KreativeKorp
Universal BCD to 7-Segment Decoder

KKHWC0005M1508
(ROM-Based)
(TOP VIEW)

```
              VPP  ☐ 1   28 ☐  VCC
    /ABI   V2  ☐ 2   27 ☐  ASCII
          /AL  ☐ 3   26 ☐  V1      FS
    D6      B  ☐ 4   25 ☐  X6
    D5      C  ☐ 5   24 ☐  X9
    D4    /LT  ☐ 6   23 ☐  V0      LC
    D3    /BI  ☐ 7   22 ☐  /OE
    D2   /RBI  ☐ 8   21 ☐  X7
    D1      D  ☐ 9   20 ☐  /CE
    D0      A  ☐ 10  19 ☐  f
   /LTR  /RBO  ☐ 11  18 ☐  g
           e  ☐ 12  17 ☐  a
           d  ☐ 13  16 ☐  b
          GND  ☐ 14  15 ☐  c
```


0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 : 0 1 2 3 4 5 6 7 8 9

	1010	1011	1100	1101	1110	1111
V0=0 V1=0 V2=0						
V0=1 V1=0 V2=0	c	⊐	4	5	t	
V0=0 V1=1 V2=0	o	o	-	-	_	
V0=1 V1=1 V2=0	0	1	2	3	4	5

	1010	1011	1100	1101	1110	1111
V0=0 V1=0 V2=1	-	=	≡	=	-	
V0=1 V1=0 V2=1	-	L	C	r	E	
V0=0 V1=1 V2=1	-	E	H	L	P	
V0=1 V1=1 V2=1	A	b	C	d	E	F
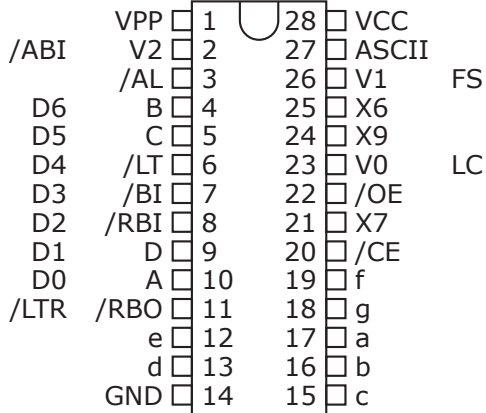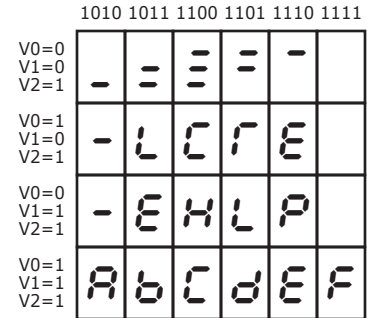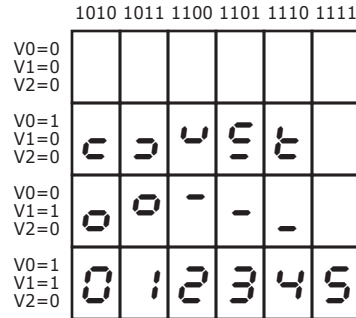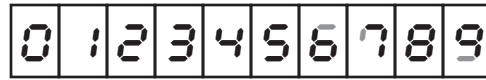
SIGNAL	DESCRIPTION
/AL	If HIGH, outputs will be HIGH when lit. If LOW, outputs will be LOW when lit.
ASCII	If HIGH, inputs and outputs function in ASCII mode (as on next page). If LOW, inputs and outputs function in BCD mode (as on this page).
/BI	Blanking input. When LOW, no segments will be lit regardless of other inputs.
/LT	Lamp test. When /BI is HIGH and /LT is low, all segments will be lit.
/RBI	Ripple blanking input. When A, B, C, D, and /RBI are LOW, no segments will be lit.
V0, V1, V2	Variation selector for values ≥10. (See diagram.)
X6	When HIGH, segment a will be lit on the digit 6.
X7	When HIGH, segment f will be lit on the digit 7.
X9	When HIGH, segment d will be lit on the digit 9.
A	Ones value (least significant bit) of BCD input.
B	Twos value of BCD input.
C	Fours value of BCD input.
D	Eights value (most significant bit) of BCD input.
a, b, c, d, e, f, g	Output for seven-segment display segments.
/RBO	Ripple blanking output. HIGH when BCD input is nonzero or /RBI is HIGH.

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FS=0:

	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
D6=0 D5=1 D4=0		┘	''	//	S	',	┣	◞	C	コ	°	┤	↵	-	_	◞
D6=0 D5=1 D4=1	0	1	2	3	4	5	6	7	8	9	⊏	コ	┤	=	┣	?
D6=1 D5=0 D4=0	ヨ	A	b	C	d	E	F	G	H	1	J	A	L	⊓	⊓	0
D6=1 D5=0 D4=1	P	9	┌	S	7	U	Y	8	≡	Y	2	C	ч	コ	⌐	_
D6=1 D5=1 D4=0	┗	ƌ	b	c	d	ℓ	F	9	h	⌐	J	A	1	⊓	n	o
D6=1 D5=1 D4=1	P	9	⌐	S	┣	⊔	J	8	=	Y	2	┤	1	┣	⁻	

FS=1:

	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
D6=0 D5=1 D4=0		┘	''	//	',	'.	┣	◞	c	⊐	°	┤	↵	-	,	◞
D6=0 D5=1 D4=1	0	1	2	3	4	5	6	7	8	9	⊏	⊐	c	=	⊐	?
D6=1 D5=0 D4=0	ヨ	A	b	C	d	E	F	G	H	⌐	J	A	L	⊓	⊓	9
D6=1 D5=0 D4=1	P	9	┌	⊏	7	U	Y	8	≡	Y	2	⊏	ч	⊐	⌐	_
D6=1 D5=1 D4=0	┗	⌐	b	c	d	⌐	⌐	9	h	⌐	J	A	⊔	⊓	n	o
D6=1 D5=1 D4=1	P	9	⌐	⊏	┣	⊔	J	8	=	Y	2	⊐	⊊	⊐	⁻	

SIGNAL	DESCRIPTION
/ABI	ASCII blanking input. When LOW, no segments will be lit.
FS	Font select. (See diagram.)
LC	If LOW, lowercase letters will appear as uppercase.
D6	Most significant bit of ASCII code.
...	...
D0	Least significant bit of ASCII code.
/LTR	LOW when the corresponding ASCII character is a letter (A...Z or a...z).

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