



3 STATES ENCODER

3 態 編 碼 IC

GENERAL DESCRIPTION 功能敘述

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{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{TE} depressed.

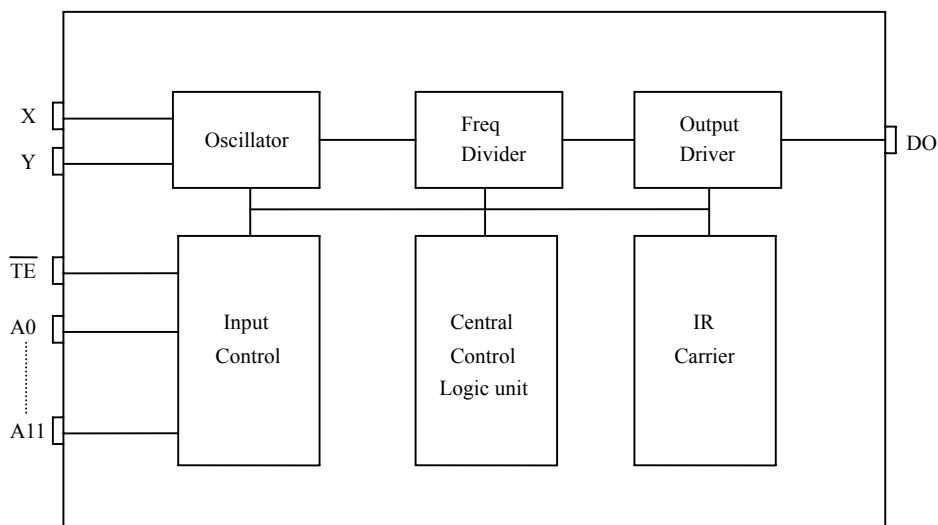
FEATURES 產品特長

- Same Rose 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 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 70	°C
Storage Temperature	-50 to 125	°C

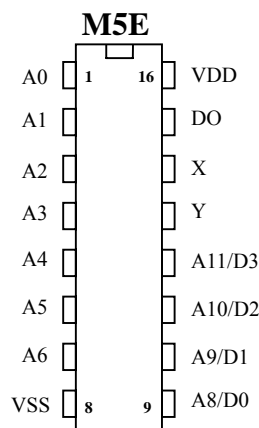
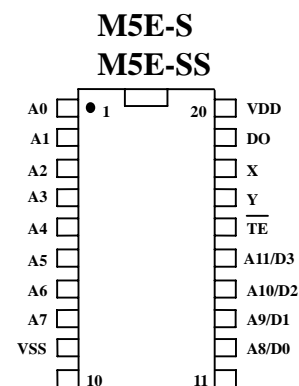
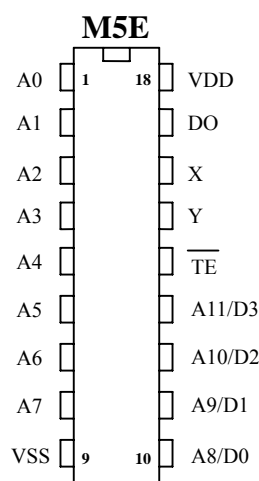
ELECTRICAL CHARACTERISTICS

Characteristics	Sym.	Min.	Typ.	Max.	Unit	Conditions
Operating Voltage	V _{DD}	2.4	—	15	V	
Operating Current	I _{OP}	—	0.1	1	μA	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%, Rosc=360KΩ

PIN DESCRIPTION

No.	Name	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{TE}	Transmit enable
15	Y	Oscillator output
16	X	Oscillator input
17	DO	Data output
18	VDD	Positive power supply

No.	Name	Description
1~7	A0~A6	3 states address inputs
8	VSS	Negative power supply
9~12	A8~A11 / D0~D3	3 states address inputs / Data input
13	Y	Oscillator output
14	X	Oscillator input
15	DO	Data output
16	VDD	Positive power supply





