

GT30L16U2W 多国文字字库芯片

规格书 DATASHEET

- 字符集: Unicode V3.0
- 多国文字: 拉丁文、西里尔文、阿拉伯文等
- 字号: 12x12 点阵、16x16 点阵
- 排置方式: 横置横排
- 总线接口: SPI 串行总线
- 封装类型: SOP8-B

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1 概述

GT30L16U2W是一款内含12x12点阵和16x16点阵的汉字库芯片，支持Unicode V3.0汉字（含有国家信标委GB13000合法授权）、ASCII字符及150国文字。排列格式为横置横排。用户通过字符内码，利用本手册提供的方法计算出该字符点阵在芯片中的地址，可从该地址连续读出字符点阵信息。

1.1 芯片特点

- 数据总线： SPI 串行总线接口
- 点阵排列方式： 字节横置横排
- 访问速度： SPI 时钟频率： 80MHz(max.)
- 工作电压： 2.7V~3.6V
- 电流： 工作电流： 20mA
待机电流： 5uA
- 封装： SOP8-B
- 尺寸（SOP8-B）： 7.90mmX5.23mm
- 工作温度： -40℃~85℃ 存储温度： -55~125℃

1.2 芯片内容

分类	字库	字号	字符数	字体	排列方式	备注
ASCII 字符集	ASCII	5x7	96	标准	W-横置横排	
	ASCII	7x8	96	标准	W-横置横排	
	ASCII	6x12	96	标准	W-横置横排	
	ASCII	8x16	96	标准	W-横置横排	
	ASCII	12 点阵不等宽	96	Arial (方头)	W-横置横排	
	ASCII	12 点阵不等宽	96	Times new Roman (白正)	W-横置横排	
	ASCII	16 点阵不等宽	96	Arial (方头)	W-横置横排	
	ASCII	16 点阵不等宽	96	Times new Roman (白正)	W-横置横排	
UNICODE 汉字字符集	UNICODE 汉字	12x12	27484	宋体	W-横置横排	
		16x16	27484	宋体	W-横置横排	
	UNICODE 字符	12x12	985	宋体	W-横置横排	
		16x16	985	宋体	W-横置横排	
UNICODE 多国字符	拉丁文系	8x16	376	标准	W-横置横排	
	希腊文系	8x16	96	标准	W-横置横排	
	西里尔文系	8x16	250	标准	W-横置横排	
	拉丁文系	12 点阵不等宽	555	标准	W-横置横排	
	希腊文系	12 点阵不等宽	555	标准	W-横置横排	
	西里尔文系	12 点阵不等宽	555	标准	W-横置横排	
	拉丁文系	16 点阵不等宽	555	标准	W-横置横排	
	希腊文系	16 点阵不等宽	555	标准	W-横置横排	
	西里尔文系	16 点阵不等宽	555	标准	W-横置横排	
	阿拉伯文系	12 点阵不等宽	840	标准	W-横置横排	
	阿拉伯文系	16 点阵不等宽	840	标准	W-横置横排	
	阿拉伯文系 变体字符	12 点阵不等宽	498	标准	W-横置横排	
	阿拉伯文系 变体字符	16 点阵不等宽	498	标准	W-横置横排	

1.3 字型样张

1.3.1 汉字字符

12x12 点阵 Unicode 汉字

<	<	用	汉	字	找	高	通	>	>
一	丁	弓	七	上	下	刀	万	丈	三
上	下	开	不	与	丐	丐	丑	刃	专
且	丕	世	出	丘	丙	业	丛	东	丝
丞	丢	北	两	丢	卵	两	严	並	丧



16x16 点阵 Unicode 汉字

<	<	用	汉	字	找	高	通	>	>
一	丁	弓	七	上	下	刀	万	丈	三
上	下	开	不	与	丐	丐	丑	刃	专

1.3.2 其它点阵字符

5x7 点阵 ASCII 标准字符

Low 4bit High 4bit	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2		!	"	#	\$	%	&	'	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{		}	~	

7x8 点阵 ASCII 标准字符

Low 4bit High 4bit	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2		!	"	#	\$	%	&	'	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{		}	~	

6x12 点阵 ASCII 标准字符

Low 4bit High 4bit	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2		!	"	#	\$	%	&	'	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{		}	~	

8x16 点阵 ASCII 标准字符

Low 4bit High 4bit	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2		!	"	#	\$	%	&	'	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{		}	~	

12 点阵不等宽 ASCII 白正(Times new Roman)

!"#\$%&'()*+,-./01234567
89:;<=>?@ABCDEFGHI
JKLMNOPQRSTUVWXYZ

12 点阵不等宽 ASCII 方头 (Arial)

!"#\$%&'()*+,-./0123456
789:;<=>?@ABCDEFGH
IJKLMNOPQRSTUVWXYZ

16 点阵不等宽 ASCII 白正(Times new Roman)

!"#\$%&'()*+,-./012
3456789:;<=>?@A

16 点阵不等宽 ASCII 方头 (Arial)

!"#\$%&'()*+,-./012
3456789:;<=> ?@

8x16 点阵拉丁文

ÊËÏÎÏÎÎÐÑÓÔÕÖ×Ø
ØÙÚÛÜÝÞßàáâãäåæ
èéêëìíîïðñòóôõ

8x16 点阵希腊文

ΤΩΤΑΒΓΔΕΖΗΘάέήιϋ
ΘΙΚΛΜΝΞΟΠΡζηθικ
ςτυφχψωϊϋπρςστ

8x16 点阵西里尔文

ДЕЖЗИЙКЛМНШЩЪЫЬ
ОПРСТУФХЦЧВГДЕЖ
ШЩЪЫЬЭЮЯабмнор

16 点阵不等宽阿拉伯文

مكان جفتلا التليدية

2 操作指令

2.1 Instruction Parameter(指令参数)

Instruction	Description	Instruction Code(One-Byte)		Address Bytes	Dummy Bytes	Data Bytes
READ	Read Data Bytes	0000 0011	03 h	3	—	1 to ∞
FAST_READ	Read Data Bytes at Higher Speed	0000 1011	0B h	3	1	1 to ∞

所有对本芯片 SPI 接口的操作只有 2 个，那就是 Read Data Bytes (READ “一般读取”)和 Read Data Bytes at Higher Speed (FAST_READ “快速读取点阵数据”)。

