MOTOROLA

MC34250

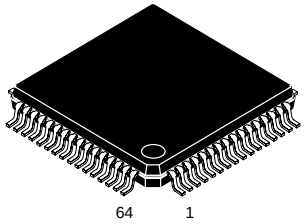
Product Preview

5.0 V, 200 M-Bit/Sec PR-IV Hard Disk Drive Read Channel

The Motorola MC34250 is a fully integrated partial response maximum likelihood disk drive read/write channel for use in zoned recording applications. This device integrates the AGC, active filter, 7 tap equalizer, Viterbi detector, frequency synthesizer, servo demodulator, 8/9 rate (0,4/4) Encoder/Decoder with write precompensation and power management in a single 64 pin 10 mm x 10 mm TQFP package.

HARD DISK DRIVE READ CHANNEL

SEMICONDUCTOR TECHNICAL DATA



FTA SUFFIX
PLASTIC PACKAGE
CASE 840F
(Thin QFP)

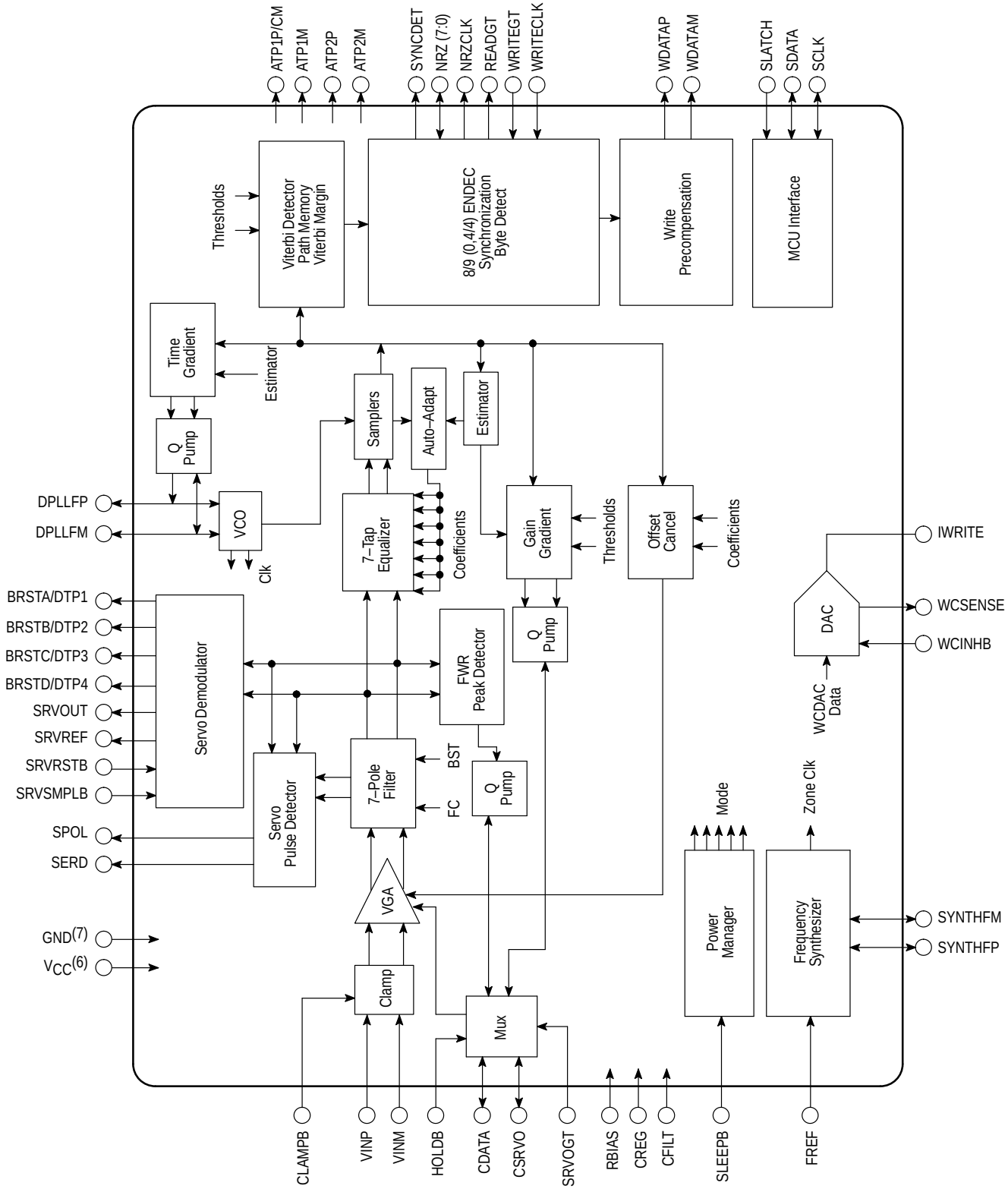
FEATURES:

