

SUNSTAR
商斯达电子

红外遥控编解码

3 STATES ENCODER
3 態編碼 IC

EN/DECODER
M3E

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).

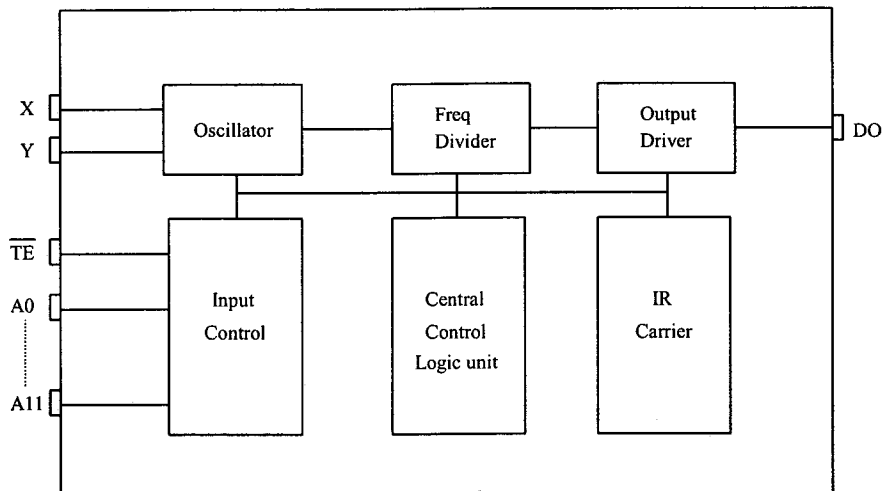
FEATURES 產品特長

- 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)

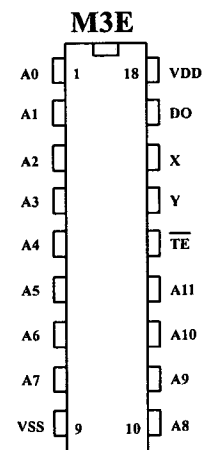
Parameter	Rating	Unit
Supply Voltage	-0.3 to 15	V
Input Voltage	-0.2~V _{DD} +0.2	V
Operating Temperature	-20 to 75	°C
Storage Temperature	-50 to 125	°C

ELECTRICAL CHARACTERISTICS

Characteristics	Sym.	Min.	Typ.	Max.	Unit	Conditions
Operating Voltage	V _{DD}	2.4	—	15	V	
Quiescent Current	I _{SB}	—	0.1	1	μA	
Operating Current	I _{OP}	—	0.1	0.5	mA	No load
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%

PIN DESCRIPTION

No.	M3F	Description
1~8	A0~A7	3 states address inputs
9	VSS	Negative power supply
10~13	A8~A11	3 states address inputs
14	\overline{TE}	Transmit enable
15	Y	Oscillator output
16	X	Oscillator input
17	DO	Data output
18	VDD	Positive power supply



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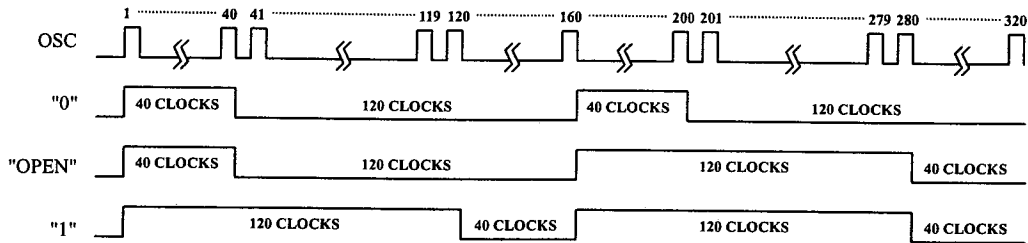
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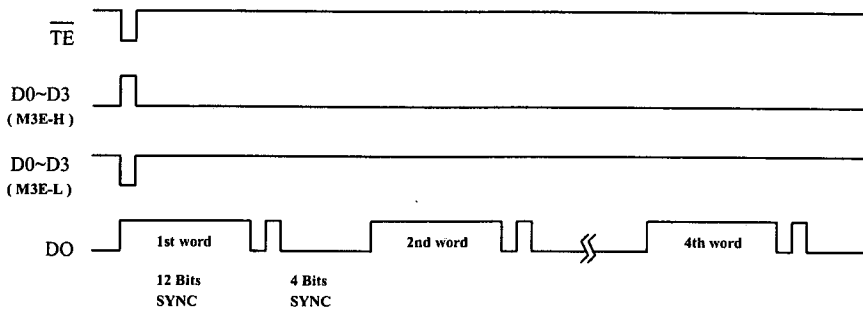
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TIMING WAVEFORM