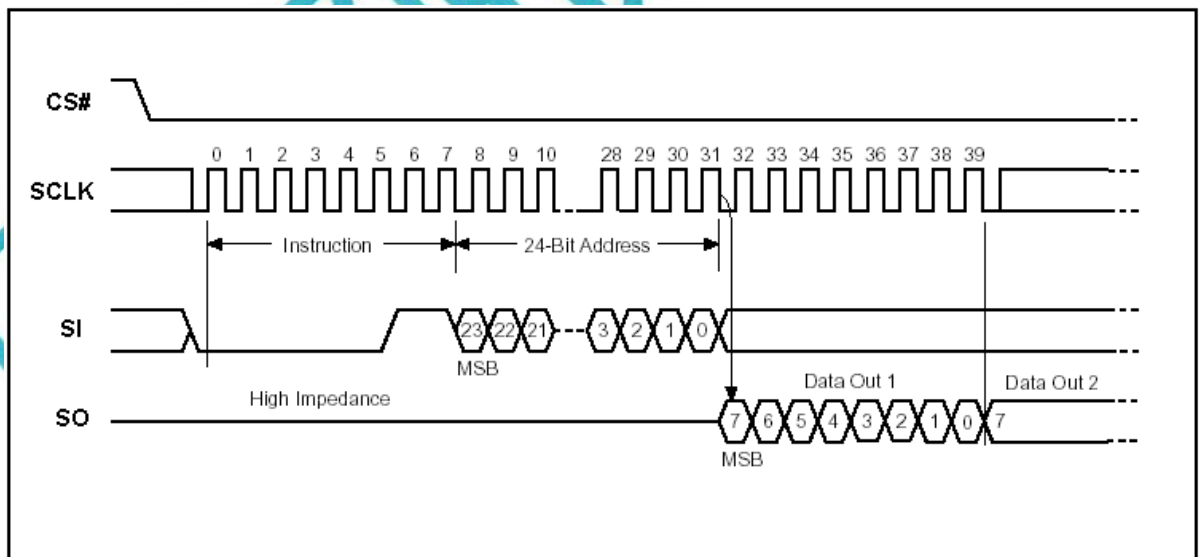
2.2 Read Data Bytes（一般读取）

Read Data Bytes 需要用指令码来执行每一次操作。READ 指令的时序如下(图):

- 首先把片选信号 (CS#) 变为低，紧跟着的是 1 个字节的命令字 (03 h) 和 3 个字节的地址和通过串行数据输入引脚 (SI) 移位输入，每一位在串行时钟 (SCLK) 上升沿被锁存。
- 然后该地址的字节数据通过串行数据输出引脚 (SO) 移位输出，每一位在串行时钟 (SCLK) 下降沿被移出。
- 读取字节数据后，则把片选信号 (CS#) 变为高，结束本次操作。

如果片选信号 (CS#) 继续保持为底，则下一个地址的字节数据继续通过串行数据输出引脚 (SO) 移位输出。

图：Read Data Bytes (READ) Instruction Sequence and Data-out sequence



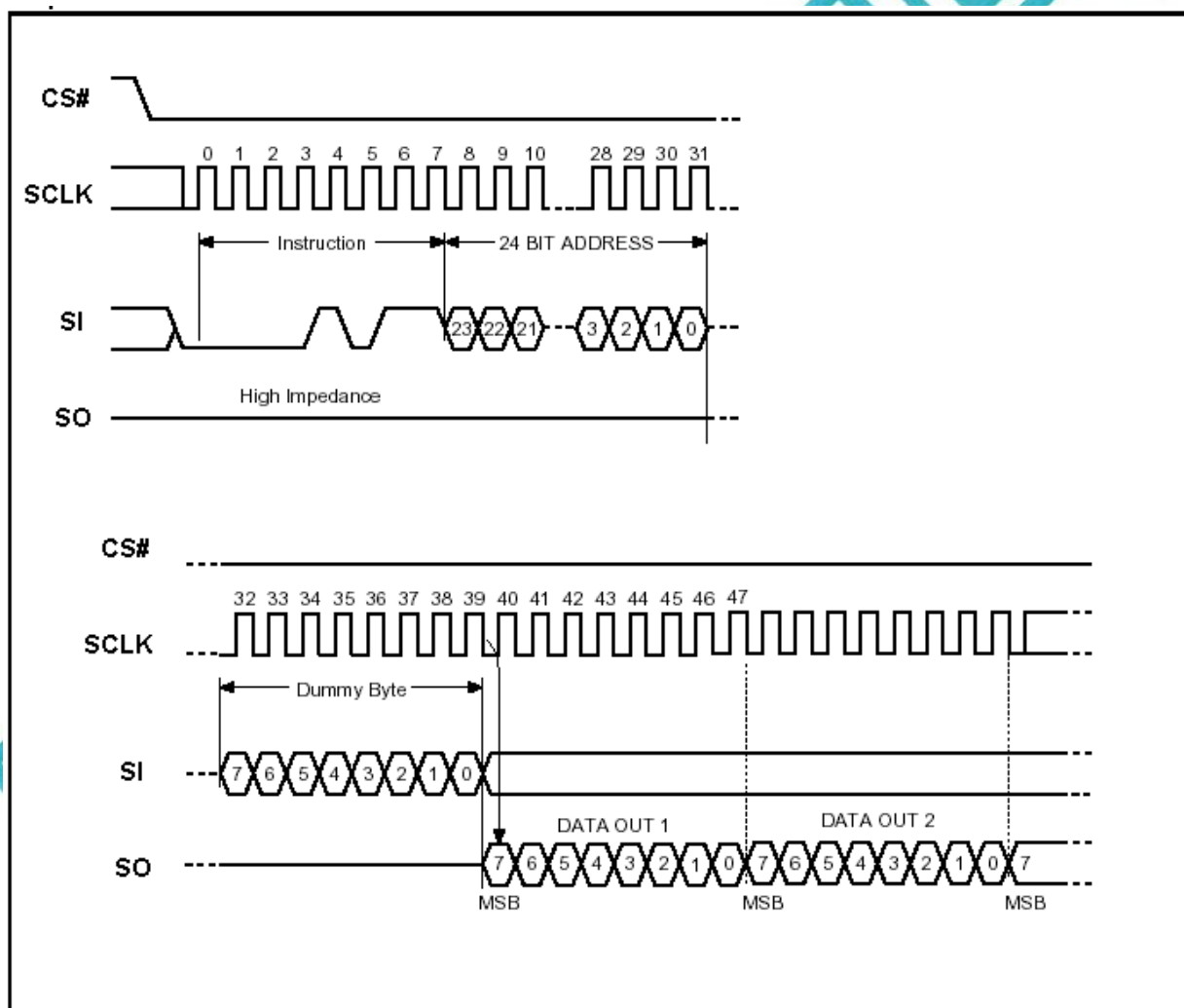
2.3 Read Data Bytes at Higher Speed (快速读取点阵数据)

Read Data Bytes at Higher Speed 需要用指令码来执行操作。READ_FAST 指令的时序如下(图):

- 首先把片选信号 (CS#) 变为低, 紧跟着的是 1 个字节的命令字 (0B h) 和 3 个字节的地址以及一个字节 Dummy Byte 通过串行数据输入引脚 (SI) 移位输入, 每一位在串行时钟 (SCLK) 上升沿被锁存。
- 然后该地址的字节数据通过串行数据输出引脚 (SO) 移位输出, 每一位在串行时钟 (SCLK) 下降沿被移出。
- 如果片选信号 (CS#) 继续保持为底, 则下一个地址的字节数据继续通过串行数据输出引脚 (SO) 移位输出。例: 读取一个 15x16 点阵汉字需要 32Byte, 则连续 32 个字节读取后结束一个汉字的点阵数据读取操作。

如果不需要继续读取数据, 则把片选信号 (CS#) 变为高, 结束本次操作。

图: Read Data Bytes at Higher Speed (READ_FAST) Instruction Sequence and Data-out sequence



