



GENERAL DESCRIPTION 功能叙述

The M3DB/FB is a CMOS ASIC decoder. It will de-code the serial data from data input. The VT signal will go high and data will be copied to the output if address are checked the same. The address input are trinary i.e. LOW(0)、OPEN(X) and HIGH(1).

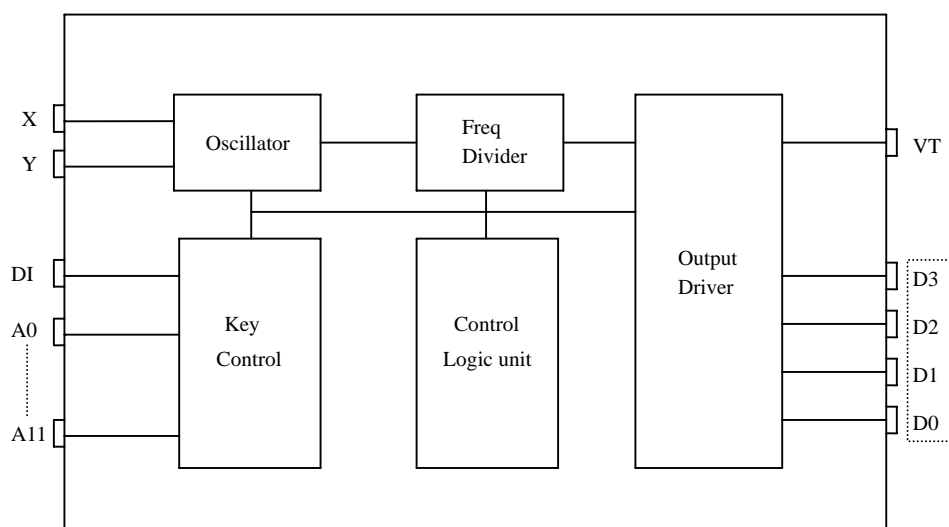
FEATURES 产品特长

- $3^{12} = 531,411$ codes, "0"、"X"、"1" Tri-states.
- 3 cycles checked each time
- S.O.Package: suffix-S.
- Address / Data types:
 - M3DB-L: Latch data outputs.
 - M3DB-M: Momentary data outputs
 - M3FB: Full address type

APPLICATIONS 产品应用

- Car/home alarm system, garage control etc..

BLOCK DIAGRAM 功能方块图



*All specs and applications shown above subject to change without prior notice.

(以上电路及规格仅供参考,本公司得径行修正)



3 STATES DECODER
3 态 解 碼 IC

| |
|----------------|
| EN/DECODER |
| M3DB/FB |

ABSOLUTE MAXIMUM RATING

(TA=25°C)

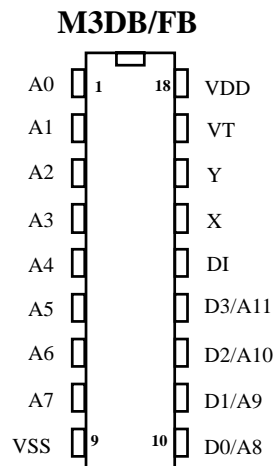
| Parameter | Rating | Unit |
|-----------------------|---------------------------|------|
| Supply Voltage | -0.3 to 12 | V |
| Input Voltage | -0.2~V _{DD} +0.2 | V |
| Operating Temperature | -20 to 70 | °C |
| Storage Temperature | -50 to 125 | °C |

ELECTRICAL CHARACTERISTICS

| Characteristics | Sym. | Min. | Typ. | Max. | Unit | Conditions |
|----------------------|-----------------|----------------------|-----------------|----------------------|------|------------------------------------------|
| Operating Voltage | V _{DD} | 2.4 | — | 12 | V | |
| Operating Current | I _{OP} | — | 0.3 | 1 | mA | No load |
| Quiescent Current | I _{SB} | — | 1 | 10 | μ A | |
| Output Drive Current | I _O | — | 2 | — | mA | @V _{DS} =1.2V |
| Input Voltage | V _{IH} | V _{DD} -0.2 | V _{DD} | V _{DD} | V | |
| | V _{IL} | V _{SS} | V _{SS} | V _{SS} +0.2 | | |
| Oscillator Frequency | Fosc | — | 38 | — | KHz | External ± 30%, R _{osc} =1.2M Ω |

