



3 STATES ENCODER

3 态编码 IC

EN/DECODER

M5E

GENERAL DESCRIPTION 功能叙述

The M5E is a CMOS ASIC encoder. It will en-code 12 parallel data inputs (A0~A11) and serially transmit them to the output when transmits enable ($\overline{\text{TE}}$) depressed. The address inputs are 3 states i.e. LOW (0) or OPEN (X) and HIGH (1). It will transmit 1 cycle each time $\overline{\text{TE}}$ depressed.

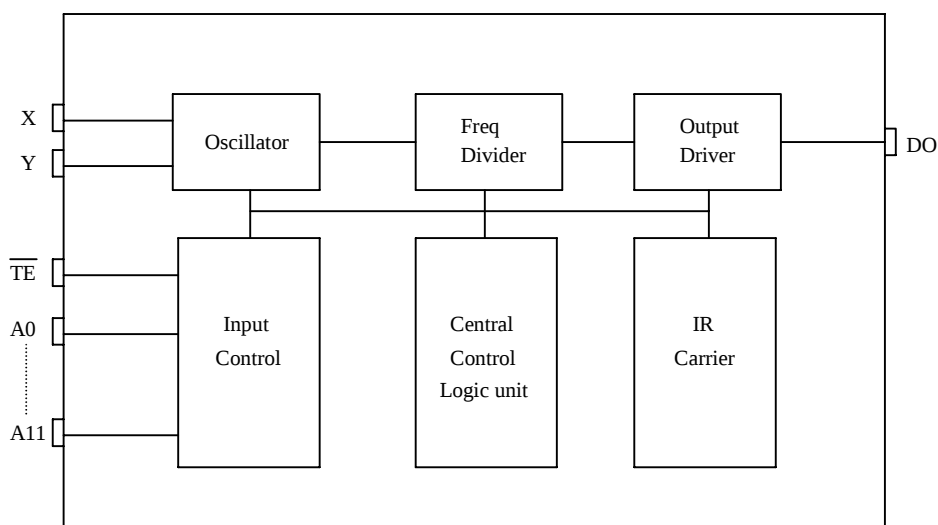
FEATURES 产品特长

- Same Rosc matched to the DECODER M5D/F
- $3^{12} = 531, 441$ codes, "0", "X", "1" Tri-states
- 4 cycles transmission each time
- Direct data transmit type : (Elimination TE and diodes)
—M5E-H : switch to VDD
- Built-in IR carrier : suffix -IR
- DIP 18 or SO available

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 RATING

(TA=25℃)

Parameter	Rating	Unit
Supply Voltage	-0.3 to 15	V
Input Voltage	-0.2~V _{DD} +0.2	V
Operating Temperature	-20 to 75	℃
Storage Temperature	-50 to 125	℃

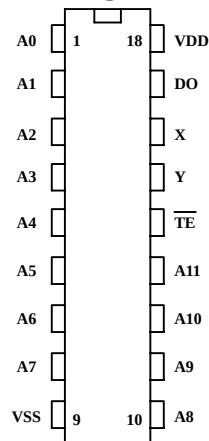
ELECTRICAL CHARACTERISTICS

Characteristics	Sym.	Min.	Typ.	Max.	Unit	Conditions
Operating Voltage	V _{DD}	2.4	—	15	V	
Operating Current	I _{OP}	—	0.1	1	μ A	No load
Quiescent Current	I _{SB}	—	0.1	0.5	mA	
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	—	76	—	KHz	External ± 30%

PIN DESCRIPTION

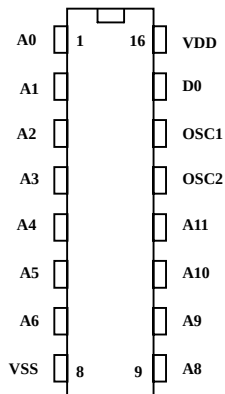
No.	Name	Description
1~8	A0~A7	3 states address inputs
9	VSS	Negative power supply
10~13	A8~A11	3 states address inputs
14	TE	Transmit enable
15	Y	Oscillator output
16	X	Oscillator input
17	DO	Data output
18	VDD	Positive power supply