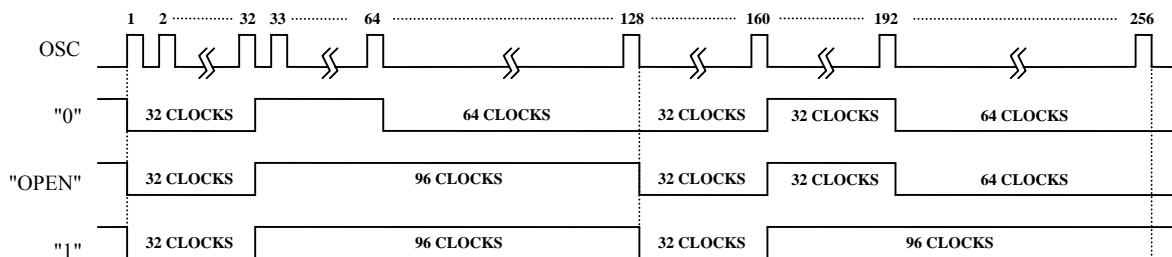
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M5E

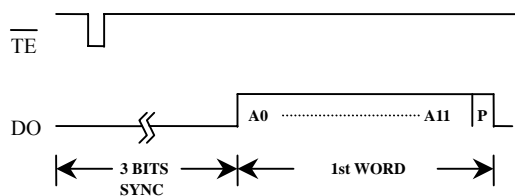
TIMING WAVEFORM

(1) BIT FORMAT

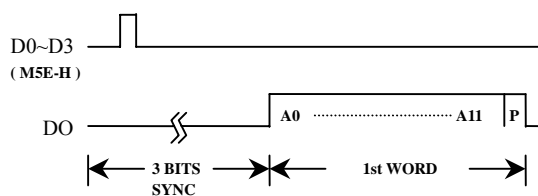


(2) TIMING DIAGRAM

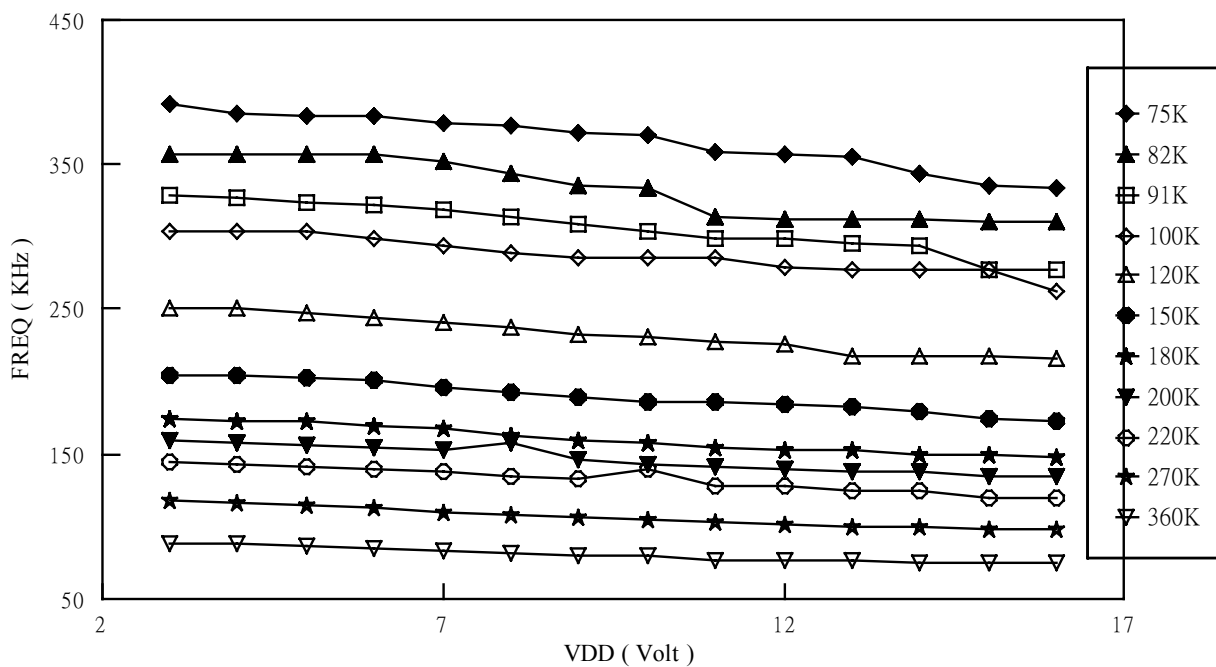
A.