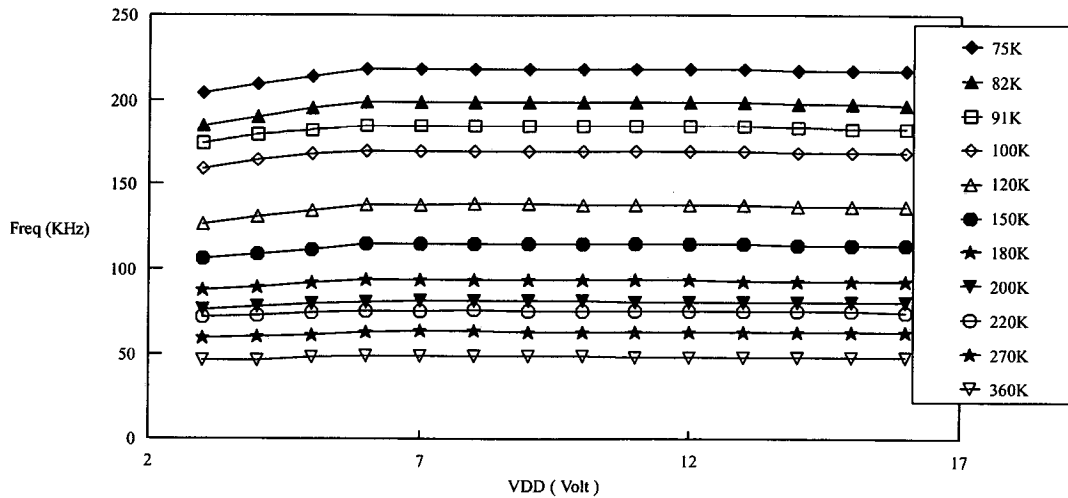
(1) Bit format



(2) TIMING DIAGRAM



M3E F-V curve



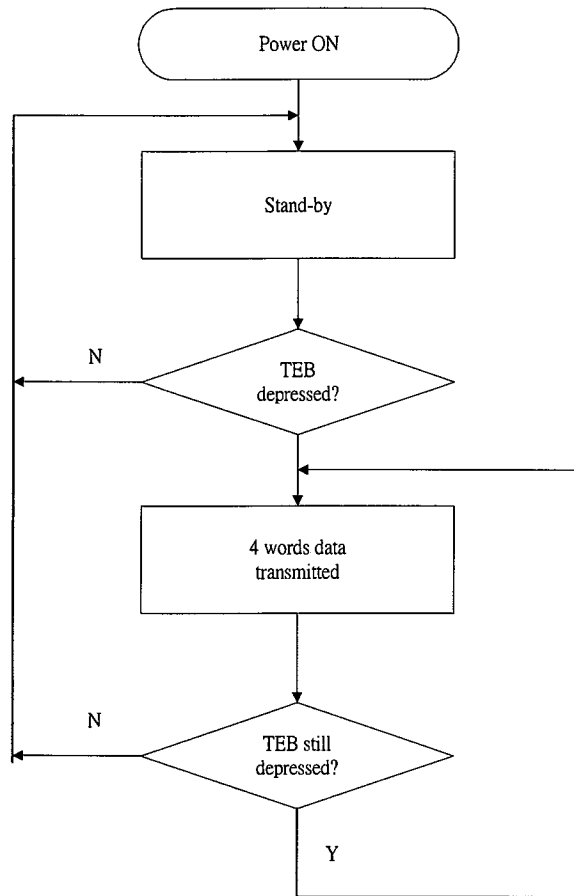
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OPERATING FLOWCHART