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No.	Name	Description
1~7	A0~A6	3 states address inputs
8	VSS	Negative power supply
9~12	A8~A11	3 states address inputs
13	Y	Oscillator output
14	X	Oscillator input
15	DO	Data output
16	VDD	Positive power supply

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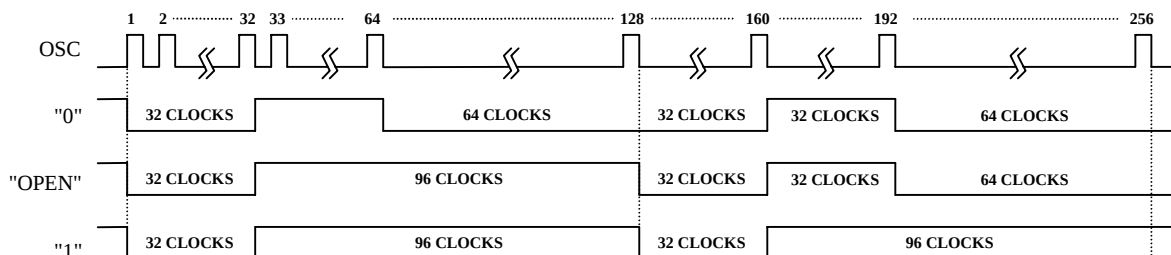
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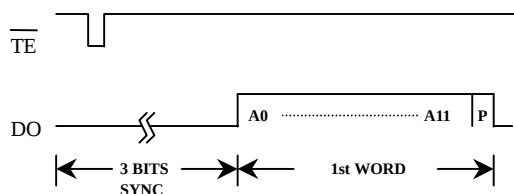
TIMING WAVEFORM

(1) Bit format

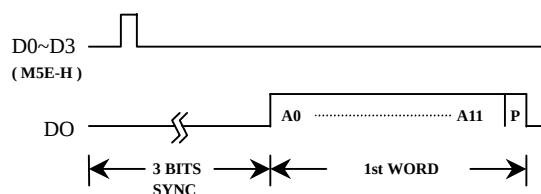


(2) TIMING DIAGRAM

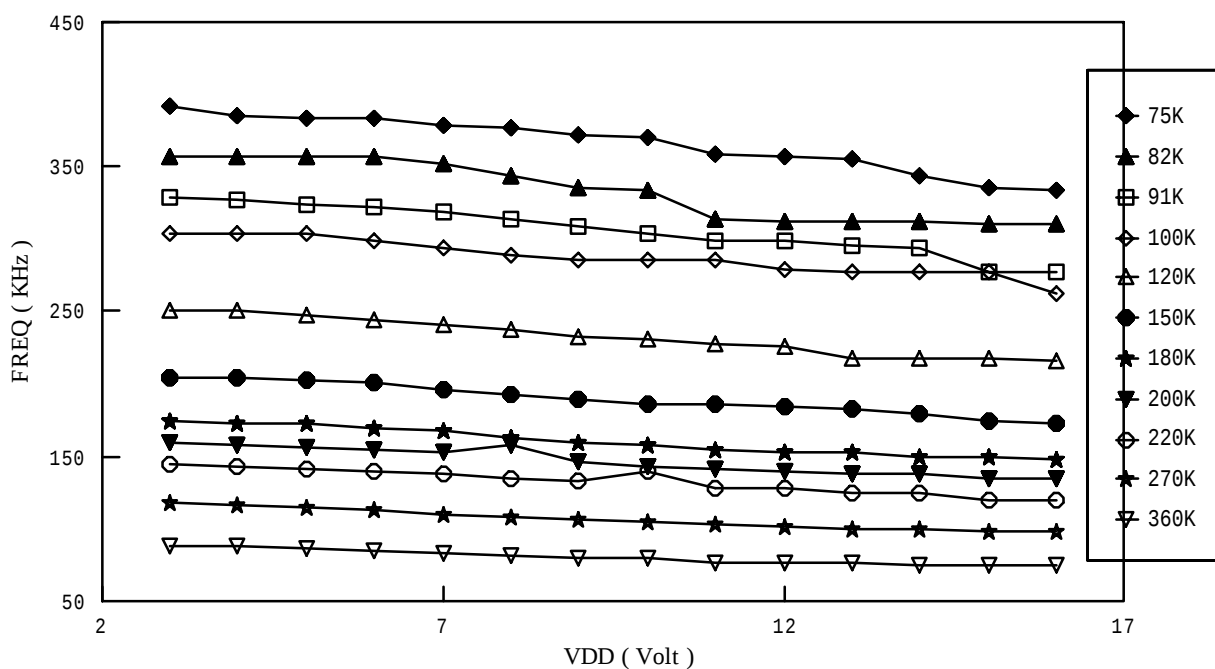
A.