PIN DESCRIPTION

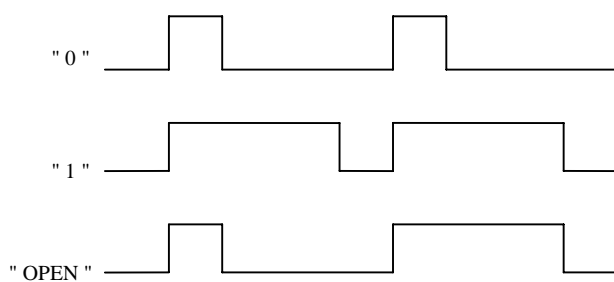
| No. | M3DB | M3FB | Description |
|-------|-------|--------|-----------------------------|
| 1~8 | A0~A7 | A0~A7 | 3 States address inputs |
| 9 | VSS | VSS | Negative power supply |
| 10~13 | D0~D3 | A8~A11 | Data outputs/Address inputs |
| 14 | DI | DI | Data input |
| 15 | X | X | Oscillator output |
| 16 | Y | Y | Oscillator input |
| 17 | VT | VT | Valid transmit |
| 18 | VDD | VDD | Positive power supply |



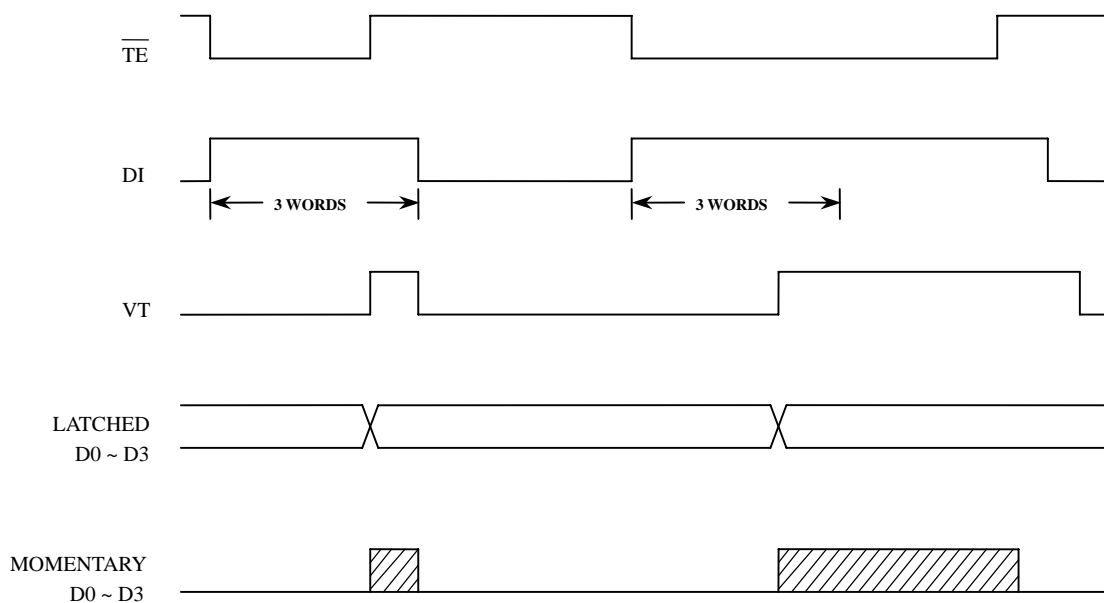


TIMING WAVEFORM

(1) Bit format



