



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.

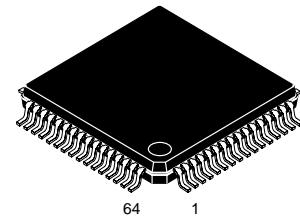
FEATURES:

- 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 $\pm 40\%$ 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

MC34250

HARD DISK DRIVE READ CHANNEL

SEMICONDUCTOR TECHNICAL DATA



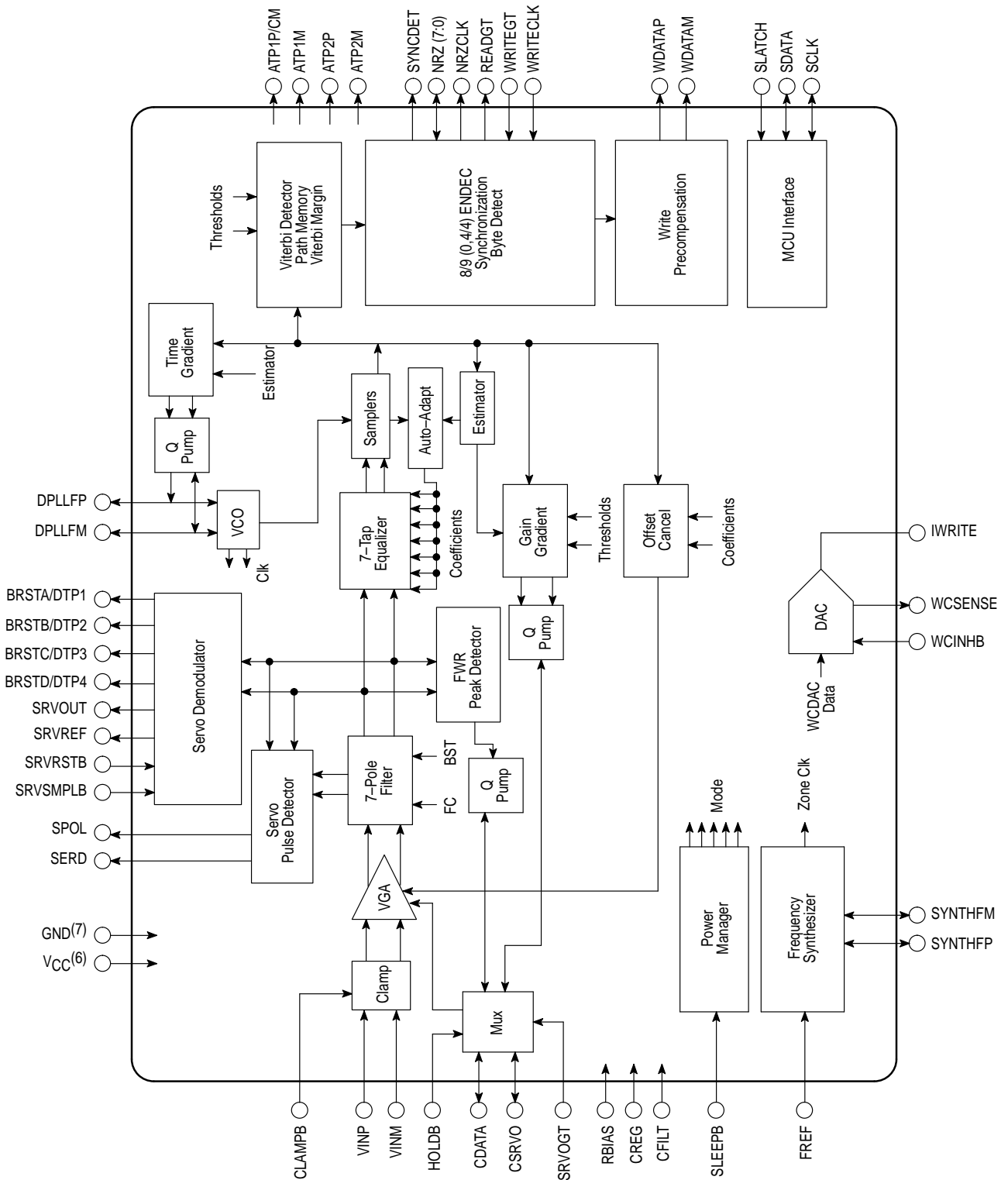
FTA SUFFIX
PLASTIC PACKAGE
CASE 840F
(Thin QFP)

ORDERING INFORMATION

Device	Operating Temperature Range	Package
MC34250FTA	$T_A = 0^\circ$ to $+70^\circ\text{C}$	TQFP-64

