



2 STATES ENCODER

2 态编码 IC

GENERAL DESCRIPTION 功能叙述

The M1EN is a CMOS ASIC encoder. It will en-code 12 parallel inputs and serially transmit them to the output when transmits enable \overline{TE} depressed. These address inputs are 2 states i.e. LOW (0) or OPEN (1).

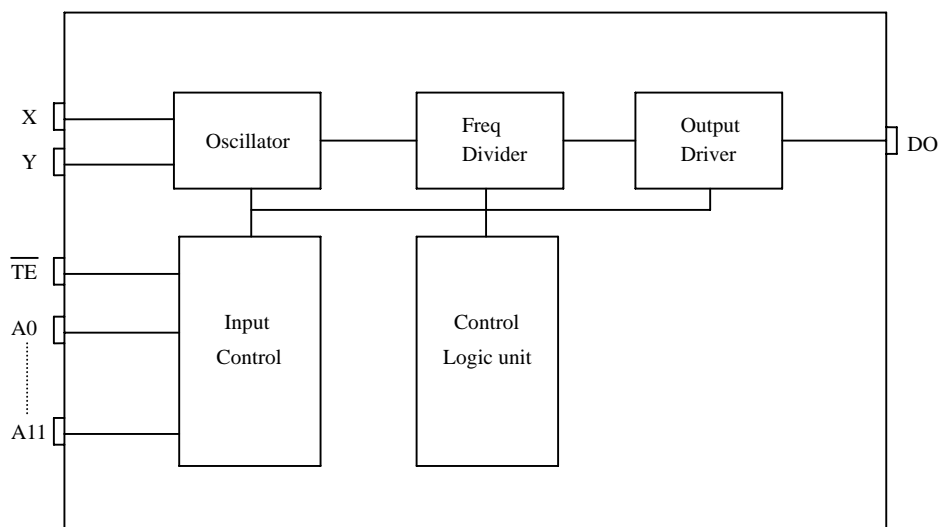
FEATURES 产品特长

- Same Rosc matched to the Decoder M1DA/FA.
- $2^{12} = 4,096$ codes.
- 4 cycles transmission each time.
- Direct data transmit type: (Eliminating \overline{TE} and diodes).
- M1EN-H: Switch to VDD.

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)



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ABSOLUTE MAXIMUM RATINGS

(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 |

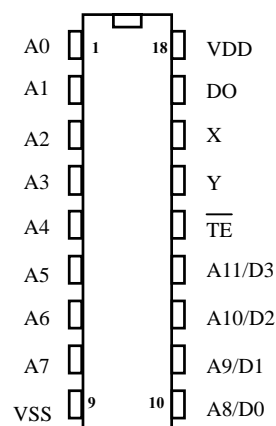
ELECTRICAL CHARACTERISTICS

| Characteristics | Sym. | Min. | Typ. | Max. | Unit | Conditions |
|----------------------|------------------|----------------------|-----------------|----------------------|------|------------------------------------------|
| Operating Voltage | V _{DD} | 2.4 | — | 12 | V | |
| Operating Current | I _{OP} | — | 0.1 | 1 | mA | No load |
| Quiescent Current | I _{SB} | — | 0.1 | 0.5 | μA | |
| 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 | F _{osc} | — | 76 | — | KHz | External ± 30%, R _{osc} =220K Ω |

PIN DESCRIPTION

| No. | Name | Description |
|-------|-----------------|-----------------------------|
| 1~8 | A0~A7 | Address inputs |
| 9 | VSS | Negative power supply |
| 10~13 | A8~A11 / D0~D3 | Address inputs / Data input |
| 14 | \overline{TE} | Transmit enable |
| 15 | Y | Oscillator output |
| 16 | X | Oscillator input |
| 17 | DO | Data output |
| 18 | VDD | Positive power supply |

M1EN



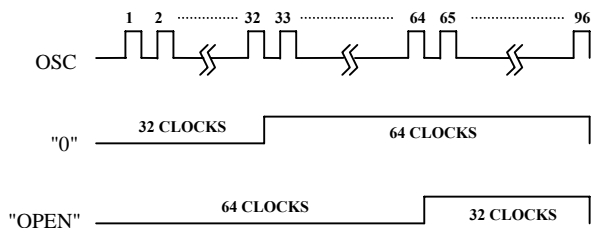


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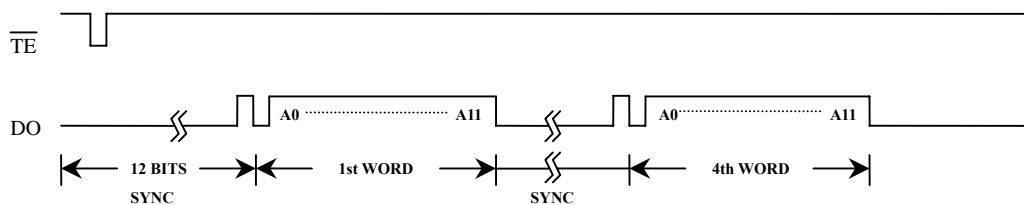
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TIMING WAVEFORM