B.



M5E F-V curve

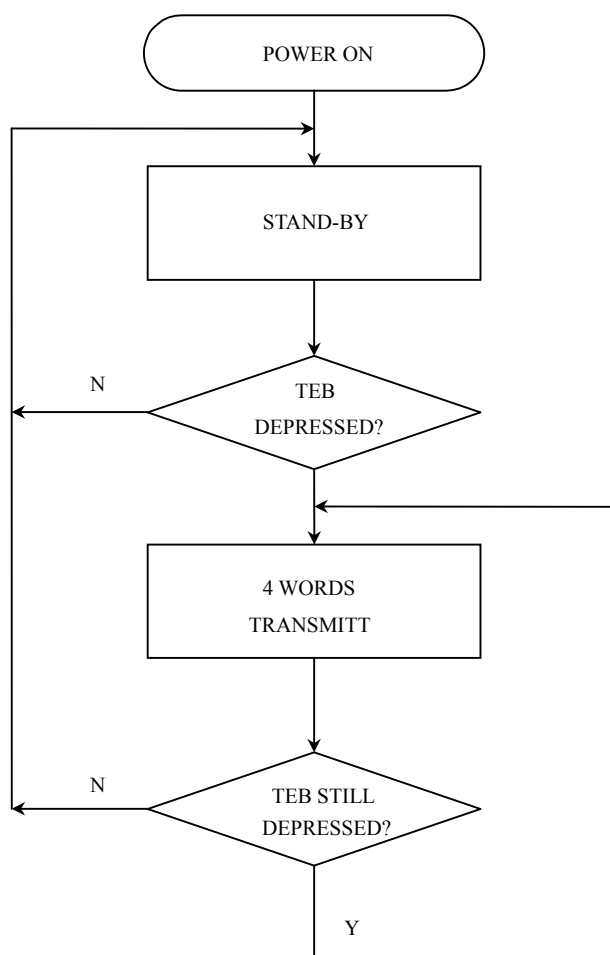




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OPERATING FLOWCHART





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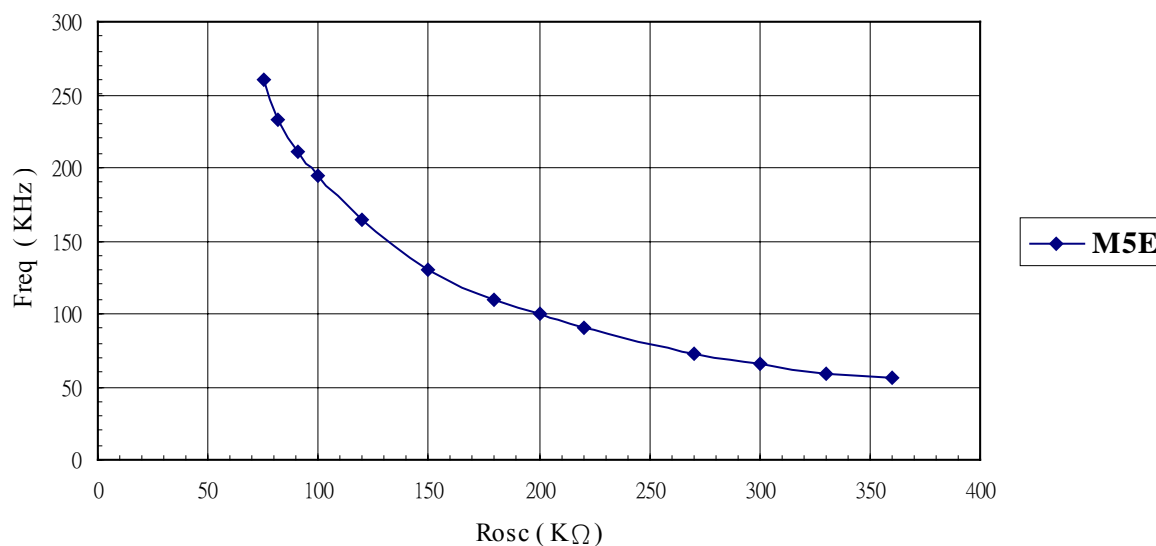
RECONNENDED OSCILLATOR PARAMETERS