B.



M5E F-V curve

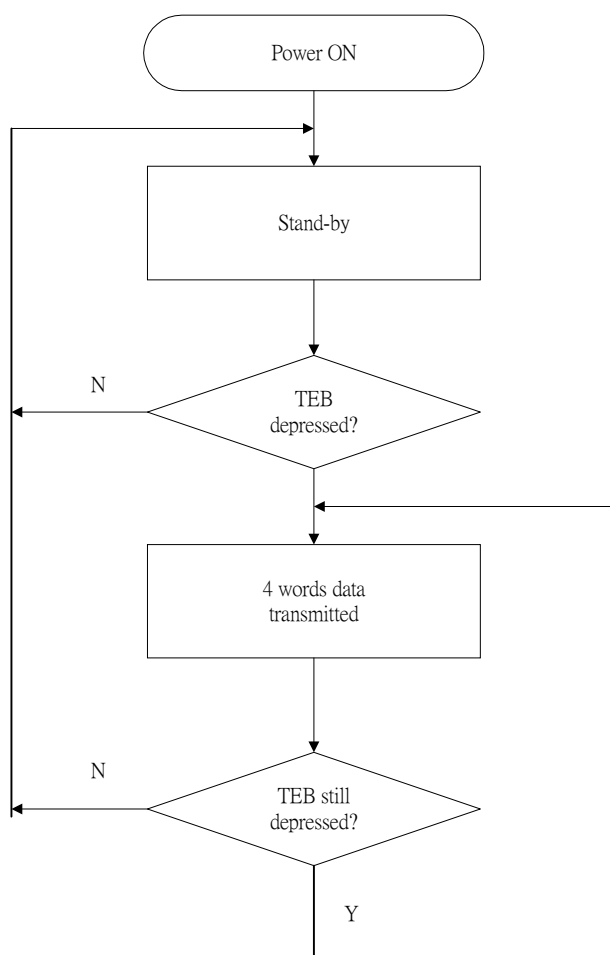




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OPERATING FLOWCHART





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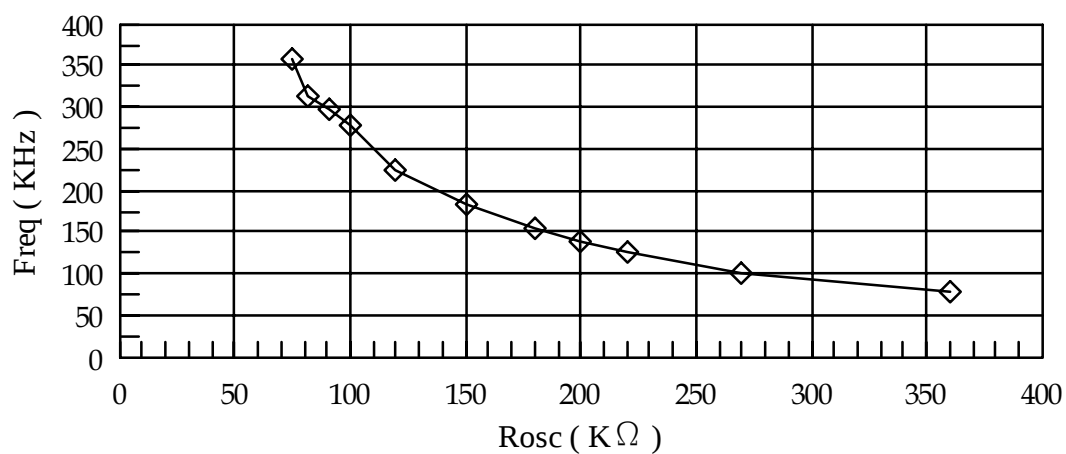
RECONNENDED OSCILLATOR PARAMETERS

