



EN/DECODER
<b>M3E</b>

## GENERAL DESCRIPTION 功能敘述

The M3E is a CMOS ASIC decoder. It will en-code 12 parallel input and serially transmit them to the output when  $\overline{TE}$  depressed. These address inputs are 3 states i.e. LOW( 0 )、OPEN( X )、HIGH( 1 ).

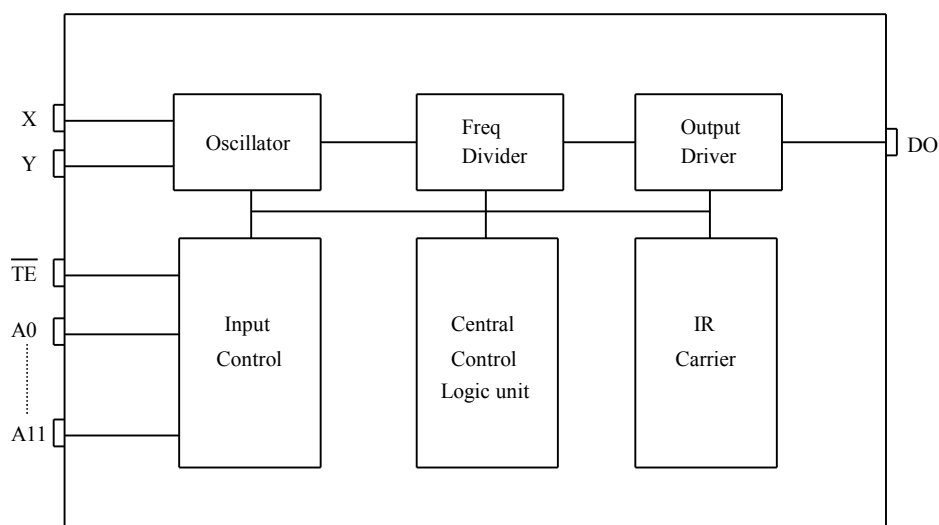
## FEATURES 產品特長

- Same Rosc matched to the DECODER M3D / DA / F
- Built-in IR carrier : suffix-IR.
- $3^{12} = 531,411$  codes, "0"、"X"、"1" Tri-states.
- 4 cycles transmission each time.
- Direct data transmit type : ( Elimination  $\overline{TE}$  and diodes )
  - M3E-H : switch to VDD.
  - M3E-L : switch to VSS.

## APPLICATIONS 產品應用

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

## BLOCK DIAGRAM 功能方塊圖



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

( 以上電路及規格僅供參考,本公司得逕行修正 )



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### ABSOLUTE MAXIMUM RATING

(TA=25°C)

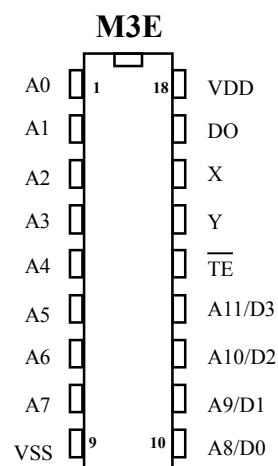
Parameter	Rating	Unit
Supply Voltage	-0.3 to 12	V
Input Voltage	-0.2~V <sub>DD</sub> +0.2	V
Operating Temperature	-20 to 70	°C
Storage Temperature	-50 to 125	°C

### ELECTRICAL CHARACTERISTICS

Characteristics	Sym.	Min.	Typ.	Max.	Unit	Conditions
Operating Voltage	V <sub>DD</sub>	2.4	—	12	V	
Operating Current	I <sub>OP</sub>	—	0.1	1	mA	No load
Quiescent Current	I <sub>SB</sub>	—	0.1	0.5	μA	
Output Drive Current	I <sub>O</sub>	—	2	—	mA	@V <sub>DS</sub> =1.2V
Input Voltage	V <sub>IH</sub>	V <sub>DD</sub> -0.2	V <sub>DD</sub>	V <sub>DD</sub>	V	
	V <sub>IL</sub>	V <sub>SS</sub>	V <sub>SS</sub>	V <sub>SS</sub> +0.2		
Oscillator Frequency	Fosc	—	76	—	KHz	External±30%
						Rosc=360K Ω @V <sub>DD</sub> =12V
						Rosc=430K Ω @V <sub>DD</sub> =4.5V