Rosc (KΩ)	M5E (KHz)
75	260
82	233
91	211
100	194
120	165
150	130
180	109
200	100
220	90
270	73
300	66
330	59
360	56

DATA OUTPUT

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

Freq-Rosc Chart
(VDD@12V)



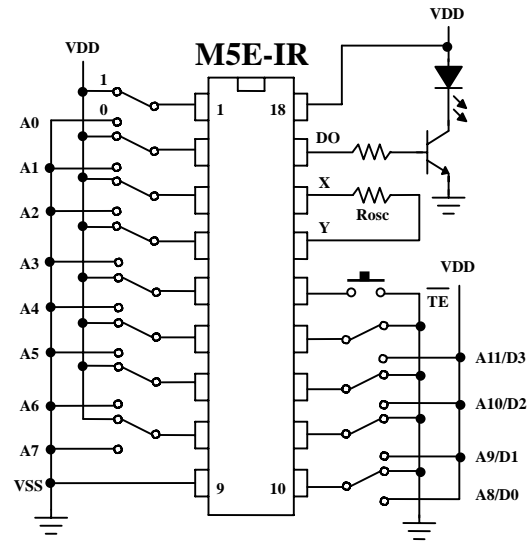
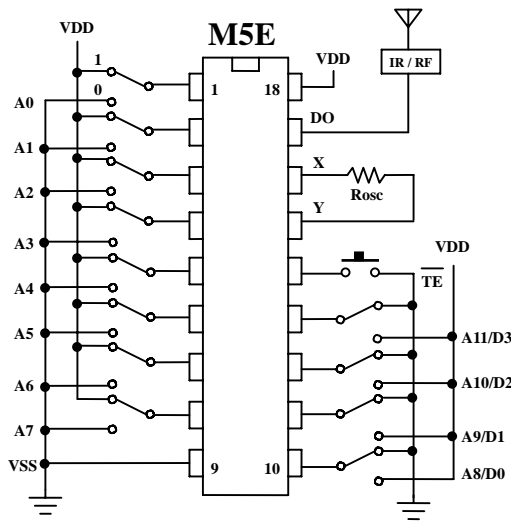


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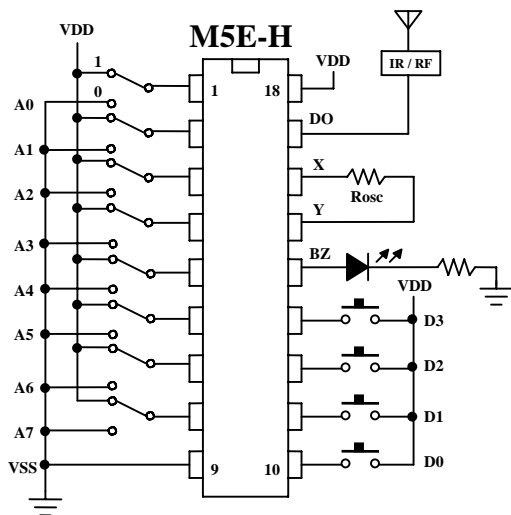
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APPLICATION DIAGRAM 參考電路圖

IR 內建發射



直接發射 (VDD)