Rosc (K Ω)	M5E/D/F (KHz)
75	357
82	312
91	298
100	279
120	225
150	184
180	153
200	139
220	127
270	102
360	77

DATA OUTPUT

M5E (D0~D3)	M5D/F (D0~D3)
0 (VSS)	0 (VSS)
X (OPEN)	0 (VSS)
1 (VDD)	1 (VDD)
POWER ON	0 (VSS)

Freq-Rosc Chart
(@Vdd=12V)



—◇— M5E/D/F



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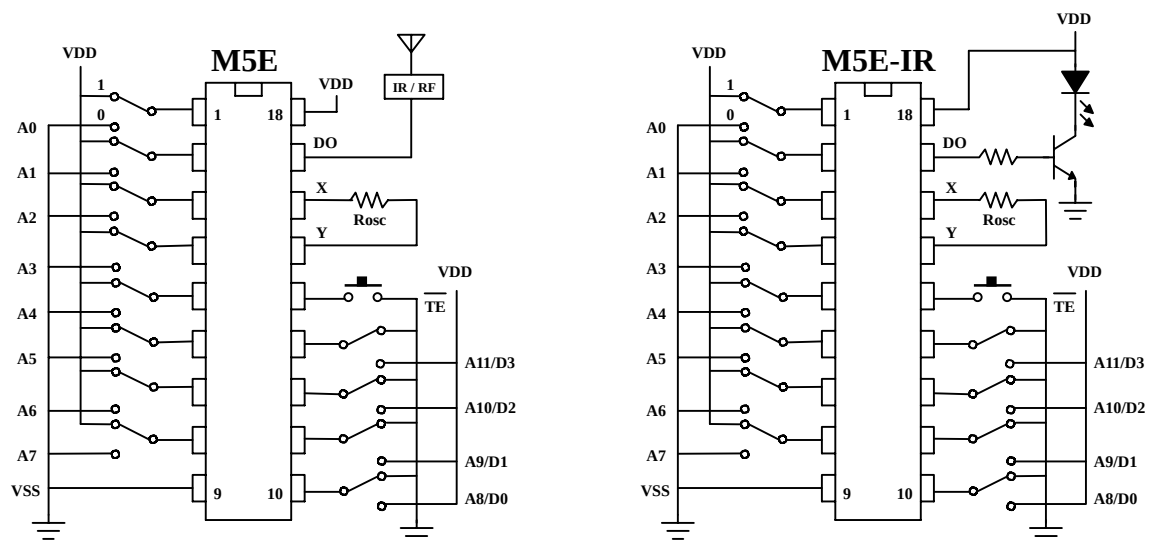
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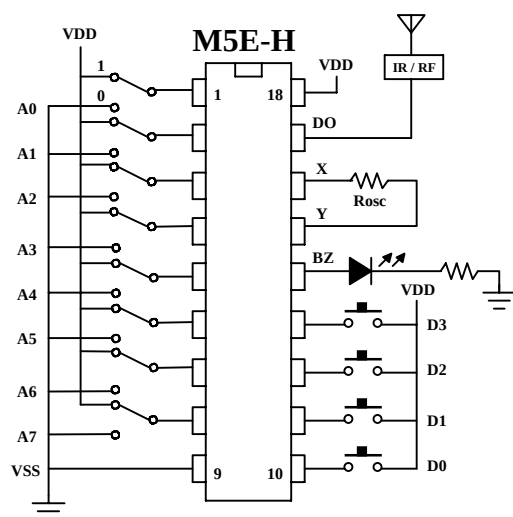
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APPLICATION DIAGRAM 参考电路图

IR 内建发射



直接发射 (VDD)