### PIN DESCRIPTION

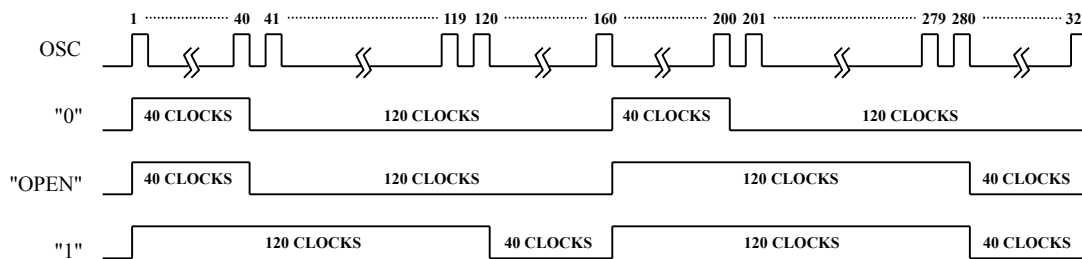
No.	M3E	Description
1~8	A0~A7	3 states address inputs
9	VSS	Negative power supply
10~13	A8~A11 / D0~D3	3 states address inputs / Data input
14	$\overline{\text{TE}}$	Transmit enable
15	Y	Oscillator output
16	X	Oscillator input
17	DO	Data output
18	VDD	Positive power supply