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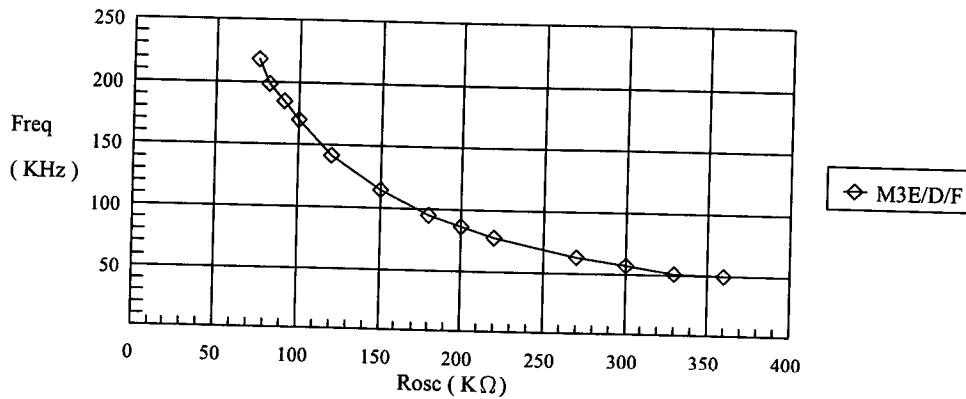
RECOMMENDED OSCILLATOR PARAMETERS

Rosc (KΩ)	M3E/D/F (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

M3E (D0~D3)	M3DA/F (D0~D3)
0 (VSS)	0 (VSS)
X (OPEN)	1 (VDD)
1 (VDD)	1 (VDD)
POWER ON	0 (VSS)

Freq-Rosc Chart
(@Vdd=12V)



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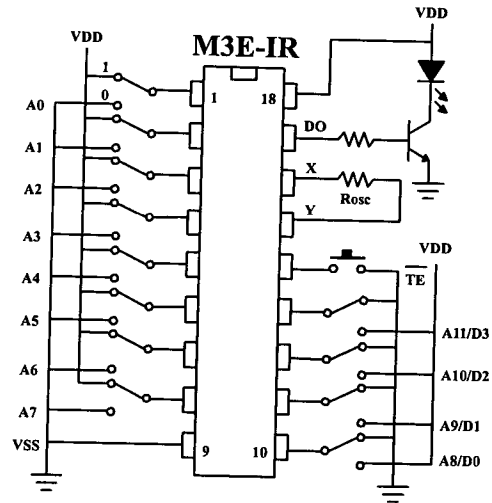
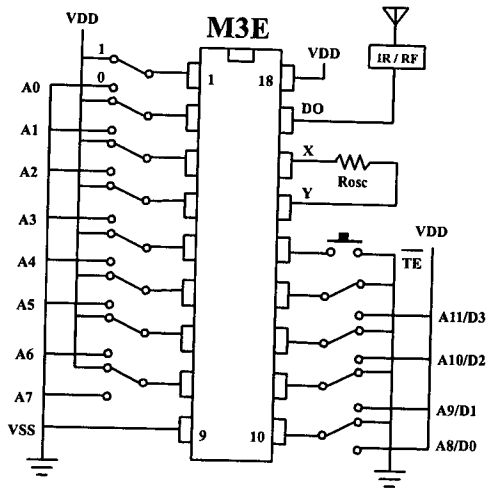
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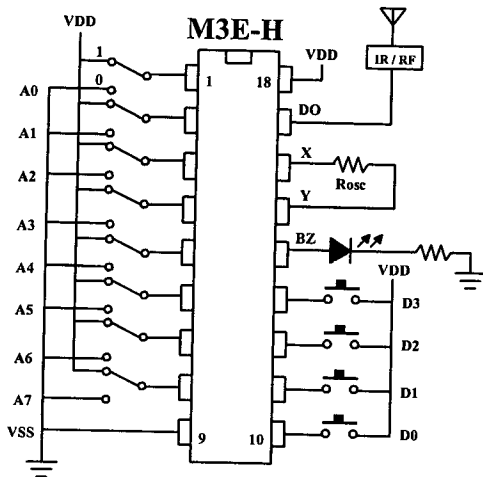
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APPLICATION DIAGRAM 參考電路圖