3 字符点阵字库地址表

NO.	字库内容	编码体系	字符数	起始地址	参考算法
1	12x12 点阵 Unicode 点阵字库	Unicode	27484+985	0x00000	4.1.1
2	16x16 点阵 Unicode 点阵字库	Unicode	27484+985	0xA76B8	4.1.2
3	6x12 点阵 ASCII 标准字符	ASCII	96	0x186A58	4.2.3
4	12 点阵不等宽 ASCII 方头 (Arial) 字符	ASCII	96	0x187058	4.2.5
5	12 点阵不等宽 ASCII 白正字符	ASCII	96	0x187A18	4.2.6
6	8x16 点阵 ASCII 标准字符	ASCII	96	0x1883D8	4.2.4
7	5x7 点阵 ASCII 标准字符	ASCII	96	0x188BD8	4.2.1
8	7x8 点阵 ASCII 标准字符	ASCII	96	0x188ED8	4.2.2
9	16 点阵不等宽 ASCII 方头 (Arial) 字符	ASCII	96	0x1891D8	4.2.7
10	16 点阵不等宽 ASCII 白正字符	ASCII	96	0x189E98	4.2.8
11	8x16 点阵拉丁文系字符	Unicode	376	0x18AB58	4.3.1
12	8x16 点阵希腊文系字符	Unicode	96	0x18C2D8	4.3.2
13	8x16 点阵西里尔文系字符	Unicode	250	0x18C8D8	4.3.3
14	8x16 点阵特殊字符	GB2312	64	0x18D888	4.1.3
15	保留区			0x18DC78	
16	12 点阵不等宽 Unicode 字符 (拉丁文系、希腊文系、西里尔文系)	Unicode	555	0x19AD22	4.3.4-6
17	16 点阵不等宽 Unicode 字符 (拉丁文系、希腊文系、西里尔文系)	Unicode	555	0x19E580	4.3.9-11
18	16 点阵不等宽阿拉伯文系字符	Unicode	840	0x1A2F36	4.3.12
19	16 点阵不等宽阿拉伯文系变体字符	自定义	498	0x1A506A	4.3.13
20	12 点阵不等宽阿拉伯文系字符	Unicode	840	0x1AA0E6	4.3.7
21	12 点阵不等宽阿拉伯文系变体字符	自定义	498	0x1ABA4A	4.3.8
22	保留区			0x1F644E	

4 字符点阵数据在芯片中的地址计算方法

用户只要知道字符的内码，就可以计算出该字符点阵在芯片中的地址，然后就可从该地址连续读出点阵信息用于显示。

4.1 汉字字符点阵数据的地址计算

4.1.1 12x12 点阵 Unicode 汉字&字符

Ucode 表示 汉字内码

MSB 表示汉字内码 Ucode 的高 8bits。

LSB 表示汉字内码 Ucode 的低 8bits。

Address 表示汉字或 ASCII 字符点阵在芯片中的字节地址。

ZFindex 表示：根据附录 7.4 得到的查表函数为 WORD ZFindex(WORD Ucode)，返回在表中的序号；

BaseAdd=0x0000；

if(Ucode >=0x3400 && Ucode <= 0x4DB5) //UNICODE3.0 扩展汉字区 6582 个汉字

Address =(unicode-0x3400)*24+ BaseAdd;

else if(Ucode >=0x4E00 && Ucode <= 0x9FA5) //UNICODE3.0 字符区 20902 个汉字

Address =(unicode-0x4E00+6582)*24+ BaseAdd;

else if((Ucode >=0xFF00 && Ucode <= 0xFF5E) || (Ucode >=0x20 && Ucode <= 0x7E))

{ if(Ucode ==0xFF00 || Ucode == 0x20) //空格

Address = (27484+538) *24+ BaseAdd;

else if(Ucode >0xFF00 && Ucode <= 0xFF5E)

Address = (Ucode -0xFF00+27484+987)*24+ BaseAdd;

else if(Ucode >0x20 && Ucode <= 0x7E)

Address = (Ucode -0x20+27484+987)*24+ BaseAdd;

}

else if ((Ucode>=00A1&& Ucode <=33D5) || (Ucode>= E76C && Ucode <= FFE5)) //字符区范围

Address = ZFindex(Ucode)*24+27484*24+ BaseAdd;

4.1.2 16x16 点阵 Unicode 汉字&字符

Ucode 表示 汉字内码

MSB 表示汉字内码 Ucode 的高 8bits。

LSB 表示汉字内码 Ucode 的低 8bits。

Address 表示汉字或 ASCII 字符点阵在芯片中的字节地址。

ZFindex 表示：根据附录 7.4 得到的查表函数为 WORD ZFindex(WORD Ucode)，返回在表中的序号；

BaseAdd=0x0A76B8；

if(Ucode >=0x3400 && Ucode <= 0x4DB5) //UNICODE3.0 扩展汉字区 6582 个汉字

Address =(unicode-0x3400)*32+ BaseAdd;

else if(Ucode >=0x4E00 && Ucode <= 0x9FA5) //UNICODE3.0 字符区 20902 个汉字

Address =(unicode-0x4E00+6582)*32+ BaseAdd;

else if((Ucode >=0xFF00 && Ucode <= 0xFF5E) || (Ucode >=0x20 && Ucode <= 0x7E))

{ if(Ucode ==0xFF00 || Ucode == 0x20) //空格

```

        Address = (27484+538) * 32 + BaseAdd;
    else if(Ucode > 0xFF00 && Ucode <= 0xFF5E)
        Address = (Ucode - 0xFF00 + 27484 + 987) * 32 + BaseAdd;
    else if(Ucode > 0x20 && Ucode <= 0x7E)
        Address = (Ucode - 0x20 + 27484 + 987) * 32 + BaseAdd;
    }
    else if ((Ucode >= 00A1 && Ucode <= 33D5) || (Ucode >= E76C && Ucode <= FFE5)) //字符区范围
        Address = ZFindex(Ucode) * 32 + 27484 * 32 + BaseAdd;

```

4.1.3 8x16 点阵特殊字符

说明:

BaseAdd: 说明本套字库在字库芯片中的起始字节地址。

FontCode: 表示字符内码 (16bits)

ByteAddress: 表示字符点阵在芯片中的字节地址。

计算方法:

BaseAdd=0x18D888

if (FontCode >= 0xACA1) and (FontCode <= 0xACDF) then

ByteAddress = (FontCode - 0xACA1) * 16 + BaseAdd

4.2 ASCII 字符的地址计算

4.2.1 5x7 点阵 ASCII 标准字符

参数说明:

ASCIICode: 表示 ASCII 码 (8bits)

BaseAdd: 说明该套字库在芯片中的起始地址。

Address: ASCII 字符点阵在芯片中的字节地址。

计算方法:

BaseAdd=0x188BD8

if (ASCIICode >= 0x20) and (ASCIICode <= 0x7E) then

Address = (ASCIICode - 0x20) * 8 + BaseAdd

4.2.2 7x8 点阵 ASCII 标准字符

参数说明:

ASCIICode: 表示 ASCII 码 (8bits)

BaseAdd: 说明该套字库在芯片中的起始地址。

Address: ASCII 字符点阵在芯片中的字节地址。

计算方法:

BaseAdd=0x188ED8

if (ASCIICode >= 0x20) and (ASCIICode <= 0x7E) then

Address = (ASCIICode - 0x20) * 8 + BaseAdd

4.2.3 6x12 点阵 ASCII 标准字符

说明:

ASCIICode: 表示 ASCII 码 (8bits)

BaseAdd: 说明该套字库在芯片中的起始地址。

Address: ASCII 字符点阵在芯片中的字节地址。

计算方法:

BaseAdd=0x186A58

if (ASCIICode >= 0x20) and (ASCIICode <= 0x7E) then

Address = (ASCIICode - 0x20) * 12 + BaseAdd

4.2.4 8x16 点阵 ASCII 标准字符

说明:

ASCIICode: 表示 ASCII 码 (8bits)

BaseAdd: 说明该套字库在芯片中的起始地址。

Address: ASCII 字符点阵在芯片中的字节地址。

计算方法:

BaseAdd=0x1883D8

if (ASCIICode >= 0x20) and (ASCIICode <= 0x7E) then

Address = (ASCIICode - 0x20) * 16 + BaseAdd

4.2.5 12 点阵不等宽 ASCII 方头 (Arial) 字符

说明:

ASCIICode: 表示 ASCII 码 (8bits)

BaseAdd: 说明该套字库在芯片中的起始地址。

Address: ASCII 字符点阵在芯片中的字节地址。

计算方法:

BaseAdd=0x187058

if (ASCIICode >= 0x20) and (ASCIICode <= 0x7E) then

Address = (ASCIICode - 0x20) * 26 + BaseAdd

4.2.6 12 点阵不等宽 ASCII 白正 (Times New Roman) 字符

说明:

ASCIICode: 表示 ASCII 码 (8bits)

BaseAdd: 说明该套字库在芯片中的起始地址。

Address: ASCII 字符点阵在芯片中的字节地址。

计算方法:

BaseAdd=0x187A18

if (ASCIICode >= 0x20) and (ASCIICode <= 0x7E) then

Address = (ASCIICode - 0x20) * 26 + BaseAdd

4.2.7 16 点阵不等宽 ASCII 方头 (Arial) 字符

说明:

ASCIICode: 表示 ASCII 码 (8bits)

BaseAdd: 说明该套字库在芯片中的起始地址。

Address: ASCII 字符点阵在芯片中的字节地址。

计算方法:

BaseAdd=0x1891D8

if (ASCIICode >= 0x20) and (ASCIICode <= 0x7E) then

Address = (ASCIICode - 0x20) * 34 + BaseAdd

4.2.8 16 点阵不等宽 ASCII 白正 (Times New Roman) 字符

说明:

ASCIICode: 表示 ASCII 码 (8bits)

BaseAdd: 说明该套字库在芯片中的起始地址。

Address: ASCII 字符点阵在芯片中的字节地址。

计算方法:

BaseAdd=0x189E98

if (ASCIICode >= 0x20) and (ASCIICode <= 0x7E) then

Address = (ASCIICode - 0x20) * 34 + BaseAdd

4.3 Unicode 字符的地址计算

4.3.1 8x16 点阵拉丁文系字符

说明:

BaseAdd: 说明本套字库在字库芯片中的起始字节地址。

FontCode: 表示 unicode 内码 (16bits)

Address: 表示汉字点阵在芯片中的字节地址。

计算方法:

BaseAdd = 0x18AB58

if (FontCode >= 0x00A0) and (FontCode <= 0x0217) then

Address = (FontCode - 0x00A0) * 16 + BaseAdd

4.3.2 8x16 点阵希腊文系字符

说明:

BaseAdd: 说明本套字库在字库芯片中的起始字节地址。

FontCode: 表示 unicode 内码 (16bits)

Address: 表示汉字点阵在芯片中的字节地址。

计算方法:

BaseAdd = 0x18C2D8

if (FontCode >= 0x0370) and (FontCode <= 0x03CF) then

Address = (FontCode - 0x0370) * 16 + BaseAdd

4.3.3 8x16 点阵西里尔文系字符

说明:

BaseAdd: 说明本套字库在字库芯片中的起始字节地址。

FontCode: 表示 unicode 内码 (16bits)

Address: 表示汉字点阵在芯片中的字节地址。

计算方法:

BaseAdd=0x18C8D8

if (FontCode >= 0x0400) and (FontCode <=0x04F9) then

Address = (FontCode-0x0400) * 16+BaseAdd

4.3.4 12 点阵不等宽拉丁文系字符

说明:

BaseAdd: 说明本套字库在字库芯片中的起始字节地址。

FontCode: 表示 unicode 内码 (16bits)

Address: 表示汉字点阵在芯片中的字节地址。

计算方法:

BaseAdd=0x19AD22

if (FontCode >= 0x0020) and (FontCode <=0x007F) then

Address = (FontCode-0x0020) * 26+BaseAdd

Else if (FontCode >= 0x00A0) and (FontCode <=0x017F) then

Address = (FontCode-0x0040) * 26+BaseAdd

Else if (FontCode == 0x018F) then

Address = 320*26+BaseAdd

Else if (FontCode == 0x0192) then

Address = 321*26+BaseAdd

Else if (FontCode == 0x01a0) then

Address = 322*26+BaseAdd

Else if (FontCode == 0x01a1) then

Address = 323*26+BaseAdd

Else if (FontCode == 0x01af) then

Address = 324*26+BaseAdd

Else if (FontCode == 0x01b0) then

Address = 325*26+BaseAdd

Else if (FontCode >= 0x01cd) and (FontCode <= 0x01dc) then

Address = (326+FontCode - 0x01cd)*26+BaseAdd

Else if (FontCode == 0x01dd) then

Address = 348*26+BaseAdd

Else if (FontCode >= 0x01e0) and (FontCode <= 0x01e3) then

Address = (342 + FontCode - 0x01e0)*26+BaseAdd

Else if (FontCode == 0x01fe) then

Address = 346*26+BaseAdd

Else if (FontCode == 0x01ff) then

$$\text{Address} = 347 * 26 + \text{BaseAdd}$$

4.3.5 12 点阵不等宽希腊文系字符

说明:

BaseAdd: 说明本套字库在字库芯片中的起始字节地址。

FontCode: 表示 unicode 内码 (16bits)

Address: 表示汉字点阵在芯片中的字节地址。

计算方法:

$$\text{BaseAdd} = 0x19AD22 + 349 * 26$$

if (FontCode >= 0x037d) and (FontCode <= 0x037f) then

$$\text{Address} = (\text{FontCode} - 0x037d) * 26 + \text{BaseAdd}$$

Else if (FontCode >= 0x0386) and (FontCode <= 0x03CE) then

$$\text{Address} = (\text{FontCode} - 0x0383) * 26 + \text{BaseAdd}$$

4.3.6 12 点阵不等宽西里尔文系字符

说明:

BaseAdd: 说明本套字库在字库芯片中的起始字节地址。

FontCode: 表示 unicode 内码 (16bits)