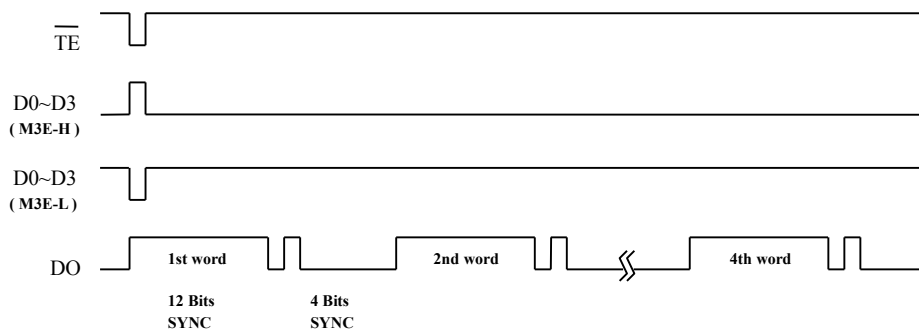


**TIMING WAVEFORM**

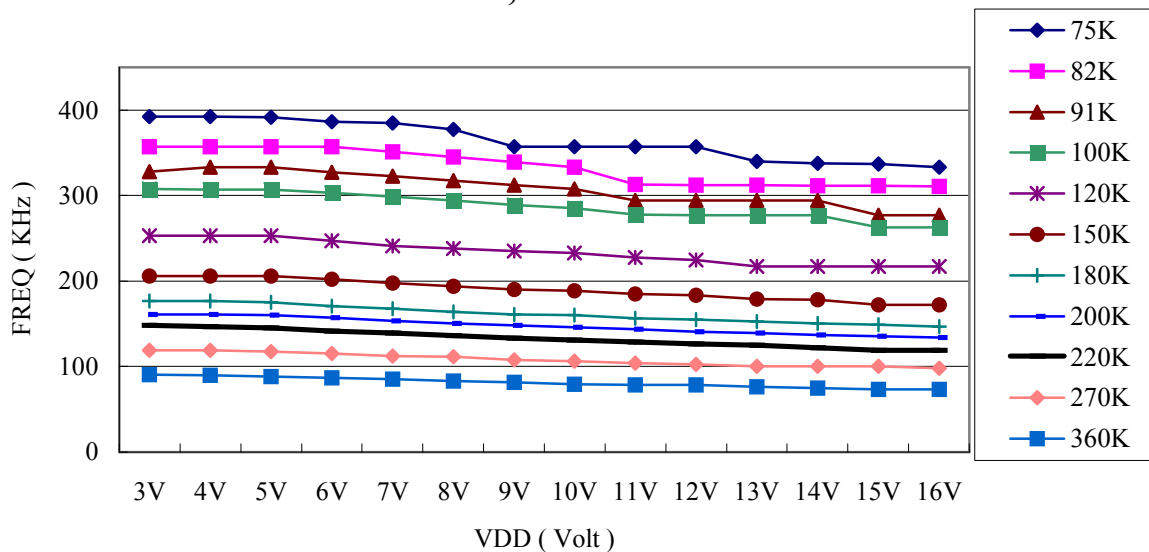
**(1) Bit Format**



**(2) TIMING DIAGRAM**



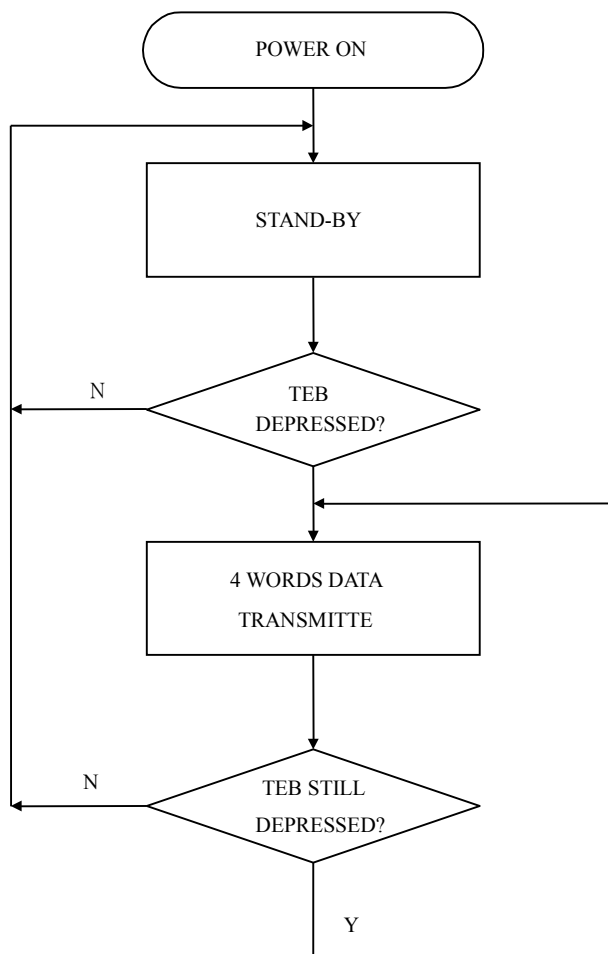
**M3E, F-V Curve**





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**OPERATING FLOWCHART**





**RECONNENDED OSCILLATOR PARAMETERS**

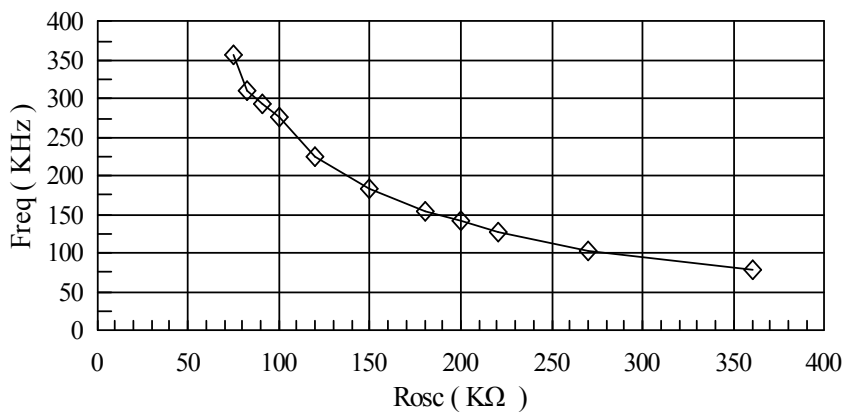
Rosc (KΩ)	M3E (KHz)
75	357
82	312
91	294
100	277
120	225
150	184
180	155
200	141
220	127
270	103
360	78

**DATA OUTPUT**

M3E (D0~D3)	M3D/F (D0~D3)
0 (VSS)	0 (VSS)
X (OPEN)	1 (VDD)
1 (VDD)	1 (VDD)
POWER ON	0 (VSS)