- 50 to 200 MBPS Programmable Data Rate
- 800 mW at 200 MBPS and 5.0 V
- Channel Monitor Output
- Programmable AGC Charge Pump Currents with Different Values for Data and Servo Envelope Modes and Gain Gradient Mode
- Programmable AGC Peak Detector Droop Currents with Different Values for Data and Servo Envelope Modes
- Separate AGC Charge Pump Outputs for Data and Servo Modes
- Programmable Dual Threshold Qualifier or Hysteresis Comparator Type Pulse Detector for Servo Data Detection.
- ERD and Polarity Outputs for Servo Timing and Raw Encoded Data
- Integrated 7 pole 0.05° Equiripple Linear Phase Filter with Programmable Bandwidth from 5.0 MHz to 80 MHz and Different Values for Both Data and Servo Modes
- Programmable Symmetrical Boost from 0 to 10 dB and Different Values for Data and Servo Modes
- Programmable Asymmetrical Boost of Up to ±40% of Nominal Filter Group Delay in Both Data and Servo Modes
- 7 Tap Continuous Time Transversal Equalizer with 8 Bit Programmable Tap Weights and Integrated Decision Directed Sign–Sign Least Mean Squared Adaptation
- Internal Offset Cancellation Loops
- Fast Acquisition Data Phase Locked Loop with Zero Phase Restart
- Programmable Data Phase Locked Loop Charge Pump Current
- Integrated Soft Decision Viterbi Detectors with Programmable Merge References
- Integrated 8/9 Rate (0,4/4) Encoder and Decoder with Code Scrambler and Descrambler
- Programmable 2/4/8 Bit NRZ Data Interface
- Programmable Write Precompensation Delays Locked to the Frequency Synthesizer
- Differential PECL Write Data Outputs
- External Write Data Path for DC Erase or Other Non–Encoded Data
- Integrated Write Current DAC
- Programmable Power Management
- Bi–Directional Serial Microprocessor Interface
- Various Test Modes Controlled Via the Serial Microprocessor Interface

ORDERING INFORMATION

Device	Operating Temperature Range	Package
MC34250FTA	T_A = 0° to +70°C	TQFP–64

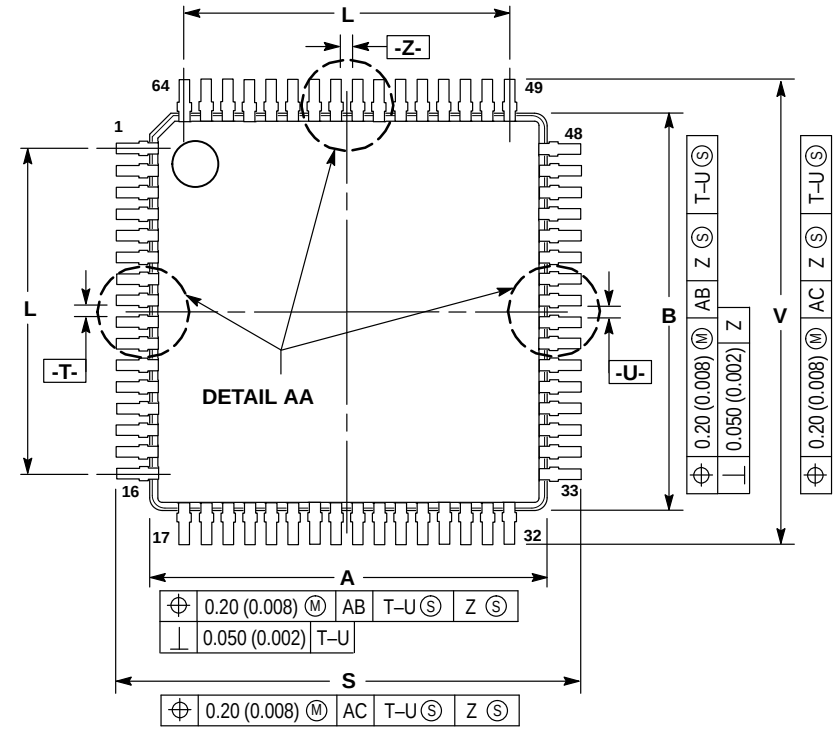
Simplified Block Diagram

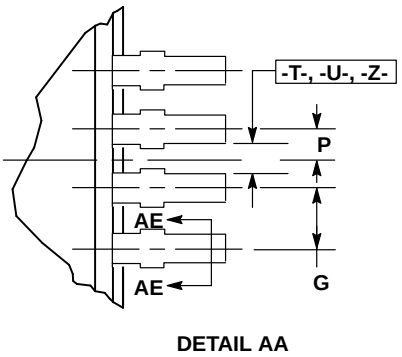


This device contains 80,000 active transistors.