Address: 表示汉字点阵在芯片中的字节地址。

计算方法:

$$\text{BaseAdd} = 0x19AD22 + 425 * 26$$

if (FontCode >= 0x0400) and (FontCode <= 0x045F) then

$$\text{Address} = (\text{FontCode} - 0x0400) * 26 + \text{BaseAdd}$$

Else if (FontCode >= 0x0490) and (FontCode <= 0x04a3) then

$$\text{Address} = (\text{FontCode} - 0x0490 + 96) * 26 + \text{BaseAdd}$$

Else if (FontCode >= 0x04AE) and (FontCode <= 0x04B5) then

$$\text{Address} = (\text{FontCode} - 0x04AE + 116) * 26 + \text{BaseAdd}$$

Else if (FontCode >= 0x04BA) and (FontCode <= 0x04BB) then

$$\text{Address} = (\text{FontCode} - 0x04BA + 124) * 26 + \text{BaseAdd}$$

Else if (FontCode >= 0x04D8) and (FontCode <= 0x04D9) then

$$\text{Address} = (\text{FontCode} - 0x04D8 + 126) * 26 + \text{BaseAdd}$$

Else if (FontCode >= 0x04E8) and (FontCode <= 0x04E9) then

$$\text{Address} = (\text{FontCode} - 0x04E8 + 128) * 26 + \text{BaseAdd}$$

4.3.7 12 点阵不等宽阿拉伯文系字符

说明:

BaseAdd: 说明本套字库在字库芯片中的起始字节地址。

FontCode: 表示 unicode 内码 (16bits)

Address: 表示汉字点阵在芯片中的字节地址。

计算方法:

$$\text{BaseAdd} = 0x1AA0E6$$

if (FontCode >= 0x0600) and (FontCode <= 0x06F9) then

$$\text{Address} = (\text{FontCode} - 0x0600) * 26 + \text{BaseAdd}$$

4.3.8 12 点阵不等宽阿拉伯文系变体字符

说明:

BaseAdd: 说明本套字库在字库芯片中的起始字节地址。

FontCode: 表示字符内码 (16bits)

Address: 表示汉字点阵在芯片中的字节地址。

计算方法:

BaseAdd=0x1ABA4A

if (FontCode >= 0xB000) and (FontCode <= 0XB1F1) then

$$\text{Address} = (\text{FontCode} - 0xB000) * 26 + \text{BaseAdd}$$

4.3.9 16 点阵不等宽拉丁文系字符

说明:

BaseAdd: 说明本套字库在字库芯片中的起始字节地址。

FontCode: 表示 unicode 内码 (16bits)

Address: 表示汉字点阵在芯片中的字节地址。

计算方法:

BaseAdd=0x19E580

if (FontCode >= 0x0020) and (FontCode <= 0x007F) then

$$\text{Address} = (\text{FontCode} - 0x0020) * 34 + \text{BaseAdd}$$

Else if (FontCode >= 0x00A0) and (FontCode <= 0x017F) then

$$\text{Address} = (\text{FontCode} - 0x0040) * 34 + \text{BaseAdd}$$

Else if (FontCode == 0x018F) then

$$\text{Address} = 320 * 34 + \text{BaseAdd}$$

Else if (FontCode == 0x0192) then

$$\text{Address} = 321 * 34 + \text{BaseAdd}$$

Else if (FontCode == 0x01a0) then

$$\text{Address} = 322 * 34 + \text{BaseAdd}$$

Else if (FontCode == 0x01a1) then

$$\text{Address} = 323 * 34 + \text{BaseAdd}$$

Else if (FontCode == 0x01af) then

$$\text{Address} = 324 * 34 + \text{BaseAdd}$$

Else if (FontCode == 0x01b0) then

$$\text{Address} = 325 * 34 + \text{BaseAdd}$$

Else if (FontCode >= 0x01cd) and (FontCode <= 0x01dc) then

$$\text{Address} = (326 + \text{FontCode} - 0x01cd) * 34 + \text{BaseAdd}$$

Else if (FontCode == 0x01dd) then

$$\text{Address} = 348 * 34 + \text{BaseAdd}$$

Else if (FontCode >= 0x01e0) and (FontCode <= 0x01e3) then

$$\text{Address} = (342 + \text{FontCode} - 0x01e0) * 34 + \text{BaseAdd}$$

Else if (FontCode == 0x01fe) then

```
Address = 346*34+BaseAdd
Else if (FontCode == 0x01ff) then
    Address = 347*34+BaseAdd
```

4.3.10 16 点阵不等宽希腊文系字符

说明:

BaseAdd: 说明本套字库在字库芯片中的起始字节地址。

FontCode: 表示 unicode 内码 (16bits)

Address: 表示汉字点阵在芯片中的字节地址。

计算方法:

```
BaseAdd=0x19E580+349*34
if (FontCode >= 0x037d) and (FontCode <=0x037f) then
    Address = (FontCode-0x037d) * 34+BaseAdd
Else if (FontCode >= 0x0386) and (FontCode <=0x03CE) then
    Address = (FontCode-0x0383) * 34+BaseAdd
```

4.3.11 16 点阵不等宽西里尔文系字符

说明:

BaseAdd: 说明本套字库在字库芯片中的起始字节地址。

FontCode: 表示 unicode 内码 (16bits)

Address: 表示汉字点阵在芯片中的字节地址。

计算方法:

```
BaseAdd=0x19E580+425*34
if (FontCode >= 0x0400) and (FontCode <=0x045F) then
    Address = (FontCode-0x0400) * 34+BaseAdd
Else if (FontCode >= 0x0490) and (FontCode <=0x04a3) then
    Address = (FontCode-0x 0490+96) * 34+BaseAdd
Else if (FontCode >= 0x04AE) and (FontCode <=0x04B5) then
    Address = (FontCode-0x04AE+116) * 34+BaseAdd
Else if (FontCode >= 0x04BA) and (FontCode <=0x04BB) then
    Address = (FontCode-0x04BA+124) * 34+BaseAdd
Else if (FontCode >= 0x04D8) and (FontCode <=0x04D9) then
    Address = (FontCode-0x04D8+126) * 34+BaseAdd
Else if (FontCode >= 0x04E8) and (FontCode <=0x04E9) then
    Address = (FontCode-0x04E8+128) * 34+BaseAdd
```

4.3.12 16 点阵不等宽阿拉伯文系字符

说明:

BaseAdd: 说明本套字库在字库芯片中的起始字节地址。

FontCode: 表示 unicode 内码 (16bits)

Address: 表示汉字点阵在芯片中的字节地址。

计算方法:

BaseAdd=0x1A2F36

if (FontCode >= 0x0600) and (FontCode <=0x06F9) then

Address = (FontCode-0x0600) * 34+BaseAdd

4.3.13 16 点阵不等宽阿拉伯文系变体字符

说明：

BaseAdd：说明本套字库在字库芯片中的起始字节地址。

FontCode：表示字符内码（16bits）

Address：表示汉字点阵在芯片中的字节地址。

计算方法：

BaseAdd=0x1A506A

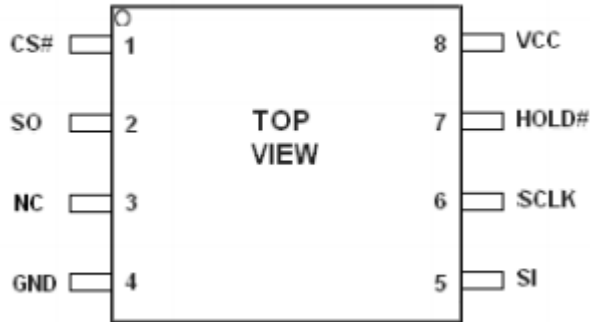
if (FontCode >= 0xB000) and (FontCode <=0XB1F1) then

