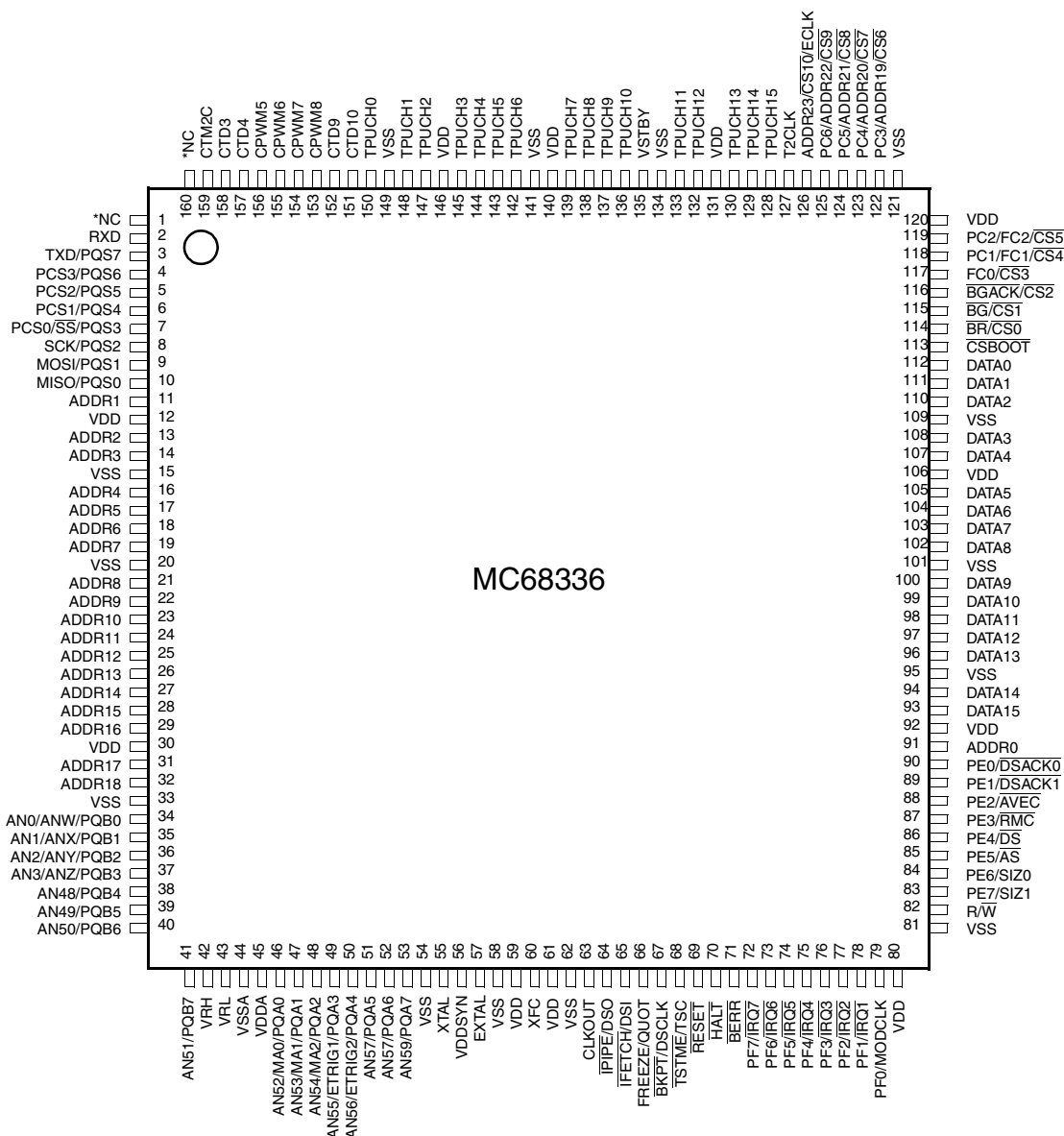




APPENDIX B

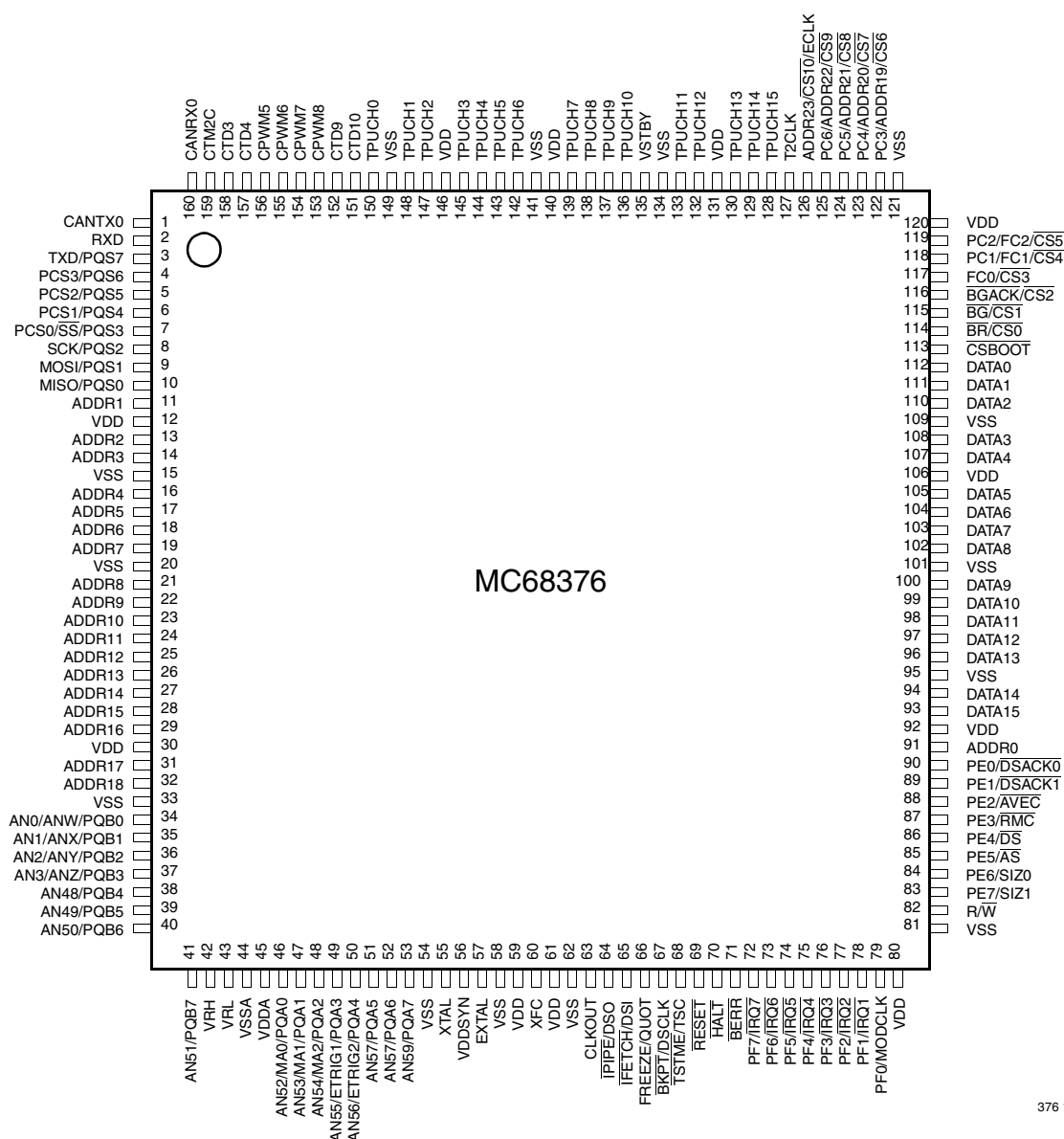
MECHANICAL DATA AND ORDERING INFORMATION

The MC68336 and the MC68376 are both available in 160-pin plastic surface mount packages. This appendix provides package pin assignment drawings, a dimensional drawing and ordering information.