(2) TIMING DIAGRAM

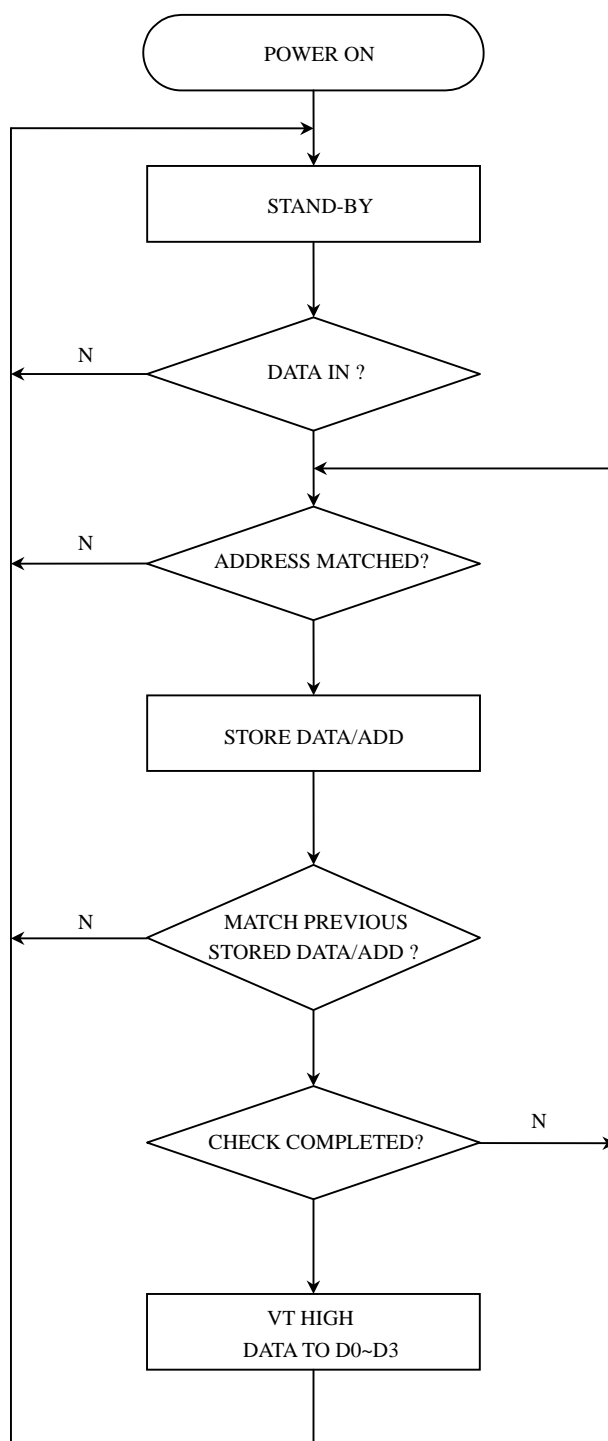




3 STATES DECODER

3 态解碼 IC

OPERATING FLOWCHART





3 STATES DECODER
3 态 解 碼 IC

EN/DECODER

M3DB/FB

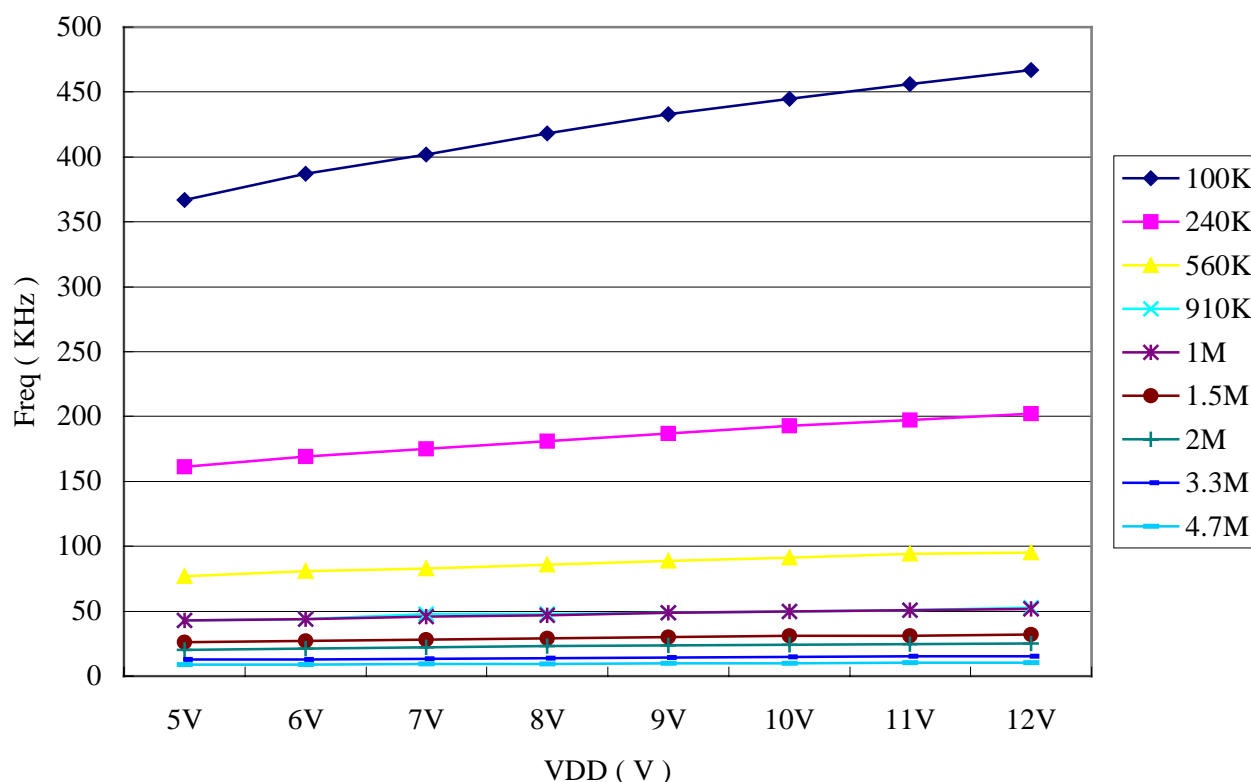
RECONNENDED OSCILLATOR PARAMETERS

| Volt Rosc (K Ω) | M3DB/FB (KHz) | | | | | | | |
|----------------------------|---------------|-----|------|-----|------|------|------|------|
| | 5V | 6V | 7V | 8V | 9V | 10V | 11V | 12V |
| 100K | 367 | 387 | 402 | 418 | 433 | 445 | 456 | 467 |
| 240K | 161 | 169 | 175 | 181 | 187 | 193 | 197 | 202 |
| 560K | 77 | 81 | 83 | 86 | 89 | 91 | 94 | 95 |
| 910K | 43 | 44 | 48 | 48 | 48 | 49 | 50 | 51 |
| 1M | 43 | 44 | 46 | 47 | 49 | 50 | 51 | 52 |
| 1.5M | 26 | 27 | 28 | 29 | 30 | 31 | 31 | 32 |
| 2M | 20 | 21 | 22 | 23 | 23.5 | 24 | 24.6 | 25 |
| 3.3M | 12.7 | 13 | 13.5 | 14 | 14.4 | 14.8 | 15.2 | 15.5 |
| 4.7M | 8.7 | 9 | 9.2 | 9.6 | 9.8 | 10 | 10.3 | 10.5 |

DATA OUTPUT

| M3E, (D0~D3) | M3DB/FB (D0~D3) |
|-----------------|--------------------|
| 0 (VSS) | 0 (VSS) |
| X (OPEN) | 1 (VDD) |
| 1 (VDD) | 1 (VDD) |
| POWER ON | 0 (VSS) |