Address = (FontCode-0xB000) * 34+BaseAdd

5 引脚描述与电路连接

5.1 引脚配置

SOP8-B



SOP8-B

NO.	名称	I/O	描述
1	CS#	I	片选输入 (Chip enable input)
2	SO	O	串行数据输出 (Serial data output)
3	NC		悬空
4	GND		地(Ground)
5	SI	I	串行数据输入 (Serial data input)
6	SCLK	I	串行时钟输入 (Serial clock input)
7	HOLD#	I	总线挂起 (Hold, to pause the device without)
8	VCC		电源(+ 3.3V Power Supply)

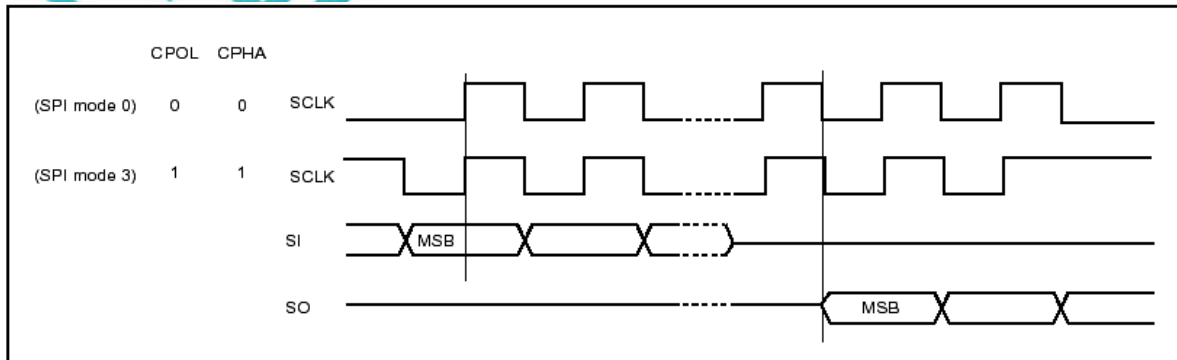
5.2 引脚描述

串行数据输出 (SO): 该信号用来把数据从芯片串行输出, 数据在时钟的下降沿移出。

串行数据输入 (SI): 该信号用来把数据从串行输入芯片, 数据在时钟的上升沿移入。

串行时钟输入 (SCLK): 数据在时钟上升沿移入, 在下降沿移出。

片选输入 (CS#): 所有串行数据传输开始于CS#下降沿, CS#在传输期间必须保持为低电平, 在两条指令之间保持为高电平。



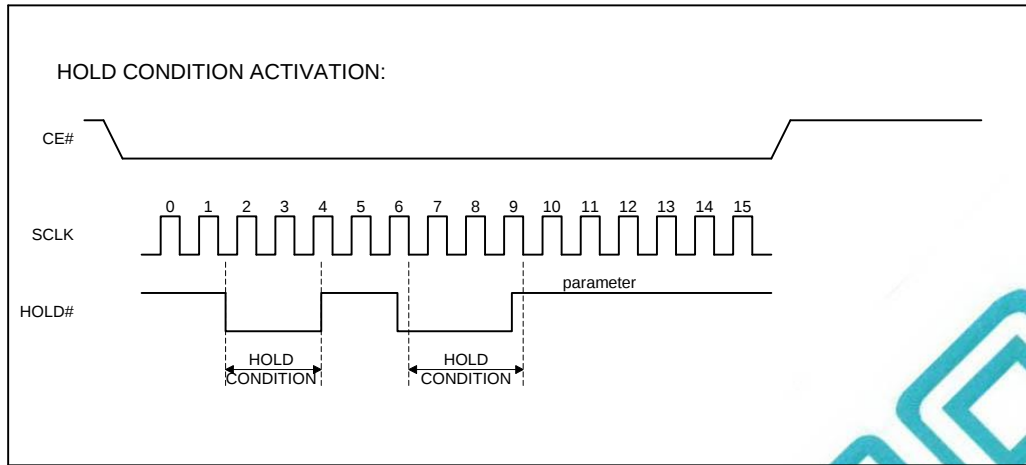
总线挂起输入 (HOLD#):

该信号用于片选信号有效期间暂停数据传输, 在总线挂起期间, 串行数据输出信号处于高阻态, 芯片不对

串行数据输入信号和串行时钟信号进行响应。

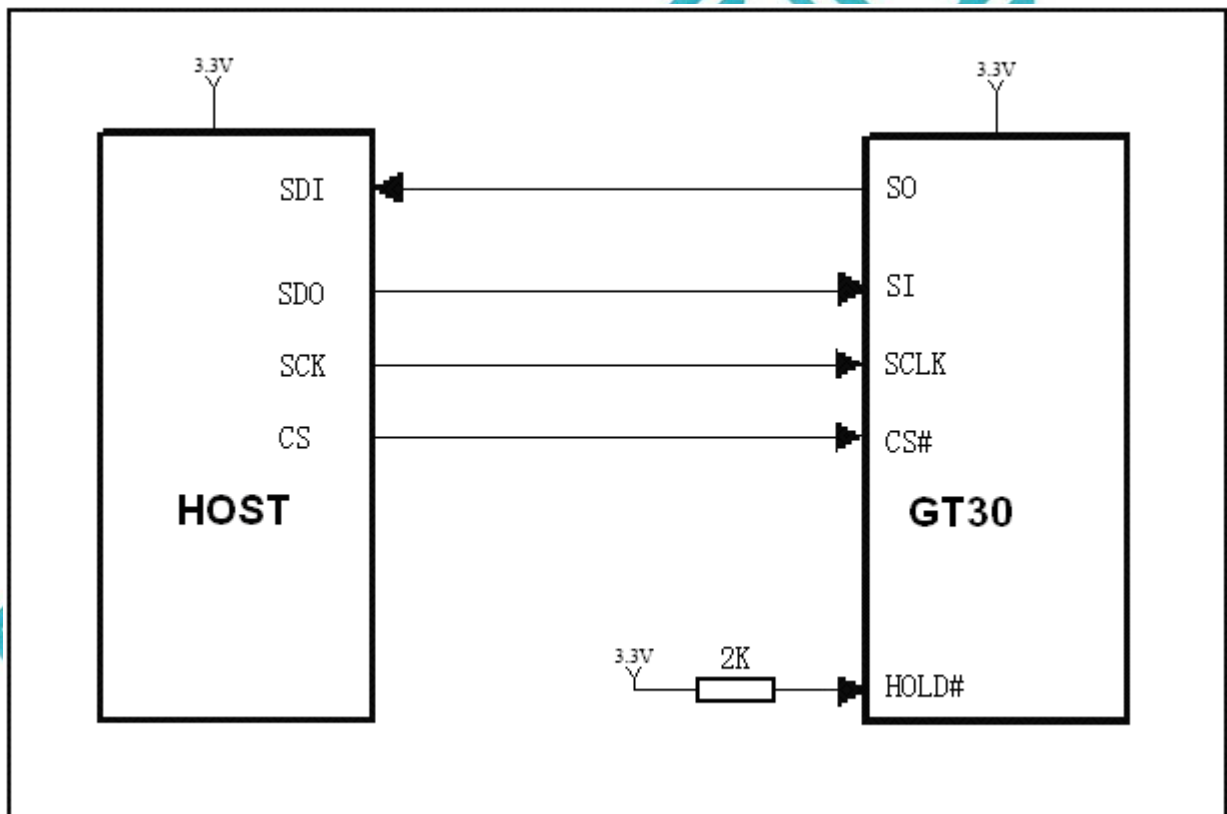
当HOLD#信号变为低并且串行时钟信号（SCLK）处于低电平时，进入总线挂起状态。

