As filed with the Securities and Exchange Commission on October 25, 2004

Registration No. 333-67215

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

POST EFFECTIVE AMENDMENT NO. 1 TO FORM S-8 REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

MICROCHIP TECHNOLOGY INCORPORATED

(Exact Name Of Registrant As Specified In Its Charter)

Delaware

(State or Other Jurisdiction of Incorporation or Organization) 86-0629024 (IRS Employer Identification No.)

2355 West Chandler Boulevard Chandler, Arizona 85224 (Address of Principal Executive Offices, Including Zip Code)

> Microchip Technology Incorporated 1997 Nonstatutory Stock Option Plan (Full Title of the Plan)

Steve Sanghi President and Chief Executive Officer MICROCHIP TECHNOLOGY INCORPORATED 2355 West Chandler Boulevard Chandler, Arizona 85224 (480) 792-7200 (Telephone Number, Including Area Code, Of Agent For Service)

EXPLANATORY STATEMENT

This post-effective amendment to the registration statement on Form S-8 (Registration No. 333-67215) is being filed by Microchip Technology Incorporated (the "Registrant") to reflect the transfer from the Registrant's 1997 Nonstatutory Stock Option Plan (the "1997 Plan") to the Registrant's 2004 Equity Incentive Plan (the "2004 Equity Plan") of 7,758,910.845 shares of the Registrant's common stock that have been previously registered on Form S-8 for issuance pursuant to the 1997 Plan and up to 5,000,000 shares of common stock subject to outstanding options, to the extent such options expire, that remained available for issuance under the 1997 Plan or the Registrant's 1993 Stock Option Plan (the "1993 Plan"). The Registrant has previously registered shares of its common stock for issuance under the 1997 Plan pursuant to (i) the Registrant's registration statement on Form S-8, dated November 13, 1998 (Registration No. 333-67215), registering 2,000,000 shares of common stock; (ii) the Registrant's registration statement on Form S-8, dated December 23, 1999 (Registration No. 333-67215), registering 1,500,000 shares of common stock; (iii) the Registrant's registration statement on Form S-8, dated December 6, 2000 (Registration No. 333-51322), registering 8,250,000 shares of common stock; and (iv) the Registrant's registration statement on Form S-8, dated September 17, 2002 (Registration No. 333-99655), registering 5,900,000 shares of common stock.

On June 21, 2004, the Registrant's Board of Directors approved the transfer from the 1997 Plan to the 2004 Equity Plan, of (a) up to 7,900,000 shares of common stock which remained available for issuance under the 1997 Plan; and (b) up to 5,000,000 shares of common stock subject to outstanding options, to the extent such options expire, that remained available for issuance under the 1997 Plan or the Registrant's 1993 Plan. On August 20, 2004, the Registrant's stockholders approved, among other things, the transfer of the shares of common stock from the 1997 Plan to the 2004 Equity Plan as described above.

On the date hereof, the Registrant is also filing a registration statement on Form S-8 to register, among other things, the shares of common stock being transferred to the 2004 Equity Plan from the 1997 Plan.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Post-Effective Amendment No. 1 to Form S-8 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Chandler, State of Arizona, on October 25, 2004.

MICROCHIP TECHNOLOGY INCORPORATED

By: /s/ Steve Sanghi

Steve Sanghi, President, Chief Executive Officer and Chairman of the Board

Pursuant to the requirements of the Securities Act of 1933, this Amendment to Registration Statement has been signed by the following persons on the dates indicated and in the capacities indicated.

| Signature | | Title | Date |
|--------------------------|--------|---|------------------|
| /s/ Steve Sanghi | | Chairman of the Board, President and Chief Executive Officer (Principal Executive Officer) | October 25, 2004 |
| Steve Sanghi | | | |
| Matthew W. Chapman* | | Director | October 25, 2004 |
| Albert J. Hugo-Martinez* | | Director | October 25, 2004 |
| L.B. Day* | | Director | October 25, 2004 |
| Wade F. Meyercord* | | Director | October 25, 2004 |
| /s/ Gordon Parnell | | Vice President, Chief Financial Officer (Principal Financial | October 25, 2004 |
| Gordon Parnell | | and Accounting Officer) | |
| *By: /s/ Steve | Sanghi | Attorney in-Fact | October 25, 2004 |
| Steve Sa | nghi | | |
| | | | |

QuickLinks

EXPLANATORY STATEMENT SIGNATURES