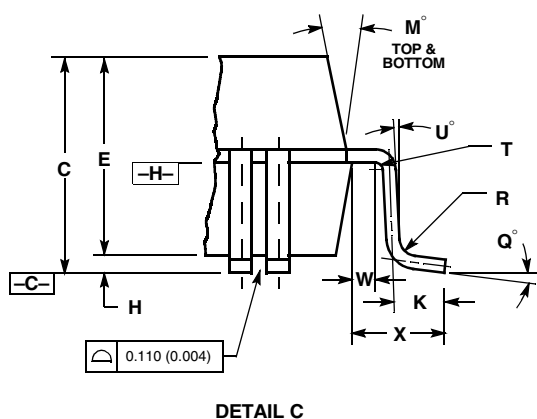
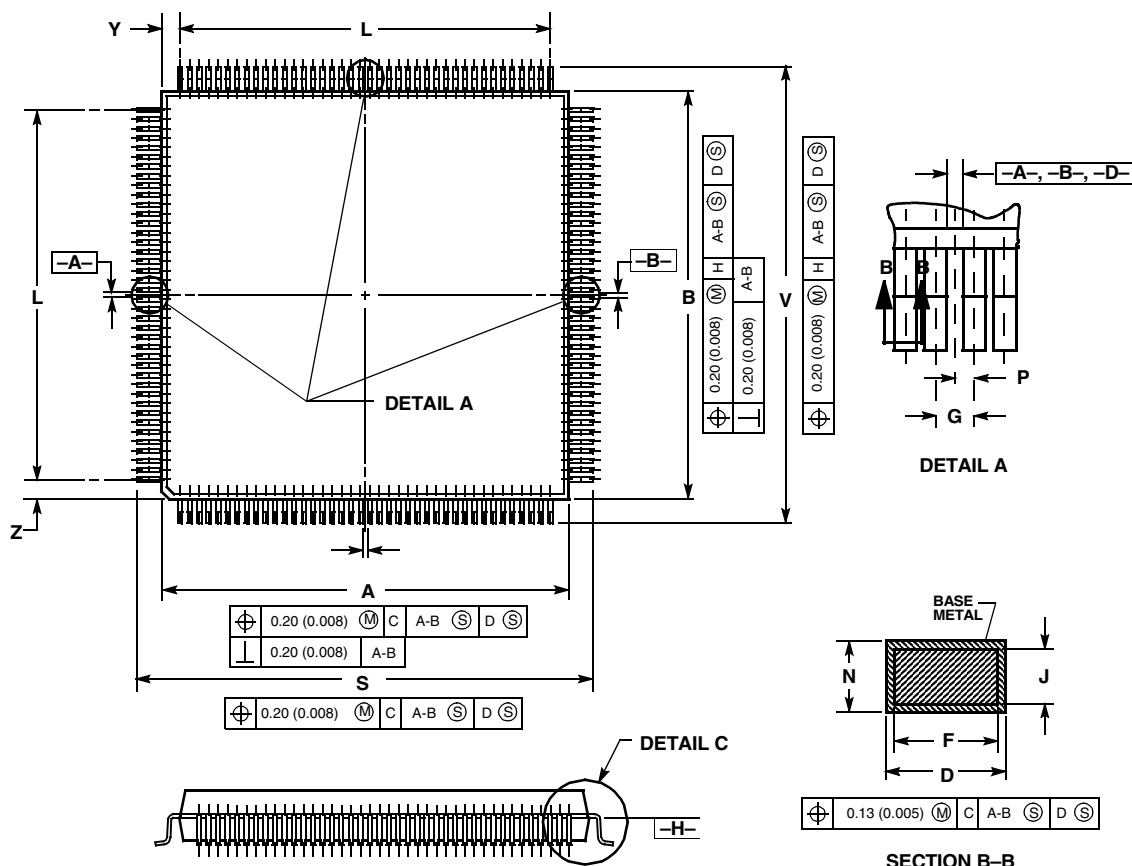
*NOTE: MC68336 REVISION D AND LATER (F60K AND LATER MASK SETS) HAVE ASSIGNED PINS 1 AND 160 AS "NO CONNECT", TO ALLOW PIN COMPATIBILITY WITH THE MC68376. FOR REVISION C (D65J MASK SET) DEVICES, PIN 1 IS V_{SS} AND PIN 160 IS V_{DD} .