当HOLD#信号变为高并时串行时钟信号（SCLK）处于低电平时，结束总线挂起状态。



5.3 HOST CPU 主机与 SPI 接口接口电路示意图

SPI 与主机接口电路连接可以参考下图（#HOLD 管脚建议接 2K 电阻 3.3V 拉高）。



HOST CPU 主机 SPI 接口电路示意图

6 电气特性

6.1 绝对最大额定值

Symbol	Parameter	Min.	Max.	Unit	Condition
T _{OP}	Operating Temperature	-40	85	°C	SPI mode
T _{STG}	Storage Temperature	-55	125	°C	
VCC	Supply Voltage	-0.5	4.0	V	
V _{IN}	Input Voltage	-0.5	4.0	V	
GND	Power Ground	0	0	V	

6.2 DC 特性

Condition: T_{OP} = -40°C to 85°C, GND=0V in SPI mode;

Symbol	Parameter	Min.	Max.	Unit	Condition
I _{DD}	VCC Supply Current(active)		20	mA	
I _{SB}	VCC Standby Current		5	uA	
V _{IL}	Input LOW Voltage	-0.3	0.6	V	VCC=2.7V-3.6V
V _{IH}	Input HIGH Voltage	0.7VCC	VCC+0.3	V	
V _{OL}	Output LOW Voltage		0.4 (I _{OL} =1.6mA)	V	
V _{OH}	Output HIGH Voltage	VCC-0.2 (I _{OH} =100uA)		V	
I _{LI}	Input Leakage Current	0	±2	uA	
I _{LO}	Output Leakage Current	0	±2	uA	

Note: I_{IL}: Input LOW Current, I_{IH}: Input HIGH Current,
I_{OL}: Output LOW Current, I_{OH}: Output HIGH Current,

6.3 AC 特性

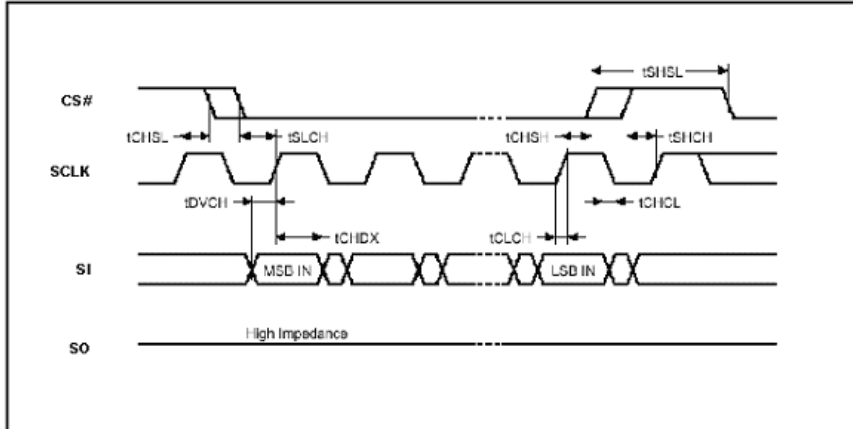
6.3.1 SPI 接口模式下 AC 特性

Condition: T_{OP} = -20°C to 85°C, VCC= 2.7V to 3.6V

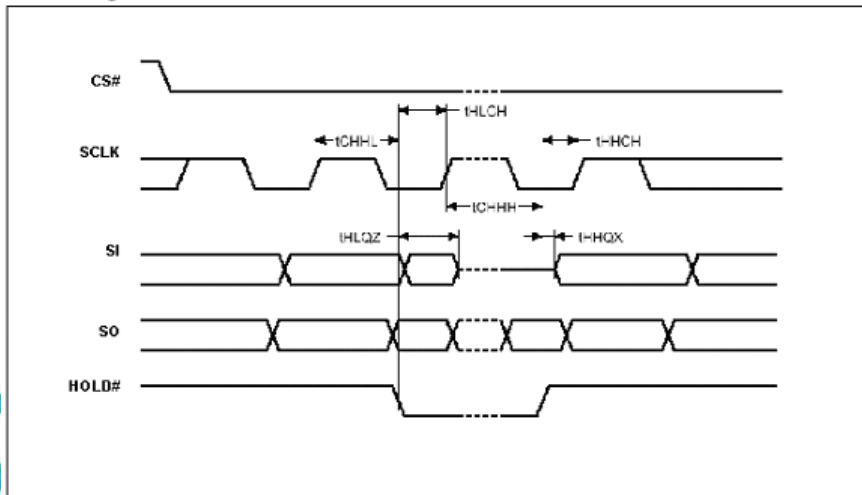
Symbol	Alt.	Parameter	Min.	Max.	Unit
F _C	F _C	Clock Frequency	D.C.	80	MHz
t _{CH}	t _{CLH}	Clock High Time	4		ns
t _{CL}	t _{CLL}	Clock Low Time	4		ns
t _{CLCH}		Clock Rise Time(peak to peak)	0.2		V/ns
t _{CHCL}		Clock Fall Time (peak to peak)	0.2		V/ns
t _{SLCH}	t _{CS}	CS# Active Setup Time (relative to SCLK)	5		ns
t _{CHSL}		CS# Not Active Hold Time (relative to SCLK)	5		ns
t _{DVCH}	t _{DSU}	Data In Setup Time	2		ns
t _{CHDX}	t _{DH}	Data In Hold Time	2		ns
t _{CHSH}		CS# Active Hold Time (relative to SCLK)	5		ns
t _{SHCH}		CS# Not Active Setup Time (relative to SCLK)	5		ns
t _{SHSL}	t _{CSH}	CS# Deselect Time	100		ns
t _{SHQZ}	t _{DIS}	Output Disable Time		6	ns
t _{CLQV}	t _V	Clock Low to Output Valid		7	ns

t_{CLQX}	t_{HO}	Output Hold Time	0		ns
t_{HLCH}		HOLD# Setup Time (relative to SCLK)	5		ns
t_{CHHH}		HOLD# Hold Time (relative to SCLK)	5		ns
t_{HHCH}		HOLD Setup Time (relative to SCLK)	5		ns
t_{CHHL}		HOLD Hold Time (relative to SCLK)	5		ns
t_{HHQX}	t_{LZ}	HOLD to Output Low-Z		6	ns
t_{HLQZ}	t_{HZ}	HOLD# to Output High-Z		6	ns

