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Canadian Market Opportunities— Import Profile



Government
of Canada

Regional Industrial
Expansion

Gouvernement
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Expansion industrielle
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Canada

INTEGRATED CIRCUITS

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FOR MORE INFORMATION PLEASE CONTACT:

Market Information and Analysis Division
Market Development Branch
Department of Regional Industrial Expansion
235 Queen Street
Ottawa, Ontario
K1A 0H5
Tel: (613) 992-4446

OR

The nearest DRIE Regional Office.
These offices are listed on page 8
of this publication.

REFERENCE SOURCES

Department of Regional Industrial Expansion

Statistics Canada

Revenue Canada

Supply and Services Canada

EXPLANATORY NOTES

Valuation

Imports are generally recorded at the values established for customs duty purposes according to the provisions of the Customs Act. Customs values are identical to selling prices for most transactions between non-affiliated firms, but customs values exceed selling prices for many transactions between affiliated firms. All values are reported in Canadian dollars and do not include duty.

Average Growth Rate

Growth rates are calculated on the basis of annual compounding.

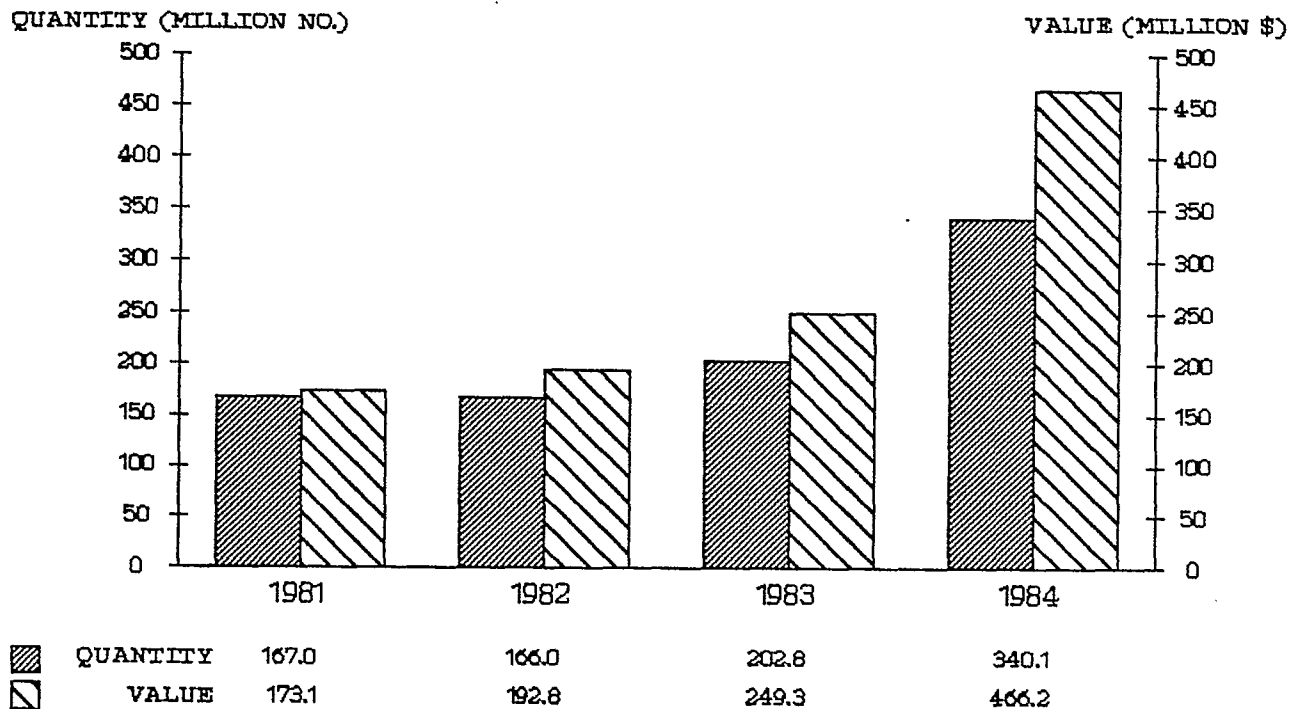
CANADIAN MARKET OPPORTUNITIES - IMPORT PROFILE

INTEGRATED CIRCUITS

INTRODUCTION

This report is one of a continuing series designed to increase business awareness of the potential existing in the Canadian marketplace for domestic production and to stimulate Canadian business to explore further potential market opportunities in Canada. It is important to emphasize that this report does not attempt any assessment as to the feasibility of manufacturing or competing in a particular market and should be treated as an indicator or starting point for the manufacturer or entrepreneur.

A - IMPORT TRENDS
OF
INTEGRATED CIRCUITS



From 1981 to 1984 imports of integrated circuits increased at an average annual rate of 27 per cent in terms of quantity and 39 per cent in terms of dollar value.