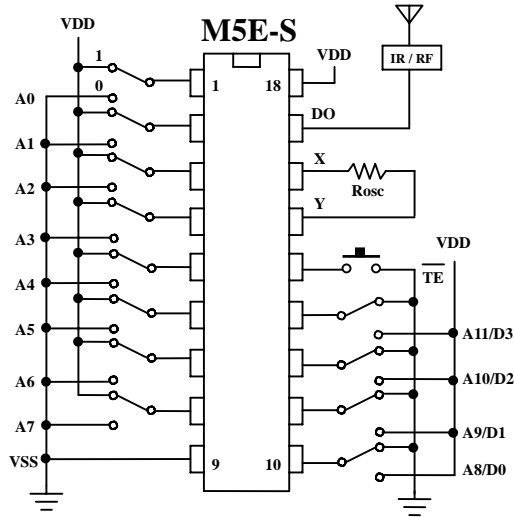


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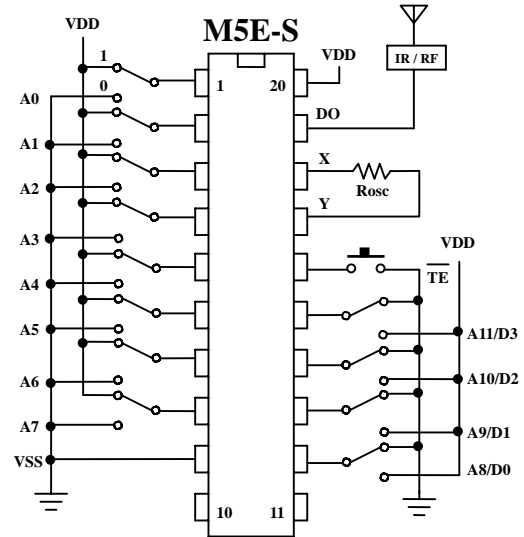
3 態 編 碼 IC

APPLICATION DIAGRAM 參考電路圖 (SOP PACKAGE)

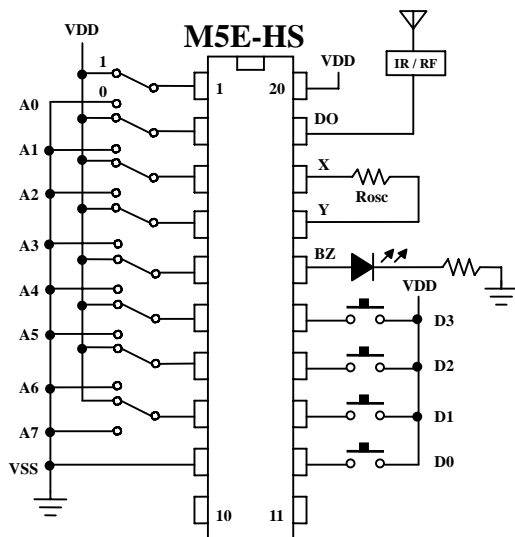
18 PIN



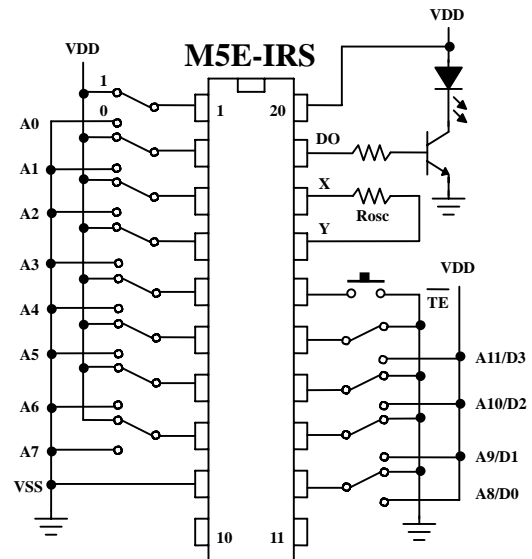
20 PIN



直接發射 (VDD)



IR 內建發射



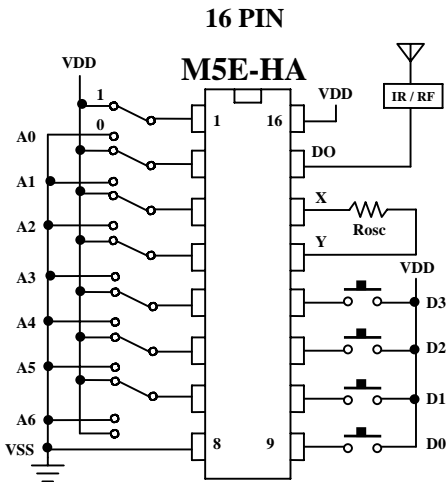


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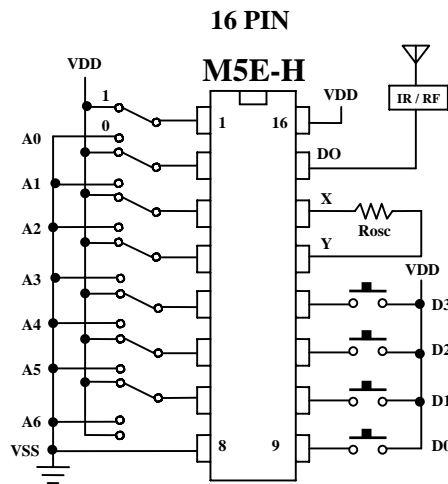
APPLICATION DIAGRAM 參考電路圖 (SOP PACKAGE)