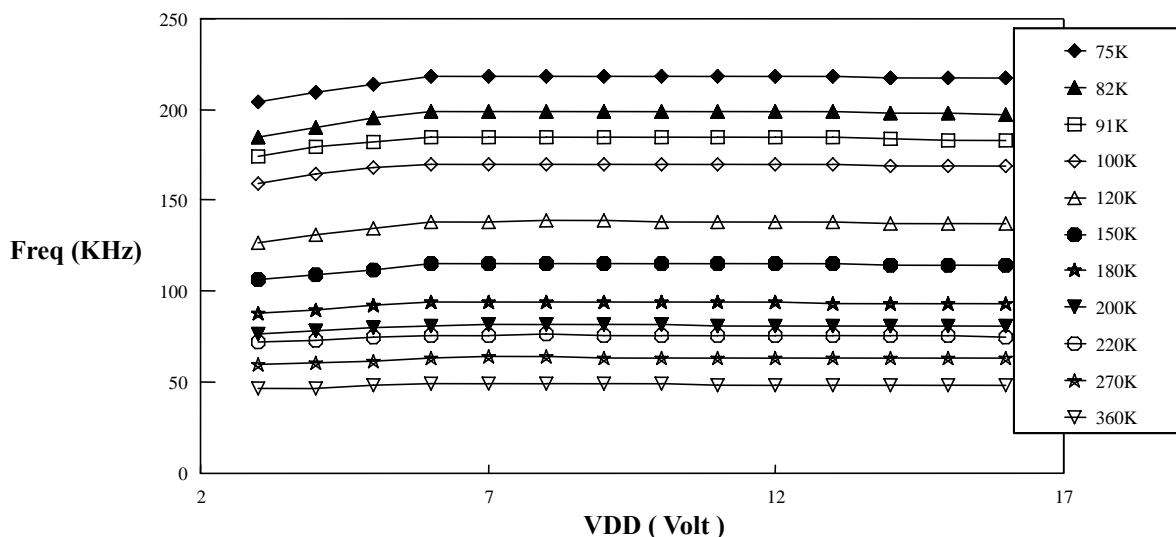
(1) BIT FORMAT



(2) TIMING DIAGRAM



M1EN F-V curve

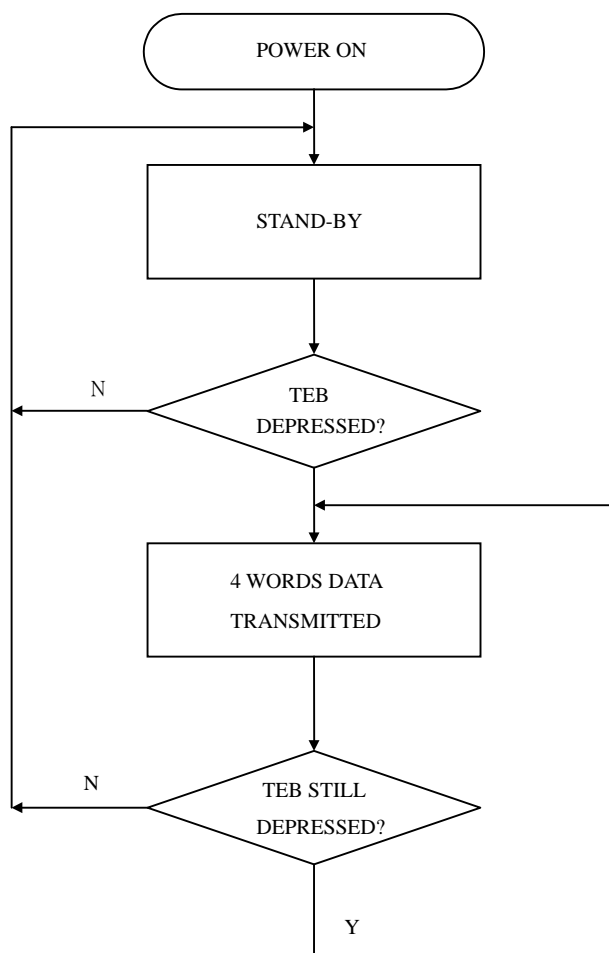




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OPERATING FLOWCHART





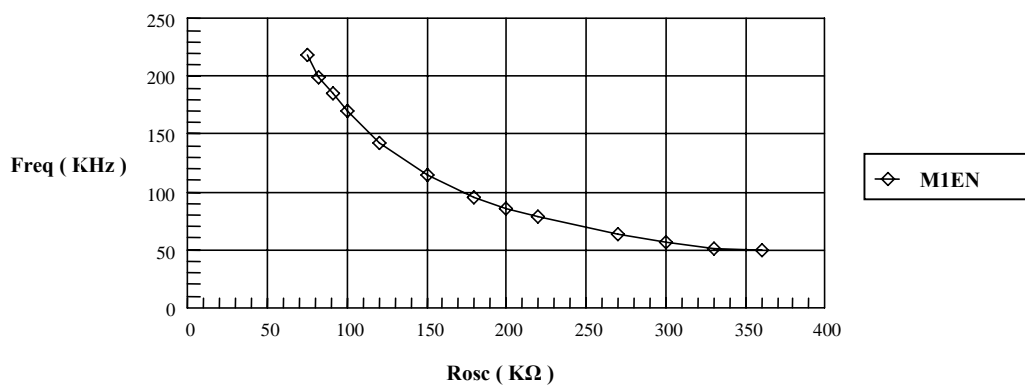
RECONNENDED OSCILLATOR PARAMETERS

| Rosc (KΩ) | M1EN (KHz) |
|-----------|------------|
| 75 | 218 |
| 82 | 199 |
| 91 | 185 |
| 100 | 170 |
| 120 | 142 |
| 150 | 115 |
| 180 | 95 |
| 200 | 86 |
| 220 | 78 |
| 270 | 63 |
| 300 | 57 |