B - IMPORTS BY MAJOR FOREIGN COUNTRY OF EXPORT
(BASED ON 1984 FIGURES)

FOREIGN COUNTRY OF EXPORT	1981	1982	1983	1984	UNIT	AVERAGE	PER CENT
					PRICE	ANNUAL	CHANGE
					1984	GROWTH	1983-1984
					\$	RATE	%
						1981-1984	
						%	%
UNITED STATES							
QUANTITY ('000 NO)	142 624	139 786	168 429	269 295		24	60
VALUE (\$000)	153 151	167 186	211 573	381 997	1.42	36	81
HONG KONG							
QUANTITY ('000 NO)	1 717	2 464	4 153	6 722		58	62
VALUE (\$000)	2 906	6 194	11 031	21 293	3.17	94	93
TAIWAN							
QUANTITY ('000 NO)	2 247	2 556	3 968	7 229		48	82
VALUE (\$000)	2 139	2 560	4 542	15 014	2.08	91	231
JAPAN							
QUANTITY ('000 NO)	1 024	2 038	2 305	4 190		60	82
VALUE (\$000)	2 191	3 285	5 206	9 032	2.16	60	73
SOUTH KOREA							
QUANTITY ('000 NO)	560	1 546	1 009	6 861		131	580
VALUE (\$000)	757	1 944	1 319	7 128	1.04	111	440
OTHER							
QUANTITY ('000 NO)	18 827	17 568	22 899	45 836		35	100
VALUE (\$000)	11 917	11 616	15 674	31 724	0.69	39	102
<hr/>							
TOTAL							
QUANTITY ('000 NO)	166 999	165 958	202 763	340 133		27	68
VALUE (\$000)	173 061	192 785	249 345	466 188	1.37	39	87

During 1984 imports totalled 340.1 million units valued at \$466.2 million which was an increase of 68 per cent in terms of quantity and 87 per cent in terms of dollar value from 1983. The average unit price in 1984 was \$1.37. Average unit prices from Hong Kong, Japan and Taiwan were considerably higher than those from the United States and South Korea.

The United States has consistently been the major exporter to Canada and accounted for 79 per cent of the quantity and 82 per cent of the value in 1984. The major "other" countries of export were France, Malaysia, Puerto Rico, the Philippines, the United Kingdom and West Germany. These countries as a group had average unit prices much below those of the U.S.

This import class includes the following types of integrated circuits, (i.e. tiny complexes of electronic components and their connections that are produced in or on a small slice of material such as silicon): bipolar, digital, hybrid, linear, logic, memory and general purpose.

C - IMPORT MARKET CONCENTRATION
(BY % OF TOTAL 1984 VALUE)

<u>TOP 5 IMPORTERS</u>	<u>TOP 10 IMPORTERS</u>	<u>TOP 20 IMPORTERS</u>	<u>TOP 25 IMPORTERS</u>
58	69	78	80

The five major importers accounted for 58 per cent of the total imports for 1984 and were located in Ontario. Four of these were identified as manufacturers, and one as a wholesaler. The main manufacturers were identified as producers of telephone and telegraph apparatus and radio and television equipment.

D - TYPE AND LOCATION OF THE 25 MAJOR IMPORTERS - 1984

	<u>MANUFACTURERS</u>		<u>WHOLESALEERS</u>		<u>TOTAL</u>	
	<u>NO. OF IMPORTERS</u>	<u>VALUE (\$000)</u>	<u>NO. OF IMPORTERS</u>	<u>VALUE (\$000)</u>	<u>NO. OF IMPORTERS</u>	<u>VALUE (\$000)</u>
Ontario	10	267 279	4	42 651	14	309 930
Quebec	6 (X)	33 356 (X)	5 (X)	32 355 (X)	11 (X)	65 711 (X)
Western Provinces						
Atlantic Provinces	-	-	-	-	-	-
TOTAL	16	300 635	9	75 006	25	375 641
Per Cent of 1984 Total Value		64%		16%		81%

(X) Quebec and Western Provinces aggregated to preserve confidentiality

There were approximately 656 importers of integrated circuits during 1984. The top 25 importers accounted for 81 per cent or \$375.6 million of the total imports. Of these 25 importers, 16 were identified as manufacturers with their total imports representing 64 per cent of the import total. The majority of manufacturers (63 per cent) were located in Ontario and were identified as being mainly manufacturers of telephone and telegraph apparatus and radio and television equipment.

E - CANADIAN PRODUCTION

There are at least 11 manufacturers of integrated circuits in Canada as outlined below:

SILICON CIRCUITS

Northern Telecom Limited (Ontario)
Mitel Semiconductor (Ontario)
Linear Technology Incorporated (Ontario)
Siltronics Ltd. (Ontario)

HYBRID CIRCUITS

Northern Telecom Limited (Quebec)
Mitel Semiconductor (Ontario)
Garrett Manufacturing Limited (Ontario)
Canadian Marconi Company (Quebec)
Epitek International Inc. (Ontario)
Anatek Microcircuits Inc. (B.C.)
Microtel Limited (B.C.)
I.B.M. Canada Limited (Quebec)

Statistics Canada reports that shipments of integrated circuits were \$28.4 million in 1982, the latest year for which information is available.