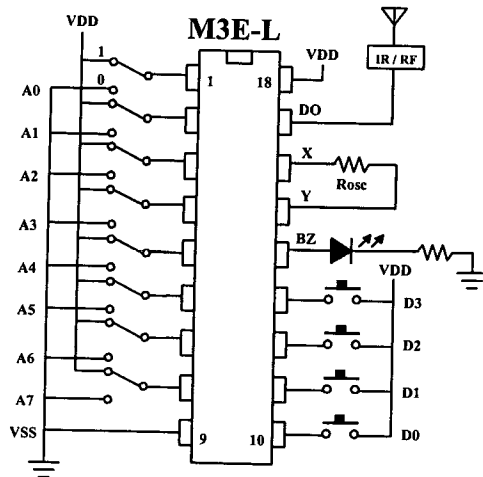
IR 內建發射



直接發射 (VDD)



直接發射 (VSS)



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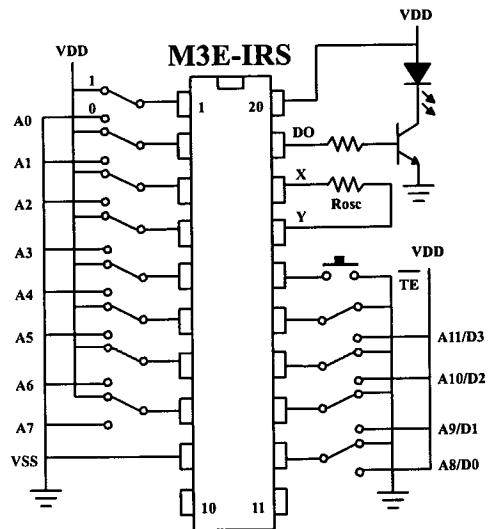
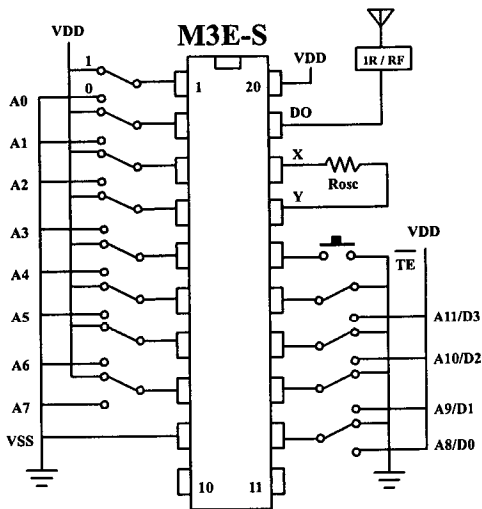
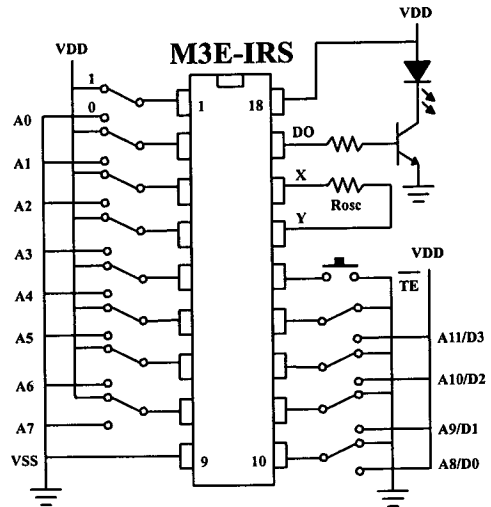
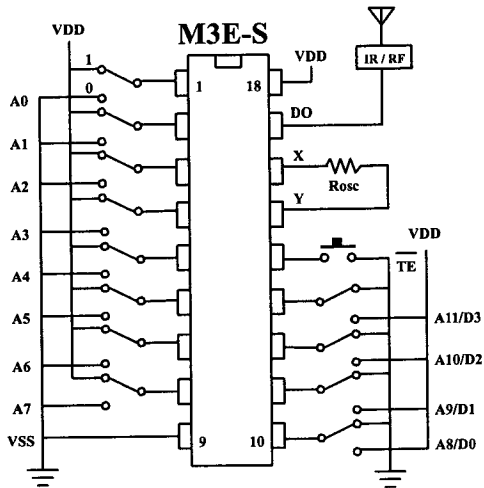
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APPLICATION DIAGRAM 參考電路圖 (SOP PACKAGE)

