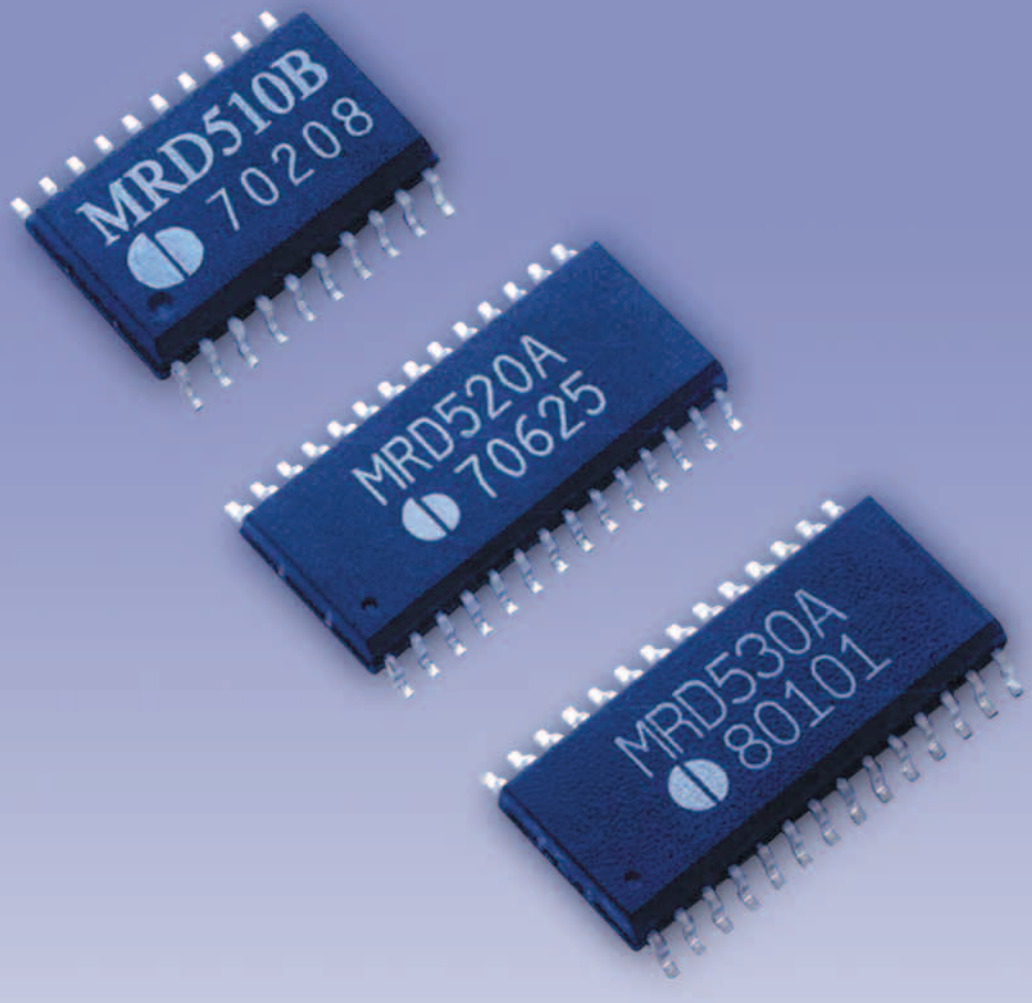
# F2F Decoder ASIC IC (TTL Output)




## MRD500 Series

- Decoder IC for F2F encoded magnetic stripe
- CMOS integrated circuit with built-in operational amplification circuitry
- Available for single, dual or triple track decoding solutions
- Support 75/210 BPI recording density
- Adjustable output clock pulse width 14 to 60 μs.
- Ignore start bit selectable for 4 or 8 bits
- Idle mode controllable by external hardware or Micro-Processor
- Accept magnetic head data input frequency from 300 to 12600 bit/sec

Uniform Industrial Corp.

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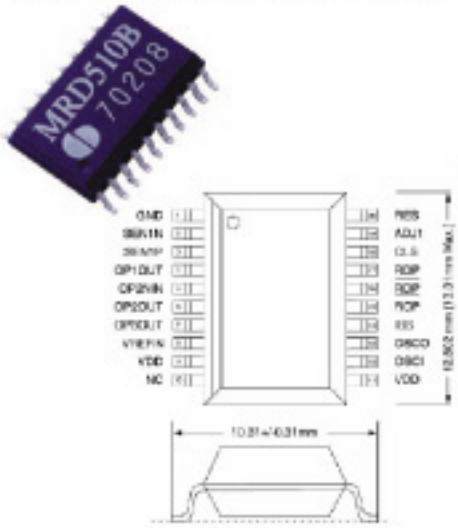
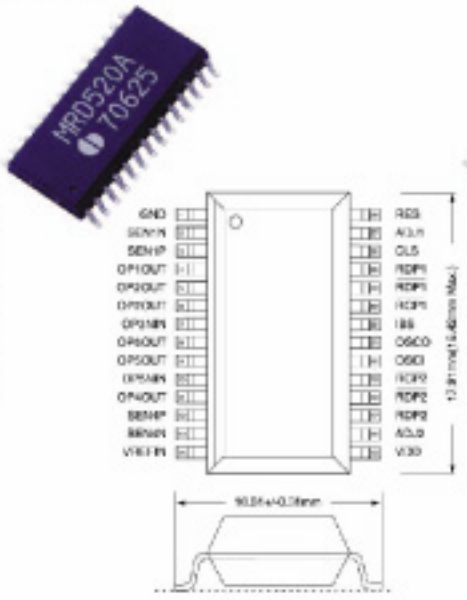
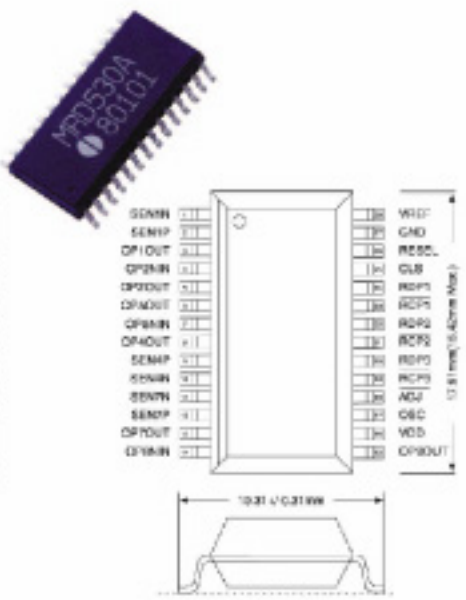