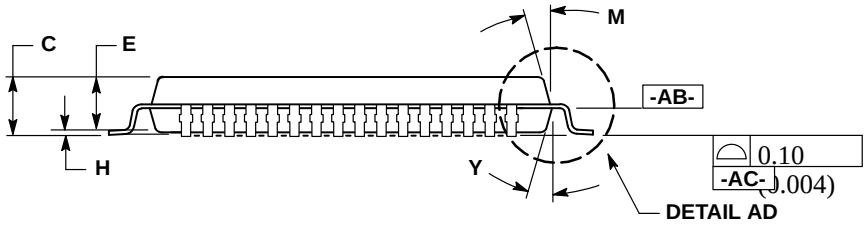
OUTLINE DIMENSIONS

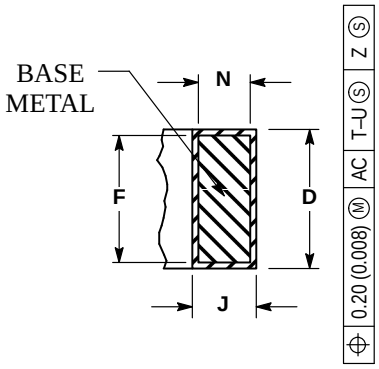
FTA SUFFIX
PLASTIC PACKAGE
CASE 840F–01
(Thin QFP)
ISSUE O



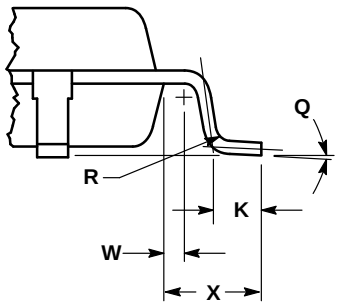


DETAIL AA





SECTION AE-AE



DETAIL AD

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DATUM PLANE -AB- 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 -T-, -U- AND -Z- TO BE DETERMINED AT DATUM PLANE -AC-.
5. DIMENSIONS S AND V TO BE DETERMINED AT SEATING PLANE -AC-.
6. DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION. ALLOWABLE PROTRUSION IS 0.25 (0.010) PER SIDE. DIMENSIONS A AND B DO INCLUDE MOLD MISMATCH AND ARE DETERMINED AT DATUM PLANE -AB-.
7. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. DAMBAR PROTRUSION SHALL NOT CAUSE THE D DIMENSION TO EXCEED 0.350 (0.014).

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	9.950	10.050	0.392	0.396
B	9.950	10.050	0.392	0.396
C	1.400	1.600	0.055	0.063
D	0.170	0.270	0.007	0.011
E	1.350	1.450	0.053	0.057
F	0.170	0.230	0.007	0.009
G	0.500 BSC		0.020 BSC	
H	0.050	0.150	0.002	0.006
J	0.090	0.200	0.004	0.008
K	0.450	0.550	0.018	0.022
L	7.500 BSC		0.295 BSC	
M	12° REF		12° REF	
N	0.090	0.160	0.004	0.006
P	0.250 BSC		0.010 BSC	
Q	1°	5°	1°	5°
R	0.100	0.200	0.004	0.008
S	11.900	12.100	0.469	0.476
V	11.900	12.100	0.469	0.476
W	0.200 REF		0.008 REF	
X	1.000 REF		0.039 REF	
Y	12° REF		12° REF	

How to reach us:

USA / EUROPE / Locations Not Listed: Motorola Literature Distribution; P.O. Box 20912; Phoenix, Arizona 85036. 1–800–441–2447 or 602–303–5454

MFAX: RMFAX0@email.sps.mot.com – TOUCHTONE 602–244–6609

INTERNET: http://Design–NET.com

JAPAN: Nippon Motorola Ltd.; Tatsumi–SPD–JLDC, 6F Seibu–Butsuryu–Center, 3–14–2 Tatsumi Koto–Ku, Tokyo 135, Japan. 03–81–3521–8315

ASIA / PACIFIC: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park, 51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852–26629298