Figure B-1 MC68336 Pin Assignments for 160-Pin Package



376 160-PIN QFP

Figure B-2 MC68376 Pin Assignments for 160-Pin Package



NOTES

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER
3. DATUM PLAN -H- IS LOCATED AT BOTTOM OF LEAD AND IS COINCIDENT WITH THE LEAD WHERE THE LEAD EXITS THE PLASTIC BODY AT THE BOTTOM OF THE PARTING LINE.
4. DATUMS -A-, -B-, AND -D- TO BE DETERMINED AT DATUM PLANE -H-.
5. DIMENSIONS S AND V TO BE DETERMINED AT SEATING PLANE -C-.
6. DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION. ALLOWABLE PROTRUSION IS 0.25 (0.01) PER SIDE. DIMENSIONS A AND B DO INCLUDE MOLD MISMATCH AND ARE DETERMINED AT DATUM PLANE -H-.
7. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.08 (0.003) TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION. DAMBAR CANNOT BE LOCATED ON THE LOWER RADIUS OR THE FOOT.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	27.90	28.10	1.098	1.106
B	27.90	28.10	1.098	1.106
C	3.35	3.85	0.132	1.106
D	0.22	0.38	0.009	0.015
E	3.20	3.50	0.126	0.138
F	0.22	0.33	0.009	0.013
G	0.65	BSC	0.026	REF
H	0.25	0.35	0.010	0.014
J	0.11	0.23	0.004	0.009
K	0.70	0.90	0.028	0.035
L	25.35	BSC	0.998	REF
M	5	16	5	16
N	0.11	0.19	0.004	0.007
P	0.325	BSC	0.013	REF
Q	0	7	0	7
R	0.13	0.30	0.005	0.012
S	31.00	31.40	1.220	1.236
T	0.13	—	0.005	—
U	0	—	0	—
V	31.00	31.40	1.220	1.236
W	0.4	—	0.016	—
X	1.60	REF	0.063	REF
Y	1.33	REF	0.052	REF
Z	1.33	REF	0.052	REF

Case 864A-03

Figure B-3 160-Pin Package Dimensions

B.1 Obtaining Updated MC68336/376 Mechanical Information

Although all devices manufactured by Motorola conform to current JEDEC standards, complete mechanical information regarding MC68336/376 microcontrollers is available through Motorola's Design-Net.



To download updated package specifications, perform the following steps:

1. Visit the Design-Net case outline database search engine at <http://design-net.com/cgi-bin/cases>.
2. Enter the case outline number, located in **Figure B-3** without the revision code (for example, 864A, not 864A-03) in the field next to the search button.
3. Download the file with the new package diagram.

B.2 Ordering Information

Refer to **Table B-1** for MC68336 ordering information and **Table B-2** for MC68376 ordering information. Contact a Motorola sales representative for information on ordering a custom ROM device.

Table B-1 MC68336 Ordering Information

Part Number	Package Type	Frequency (MHz)	TPU	Temperature	Package Order Quantity	Order Number
MC68336	160-pin QFP	20.97 MHz	A	-40 to +85 °C	2	SPMC68336ACFT20
					24	MC68336ACFT20
					120	MC68336ACFT20B1
				-40 to +105 °C	2	SPMC68336AVFT20
					24	MC68336AVFT20
					120	MC68336AVFT20B1
				-40 to +125 °C	2	SPMC68336AMFT20
					24	MC68336AMFT20
					120	MC68336AMFT20B1
			G	-40 to +85 °C	2	SPMC68336GCFT20
					24	MC68336GCFT20
					120	MC68336GCFT20B1
				-40 to +105 °C	2	SPMC68336GVFT20
					24	MC68336GVFT20
					120	MC68336GVFT20B1
				-40 to +125 °C	2	SPMC68336GMFT20
					24	MC68336GMFT20
					120	MC68336GMFT20B1

Table B-2 MC68376 Ordering Information



Part Number	Package Type	Frequency (MHz)	TPU	Mask ROM	Temperature	Package Order Quantity	Order Number
MC68376	160-pin QFP	20.97 MHz	A	Blank	–40 to +85 °C	2	SPMC68376BACFT20
						24	MC68376BACFT20
						120	MC68376BACFT20B1
					–40 to +105 °C	2	SPMC68376BAVFT20
						24	MC68376BAVFT20
						120	MC68376BAVFT20B1
					–40 to +125 °C	2	SPMC68376BAMFT20
						24	MC68376BAMFT20
						120	MC68376BAMFT20B1
			G	Blank	–40 to +85 °C	2	SPMC68376BGCFT20
						24	MC68376BGCFT20
						120	MC68376BGCFT20B1
					–40 to +105 °C	2	SPMC68376BGVFT20
						24	MC68376BGVFT20
						120	MC68376BGVFT20B1
					–40 to +125 °C	2	SPMC68376BGMFT20
						24	MC68376BGMFT20
						120	MC68376BGMFT20B1