SOP 20PIN



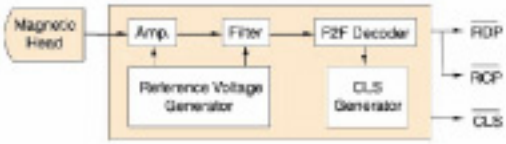

SOP 28PIN




SOP 28PIN

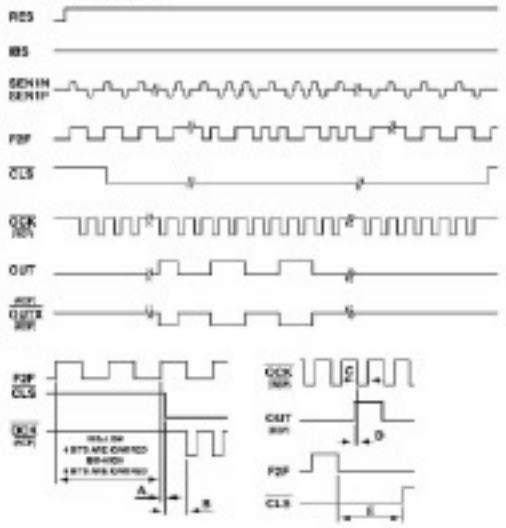
| Maximun Ratings | | | | |
|---|---|---|---|---|
| Symbol | Parameter | Conditions | Ratings | Unit |
| VCC | Supply Voltage | VDD | -0.5 to +7.0 | V |
| VIN1 | Input Voltage | IBS,OSCI,RES,ADJ1,ADJ2 | -0.5 to VCC +0.5 | V |
| VIN2 | Input Voltage | OP2NIN,OP5NIN | -0.5 to VCC +0.5 | V |
| IO | Output Current | OP1OUT ,OP2OUT, OP3OUT, OP4OUT, OP5OUT ,OP6OUT, OSCO2, OUT2, OUT2X, OUT1, OUT1X, OCK1, OCK2 | -10 to +10 | mA |
| VID | Differential Input Voltage | SEN1P-SEN1N, SEN2P-SEN2N | -1.0 to +1.0 | V |
| TOPR | Operating Temperature | | -30 to +70 | ℃ |
| TSTG | Storage Temperature | | -50 to +140 | ℃ |

| Model Configuration | | |
|---|---|---|
| Model | Channel | Packing |
| MRD510 | Single | SOP20 |
| MRD520 | Dual | SOP28 |
| MRD530 | Triple | SOP28 |




| Recommended Operating Conditions | | | | | | GND=0V |
|---|---|---|---|---|---|---|
| Symbol | Parameter | Conditions | Ratings | | | Unit |
| | | | Min. | Typ. | Max | |
| VCC | Supply Voltage | | 4.5 | 5 | 5.5 | V |
| VIH | Input High Voltage | IBS, RES | VCC-0.5 | | VCC+0.5 | V |
| VIL | Input Low Voltage | IBS, RES | -0.5 | 0 | 0.5 | V |
| IOH | Output High Source Current | OCK1, OUT1, OUT1X, OCK2, | -1.5 | | | mA |
| | at VOH=VCC-0.4 | OUT2, OUT2X | | | | |
| IOH | Output High Source Current | CLS | -0.1 | | | mA |
| | at VOH=VCC-0.4 | | | | | |
| IOL | Output Low Sink Current at | OCK1, OUT1, OUT1X, OCK2, | 3 | | | mA |
| | VOL=0.4 | OUT2, OUT2X, CLS | | | | |
| VIN | Differential Input Voltage | SEN1P-SEN1N SEN2P-SEN2N | 5 | | 80 | mV |
| FIN | Input Frequency | SEN1P-SEN1N SEN2P-SEN2N | 300 | | 13000 | Hz |
| FOSC | Oscillation Frequency | | | 2.3 | | MHz |
| ROSC | External resister between | | | 30 | | Kohm |
| | OSCI & OSCO | | | | | |
| IOPR | Signal Input at 12.6k bps | | | 3.4 | 4.0 | mA |
| ISBY | No signal input | | | 2.5 | 3.0 | mA |
| IDLE | Reset – Vss | | | 1.6 | 2.0 | mA |

**TIMING DIAGRAM**




**TIME WRIDTH OF THE A, B, C, D, E:**

A. APPROXIMATE 2.5uS

B. ONE DATA BIT

C. ADJUST ADJ1 & ADJ2 PULL HIGH RESISTER COULD BE ADJUSTED FROM 14uS TO 60uS

D. APPROXIMATE 13uS

E. APPROXIMATE 12.5mS AT OSC 2.2MHz

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