**Freq-Rosc Chart**

(@Vdd=12V)



M3E,

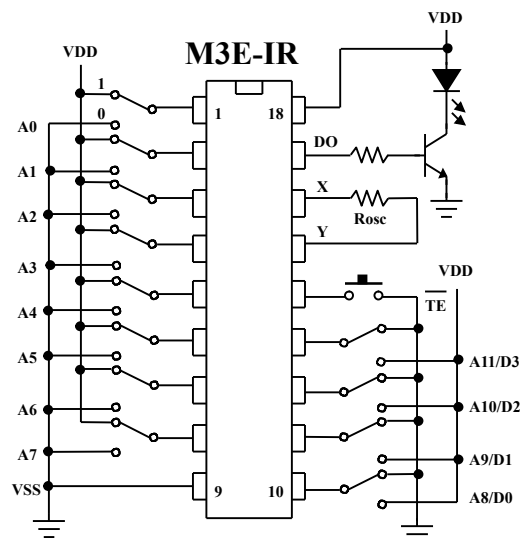
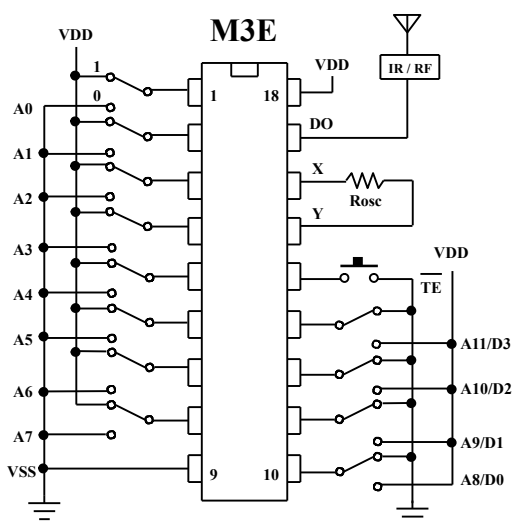
◇ M3E/D/F



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APPLICATION DIAGRAM 參考電路圖

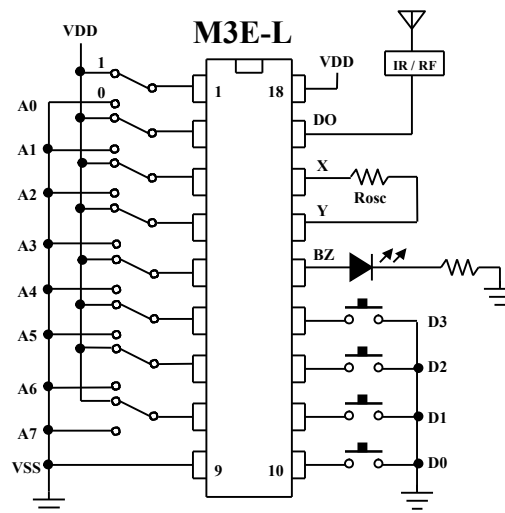
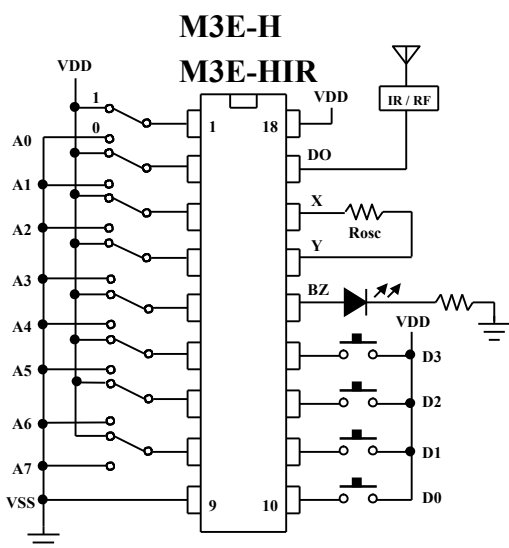
IR 內建發射



Rosc = 430KΩ @V<sub>DD</sub> = 4.5V

直接發射 (VDD)

直接發射 (VSS)