MC34250

Simplified Block Diagram

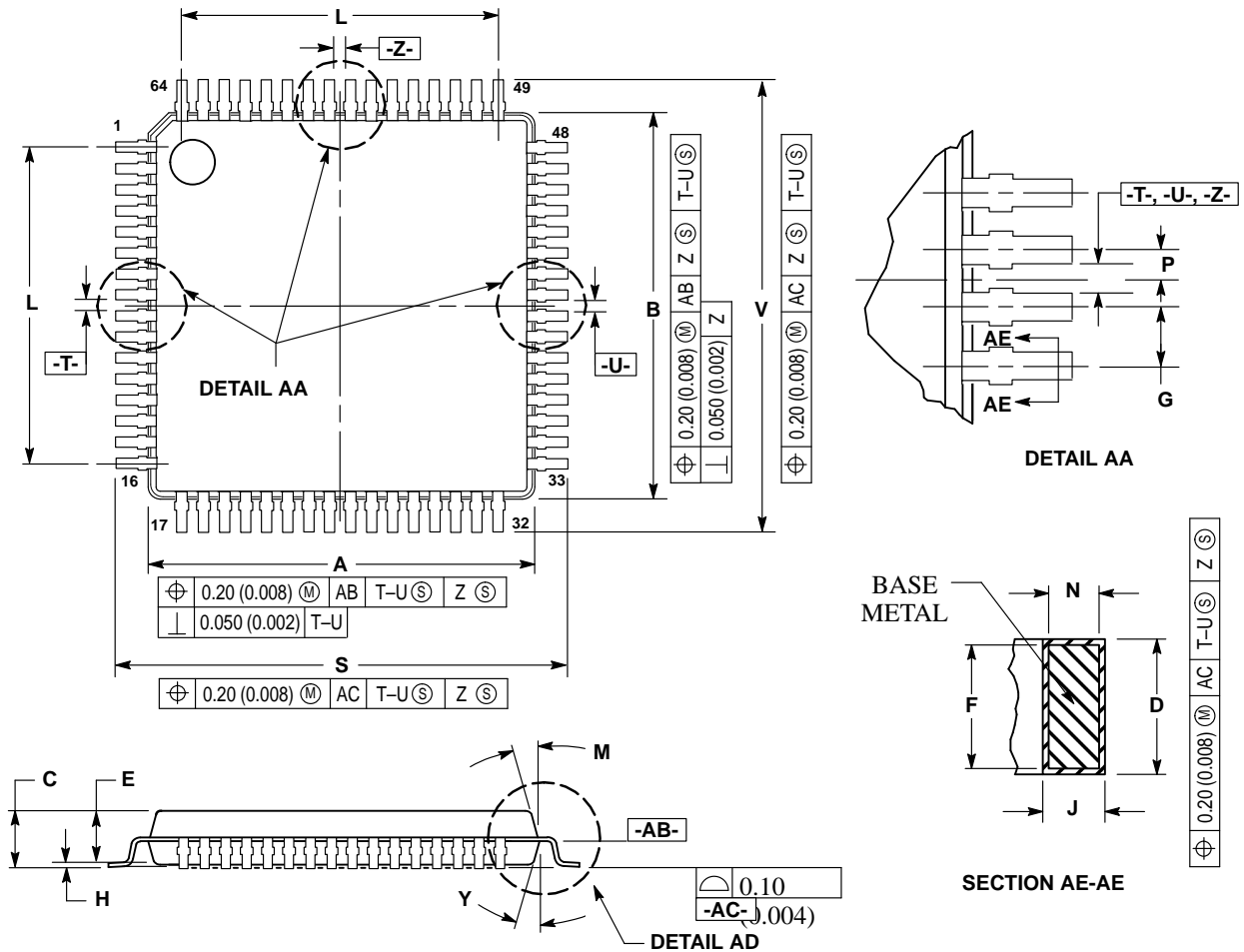


This device contains 80,000 active transistors.

MC34250

OUTLINE DIMENSIONS

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




NOTES:

- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- CONTROLLING DIMENSION: MILLIMETER.
- 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.
- DATUMS -T-, -U- AND -Z- TO BE DETERMINED AT DATUM PLANE -AC-.
- DIMENSIONS S AND V TO BE DETERMINED AT SEATING PLANE -AC-.
- 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-.
- DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. DAMBAR PROTRUSION SHALL NOT CAUSE THE D DIMENSION TO EXCEED 0.350 (0.014).

DIM	MILLIMETERS		INCHES	
	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	

MC34250

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MC34250/D