F - EXPORTS

Statistics Canada reports that exports of semi-conductors and parts during 1984 amounted to \$565 million. Separate export data are not available for exports of integrated circuits.

G - CANADIAN TARIFFS, 1985

TARIFF ITEM	DESCRIPTION	BY % OF TOTAL VALUE (1984)	TARIFF TREATMENT				
			BRITISH(1) PREFER- ENTIAL TARIFF %	MOST FAVURED NATION TARIFF %	GENERAL TARIFF %	GENERAL PREFER- ENTIAL TARIFF %	U.K. AND IRELAND %
44544-01	Transistors and other semi-conductor devices; parts thereof; materials for use in the manufacture thereof:	91	Free	Free	25	Free	Free

(1) Excludes U.K. and Ireland

Tariff Arrangements and Foreign Countries of Export:

MOST FAVOURED NATION: UNITED STATES, JAPAN, TAIWAN

*MOST FAVOURED NATION OR GENERAL PREFERENTIAL: HONG KONG, SOUTH KOREA

ENQUIRIES CONCERNING TARIFFS SHOULD BE DIRECTED TO THE NEAREST CUSTOMS AND EXCISE OFFICE OR TO:
 TARIFF PROGRAMS
 REVENUE CANADA
 CUSTOMS AND EXCISE
 OTTAWA, ONTARIO K1A 0L5
 TEL: (613) 996-9474

*NOTE: In order to qualify for General Preferential Tariff treatment a special certificate of origin is required.

H - FEDERAL GOVERNMENT PROCUREMENTS

The Department of Supply and Services do purchase integrated circuits, however, separate data are not available.

I - MARKET SUMMARY

The principal imports of silicon integrated circuits are probably of the numerous standard varieties usually referred to as general purpose. Only the largest world suppliers can successfully compete in this type of market.

Opportunities do exist, however, for the smaller scale operations in special market niches, for example: the production of custom designs to customer specifications, or the provision of design services under customer contract. In the last case opportunities always exist for the design houses to migrate into full silicon processing, including packaging and testing.

In the case of the thick and thin film hybrid integrated circuits a more general market can be addressed with reasonable expectation of success owing to a much smaller capital requirement than for a silicon operation.

It should be noted, however, that the markets for all categories of integrated circuit manufacture are highly changeable and risky. Production and marketing should be attempted only by those with first hand experience and knowledge.

This report was prepared by:

The Market Development Branch of the
Department of Regional Industrial Expansion
in collaboration with the Department's
Electronics and Aerospace Branch

For more information please contact nearest DRIE Regional Office

Newfoundland

P.O. Box 8950
Parsons Building
90 O'Leary Avenue
St. John's, Newfoundland
A1B 3R9
Tel: (709) 772-4884

Prince Edward Island

P.O. Box 1115
Confederation Court Mall
134 Kent Street, Suite 400
Charlottetown, Prince Edward Island
C1A 7M8
Tel: (902) 566-7400

Nova Scotia

P.O. Box 940, Station M
1496 Lower Water Street
Halifax, Nova Scotia
B3J 2V9
Tel: (902) 426-2018

New Brunswick

P.O. Box 1210
Assumption Place
770 Main Street
Moncton, New Brunswick
E1C 8P9
Tel: (506) 857-6400

Québec

C.P. 247
Tour de la Bourse
800, Place Victoria, Bureau 3800
Montréal (Québec)
H4Z 1E8
Tel: (514) 283-8185

Ontario

P.O. Box 98
1 First Canadian Place, Suite 4840
Toronto, Ontario
M5X 1B1
Tel: (416) 365-3737

Manitoba

P.O. Box 981
400-3 Lakeview Square
185 Carlton Street
Winnipeg, Manitoba
R3C 2V2
Tel: (204) 949-6163

Saskatchewan

Canada Building
6th Floor, 105-21st Street East
Saskatoon, Saskatchewan
S7K 0B3
Tel: (306) 975-4400

Alberta

Cornerpoint Building
10179 - 105th Street, Suite 505
Edmonton, Alberta
T5J 3S3
Tel: (403) 420-2944

British Columbia

P.O. Box 49178
Bentall Postal Station
Bentall Tower IV
1101 - 1055 Dunsmuir Street
Vancouver, British Columbia
V7X 1K8
Tel: (604) 666-0434

Yukon

Suite 301
108 Lambert Street
Whitehorse, Yukon
Y1A 1Z2
Tel: (403) 668-4655

Northwest Territories

P.O. Bag 6100
Precambrian Building
Yellowknife, Northwest Territories
X1A 1C0
Tel: (403) 920-8568 or 8571