Company

By /s/ Eric D. Roiter  
Eric D. Roiter  
Senior V.P. and General Counsel