IR 內建發射



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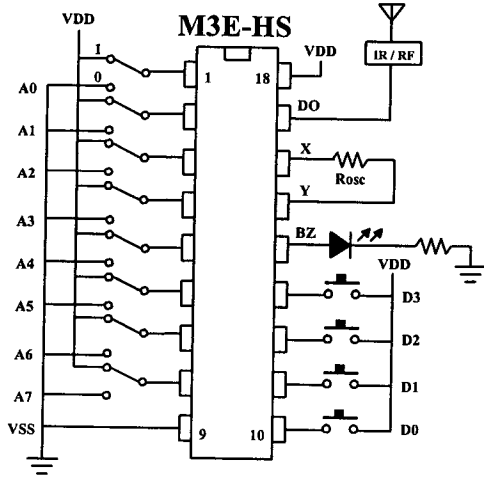
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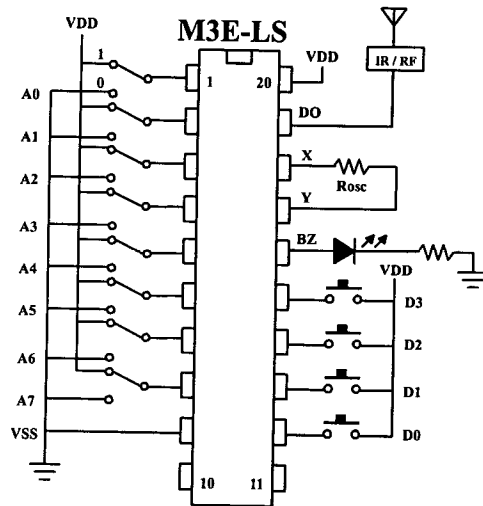
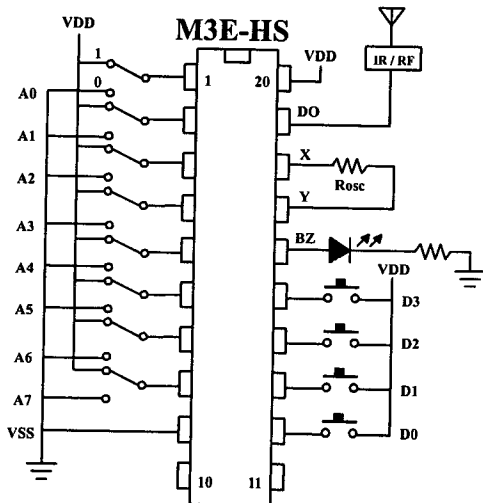
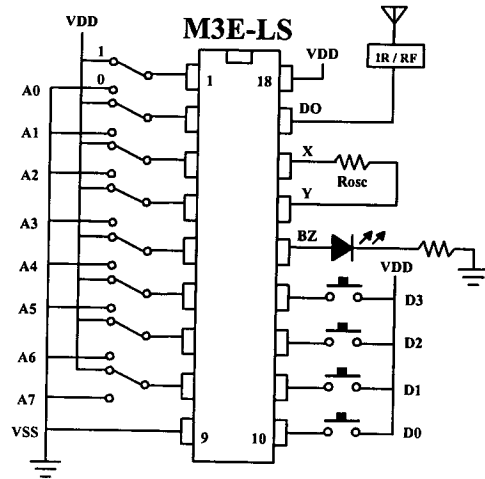
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APPLICATION DIAGRAM 參考電路圖 (SOP PACKAGE)

直接發射 (VDD)



直接發射 (VSS)



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