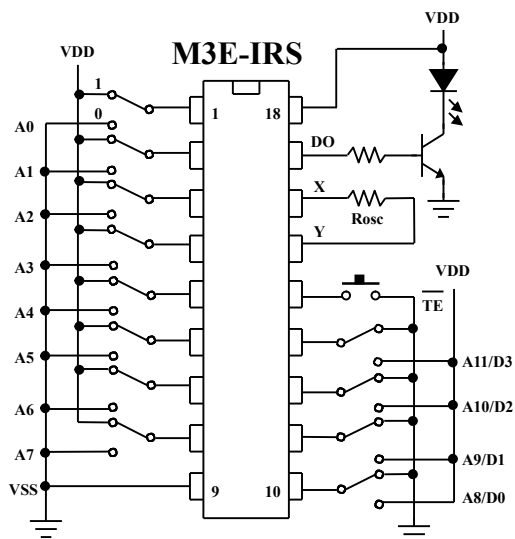
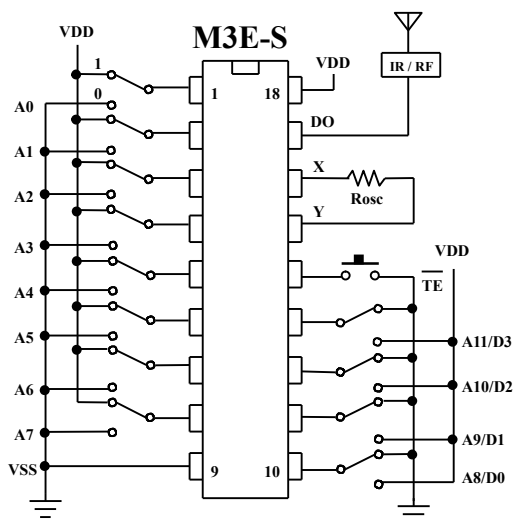
M3E-HIR : Rosc = 430KΩ @V<sub>DD</sub> = 4.5V



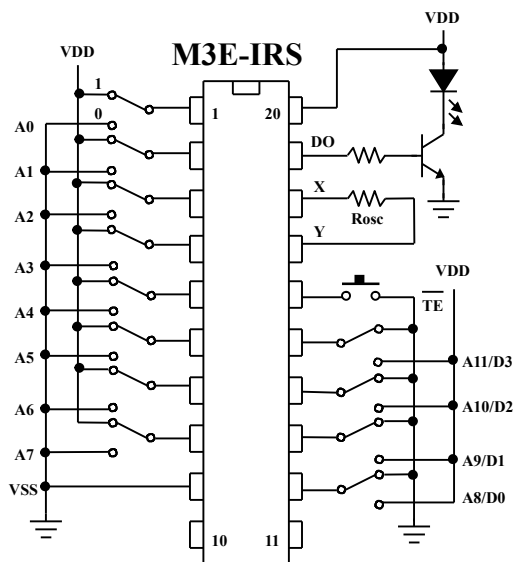
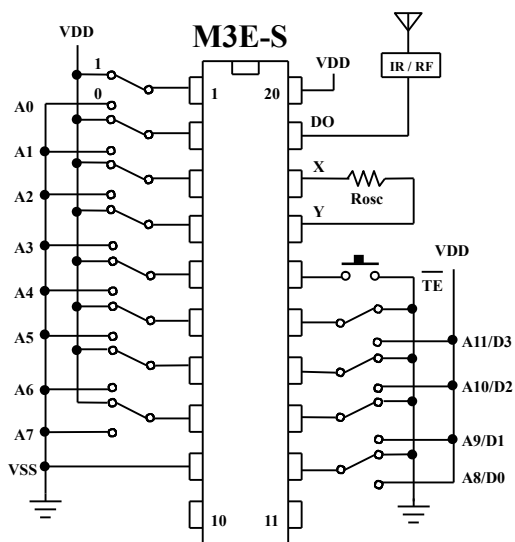
EN/DECODER
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APPLICATION DIAGRAM 參考電路圖 (SOP PACKAGE)