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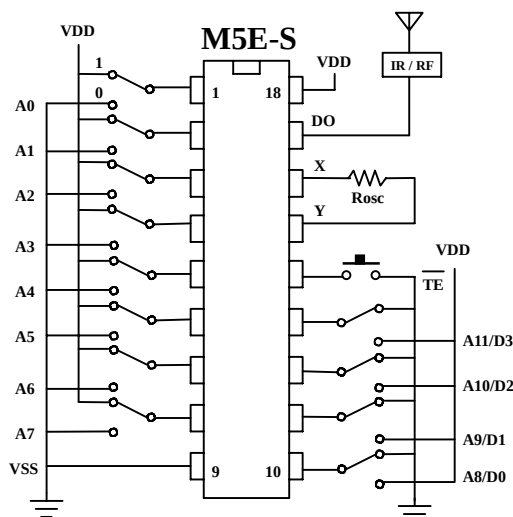
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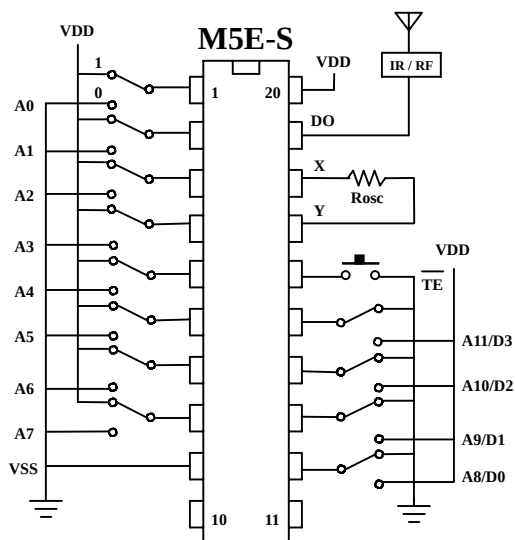
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APPLICATION DIAGRAM 参考电路图 (SOP PACKAGE)

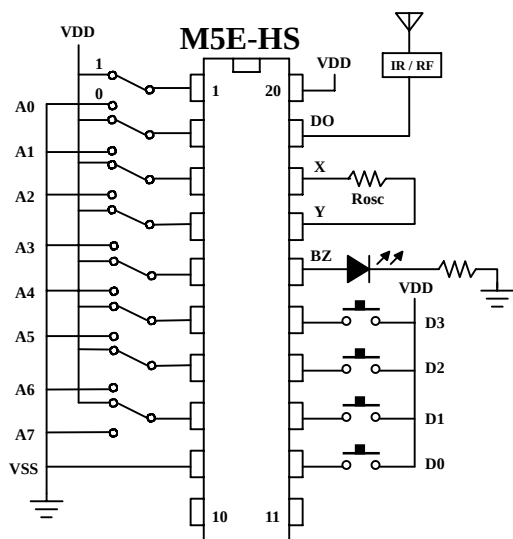
18 PIN



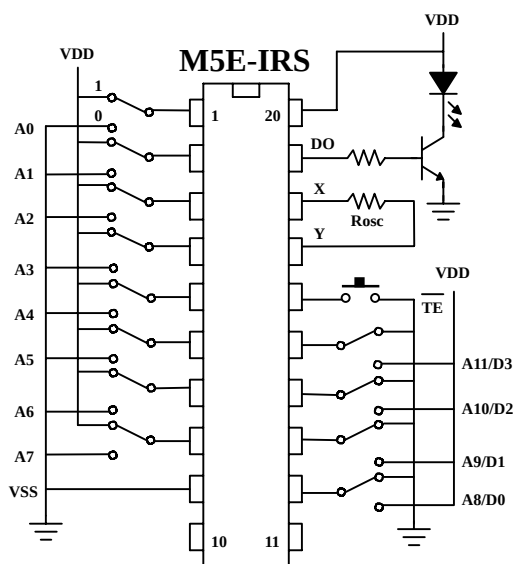
20 PIN



直接发射 (VDD)



IR 内建发射





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APPLICATION DIAGRAM 参考电路图 (SOP PACKAGE)