| 330 | 51 |
| 360 | 49 |

DATA OUTPUT

| M1EN (D0~D3) | M1DA/FA (D0~D3) |
|--------------|-----------------|
| 0 (VSS) | 1 (VDD) |
| 1 (OPEN) | 0 (VSS) |

Freq-Rosc chart
(@VDD=12V)



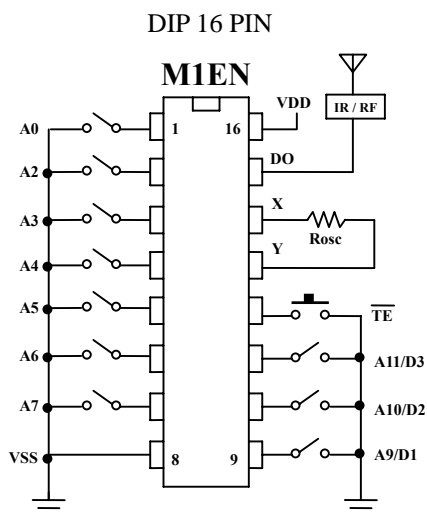
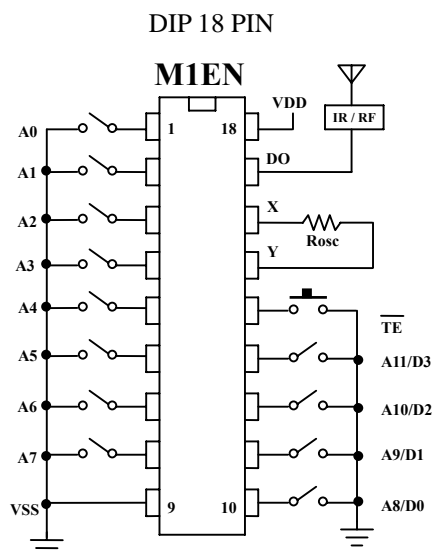


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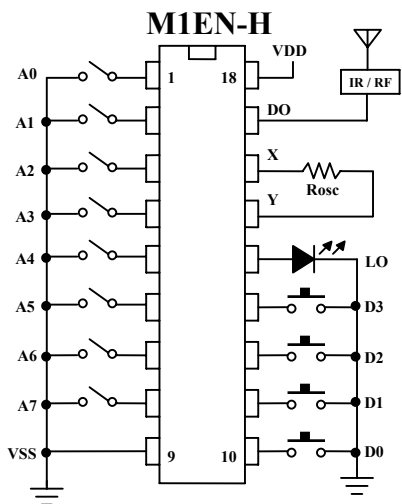
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APPLICATION DIAGRAM 参考电路图

* DATA TYPE



直接发射(VDD)



SOP 20 PIN