IR 內建發射



Rosc = 430KΩ @V<sub>DD</sub> = 4.5V



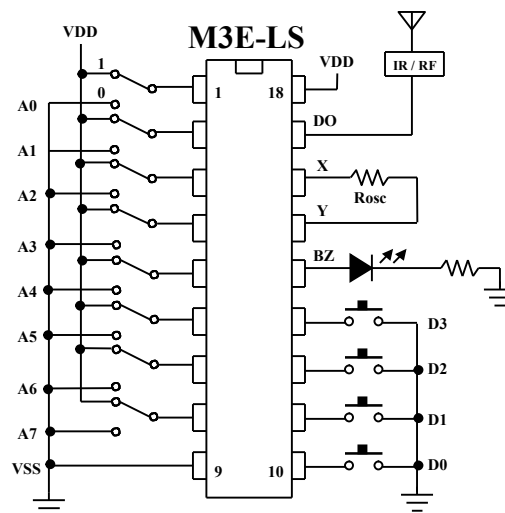
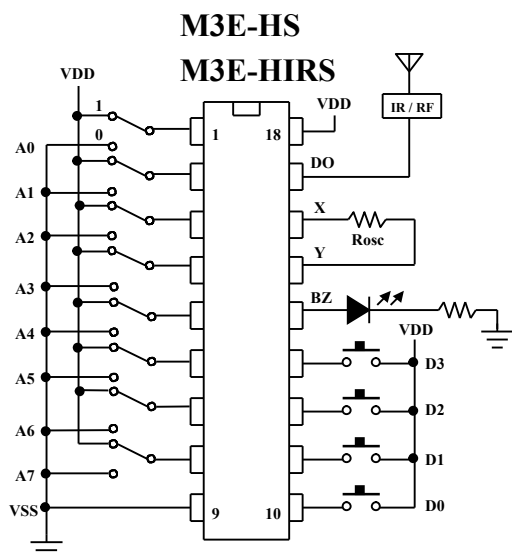
Rosc = 430KΩ @V<sub>DD</sub> = 4.5V



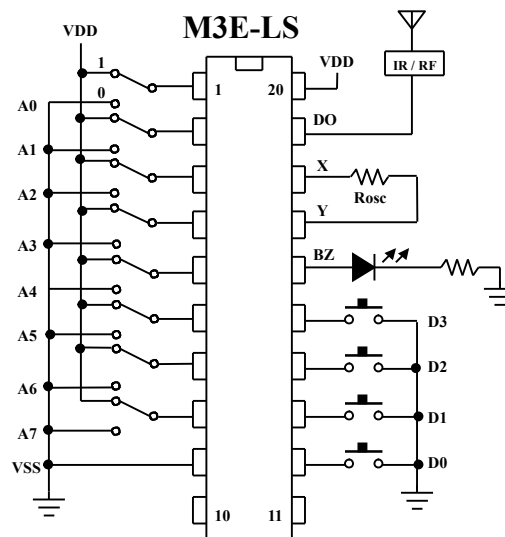
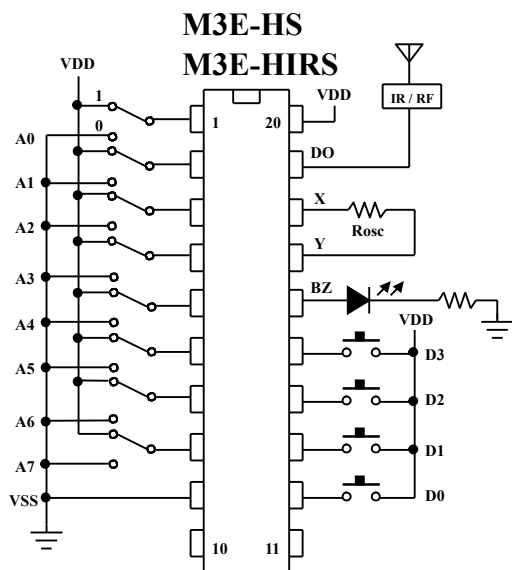
APPLICATION DIAGRAM 參考電路圖 (SOP PACKAGE)

直接發射 (VDD)

直接發射 (VSS)



M3E-HIRS :  $R_{osc} = 430K\Omega @ V_{DD} = 4.5V$



M3E-HIRS :  $R_{osc} = 430K\Omega @ V_{DD} = 4.5V$





PACKAGE OUTLINE