M3DB/FB Freq-Vdd Curve





3 STATES DECODER

3 态解碼 IC

M3DB/FB

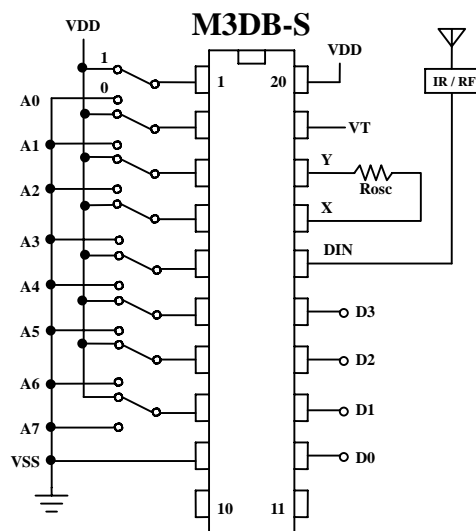
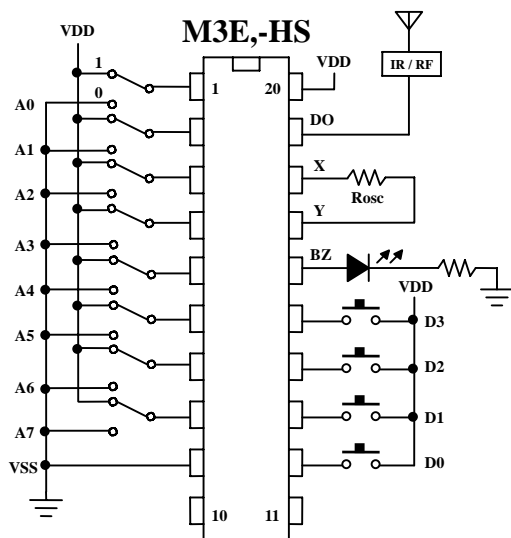
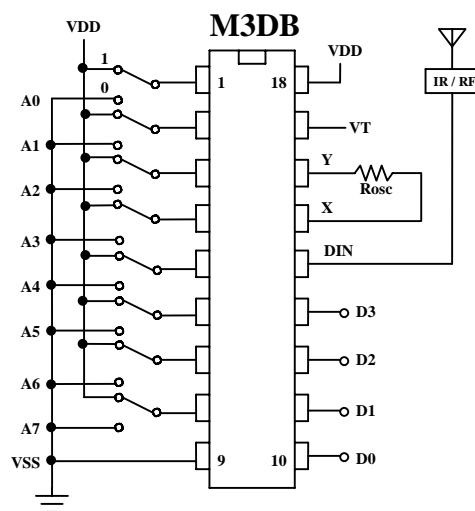
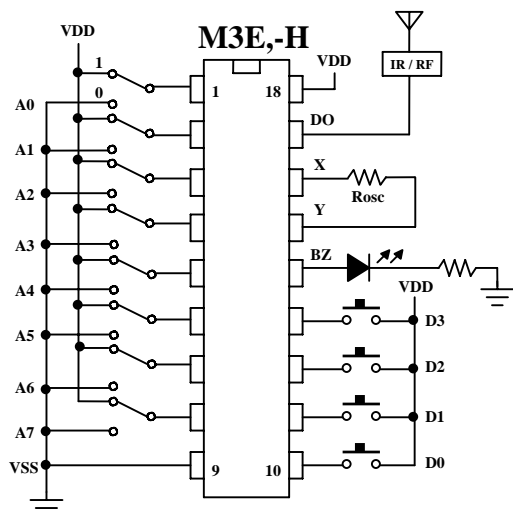
ADDRESS PIN INFORMATION

| P/N | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | A9 | A10 | A11 |
|---------|----|----|----|----|----|----|----|----|----|----|-----|-----|
| M3FB | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | A9 | A10 | A11 |
| M3DB-L1 | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | A9 | A10 | D0 |
| M3DB-L2 | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | A9 | D0 | D1 |
| M3DB-L3 | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | D0 | D1 | D2 |
| M3DB-L4 | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 | D0 | D1 | D2 | D3 |
| M3DB-L5 | A0 | A1 | A2 | A3 | A4 | A5 | A6 | D0 | D1 | D2 | D3 | D5 |
| M3DB-L6 | A0 | A1 | A2 | A3 | A4 | A5 | D0 | D1 | D2 | D3 | D5 | D6 |
| M3DB-M1 | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | A9 | A10 | D0 |
| M3DB-M2 | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | A9 | D0 | D1 |
| M3DB-M3 | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | D0 | D1 | D2 |
| M3DB-M4 | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 | D0 | D1 | D2 | D3 |
| M3DB-M5 | A0 | A1 | A2 | A3 | A4 | A5 | A6 | D0 | D1 | D2 | D3 | D5 |
| M3DB-M6 | A0 | A1 | A2 | A3 | A4 | A5 | D0 | D1 | D2 | D3 | D5 | D6 |



APPLICATION DIAGRAM 参考电路图 (DIP, SOP)

(1) DATA TYPE





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M3DB/FB

APPLICATION DIAGRAM 参考电路图 (DIP, SOP)

(2) FULL ADDRESS TYPE