直接發射 (VDD)



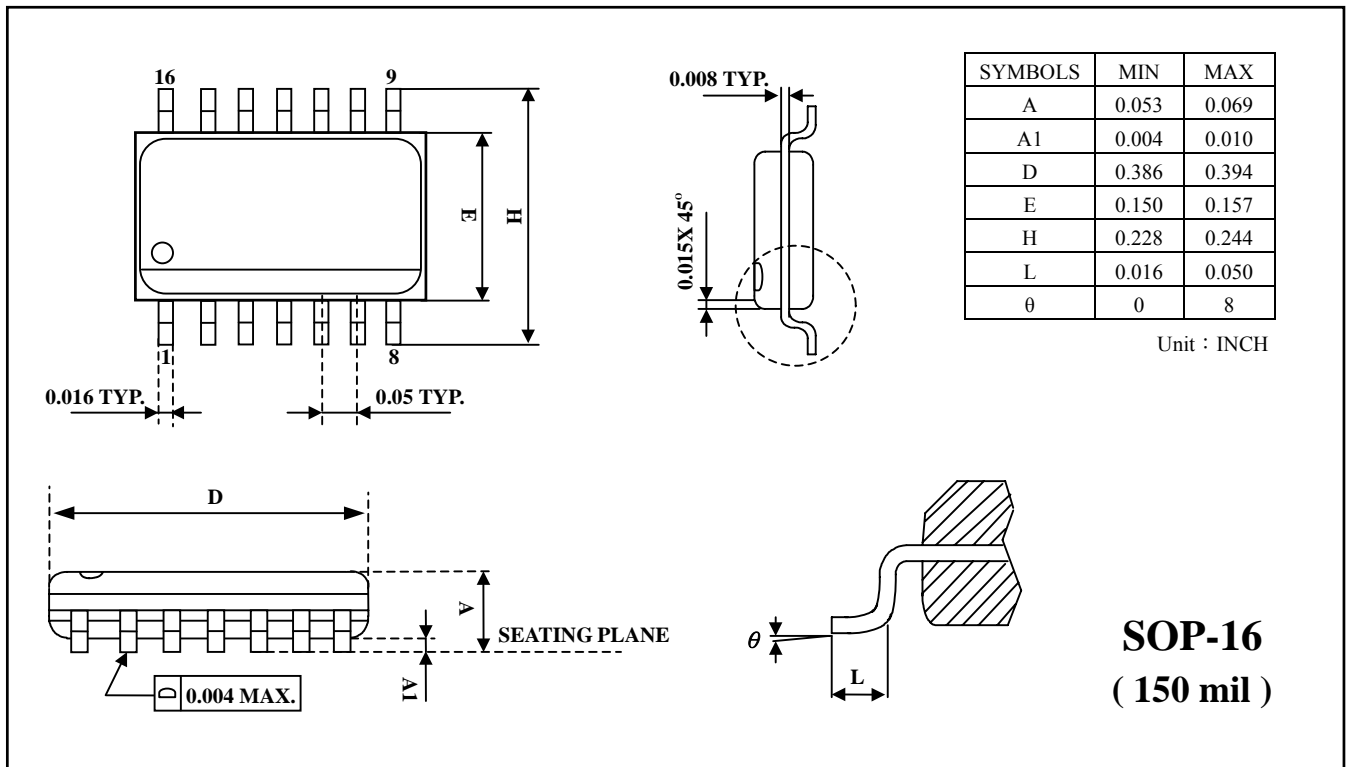
* Internal code A7 = "0"

直接發射 (VDD)



* Internal code A7 = "X"

PACKAGE OUTLINE



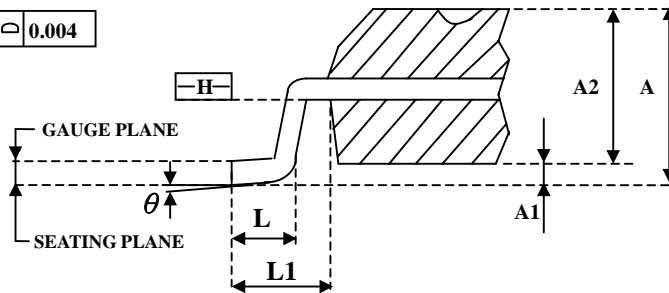
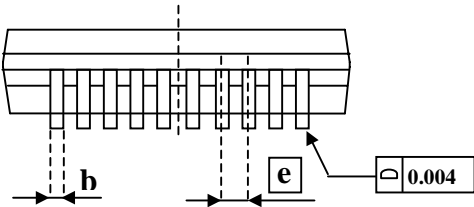
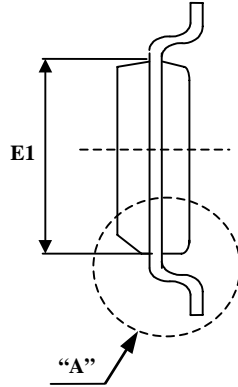
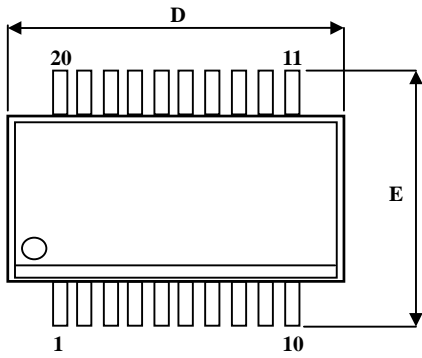


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EN/DECODER

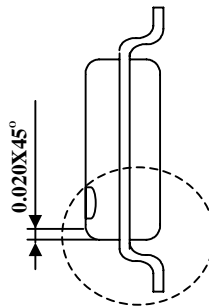
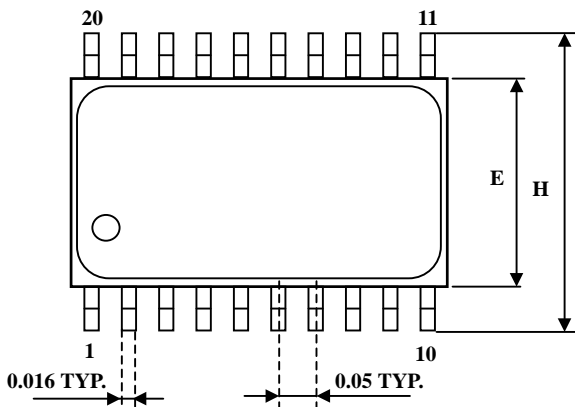
M5E



SYMBOLS	MIN	NOM.	MAX
A	0.053	0.064	0.069
A1	0.004	0.006	0.010
A2	—	—	0.059
b	0.008	—	0.012
C	0.007	—	0.010
D	0.337	0.341	0.344
E	0.228	0.236	0.244
E1	0.150	0.154	0.157
\square e	0.025 BASIC		
L	0.016	0.025	0.050
L1	0.041 BASIC		
θ°	0	—	8°

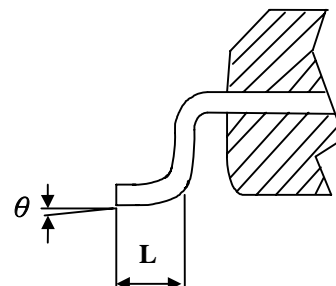
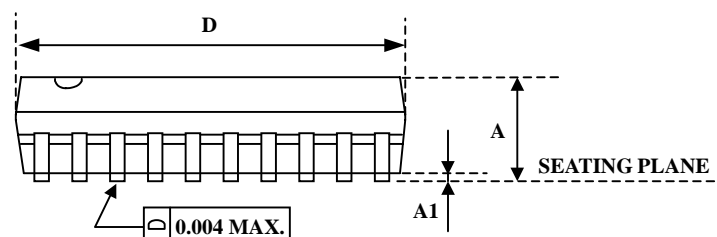
UNIT : INCH

SSOP-20
(150 mil)



SYMBOLS	MIN	MAX
A	0.093	0.104
A1	0.004	0.012
D	0.496	0.508
E	0.291	0.299
H	0.394	0.419
L	0.016	0.050
θ	0	8

UNIT : INCH



SOP-20
(300 mil)



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