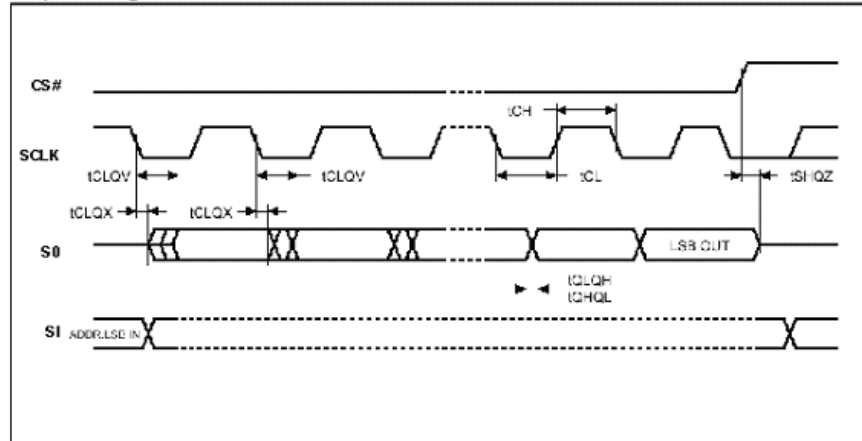
Serial Input Timing



Hold Timing

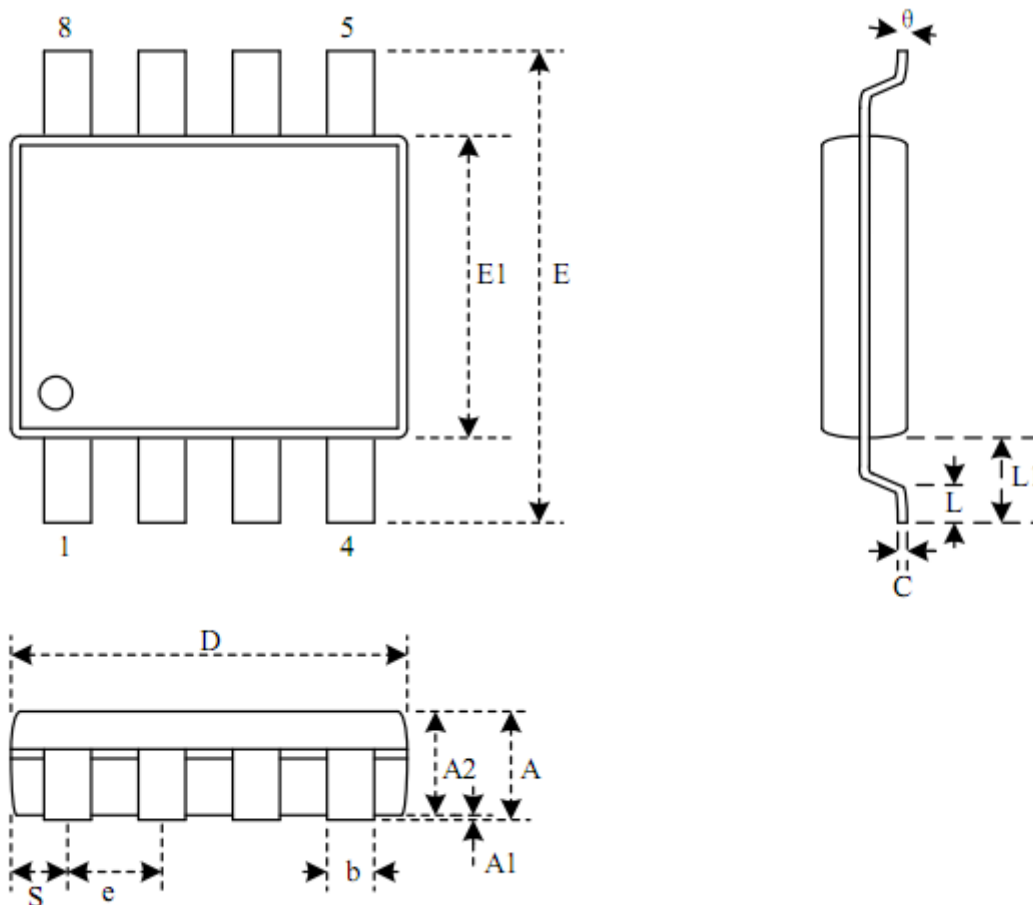


Output Timing



7 封装尺寸：SOP8-B

单位: mm



Dimensions

Symbol		A	A1	A2	b	C	D	E	E1	e	L	L1	S	θ
Unit														
mm	Min		0.05	1.70	0.36	0.19	5.13	7.70	5.18		0.50	1.21	0.62	0
	Nom		0.15	1.80	0.41	0.20	5.23	7.90	5.28	1.27	0.65	1.31	0.74	5
	Max	2.16	0.25	1.91	0.51	0.25	5.33	8.10	5.38		0.80	1.41	0.88	8
Inch	Min		0.002	0.067	0.014	0.007	0.202	0.303	0.204		0.020	0.048	0.024	0
	Nom		0.006	0.071	0.016	0.008	0.206	0.311	0.208	0.050	0.026	0.052	0.029	5
	Max	0.085	0.010	0.075	0.020	0.010	0.210	0.319	0.212		0.031	0.056	0.035	8

8 附录

8.1 UNICODE3.0（GB13000）字符区

UNICODE 字符区码位由 00A1~33D5、E76C~FFE5 离散分布。共计 1088 个字符；

UNICODE3.0 字符区

í	±	Á	Ñ	á	ñ	ē	ü	Г	Т	λ	Б	С	б	с
A1	B1	C1	D1	E1	F1	113	1D4	393	3A4	3BB	411	421	431	441
ø	²	Â	Ò	â	ò	ě	û	Δ	ı	μ	В	Т	в	т
A2	B2	C2	D2	E2	F2	11B	1D6	394	3A5	3BC	412	422	432	442
£	³	Ã	Ó	ã	ó	ĩ	ü	Ε	Φ	ν	Г	У	г	у
A3	B3	C3	D3	E3	F3	12B	1D8	395	3A6	3BD	413	423	433	443
⊗	´	Ä	Ô	ä	ô	ñ	ü	Z	X	ξ	Д	Ф	д	ф
A4	B4	C4	D4	E4	F4	144	1DA	396	3A7	3BE	414	424	434	444
¥	μ	Å	Ö	å	ö	ñ	ü	Η	Ψ	ο	Ε	Χ	ε	χ
A5	B5	C5	D5	E5	F5	148	1DC	397	3A8	3BF	415	425	435	445
!	¶	Æ	Ö	æ	ö	ō	α	Θ	Ω	π	Ж	Ц	ж	ц
A6	B6	C6	D6	E6	F6	14D	251	398	3A9	3C0	416	426	436	446
§	•	Ç	×	ç	÷	Œ	g	Ι	α	ρ	З	Ч	з	ч
A7	B7	C7	D7	E7	F7	152	261	399	3B1	3C1	417	427	437	447
¨	,	È	Ø	è	ø	æ	^	Κ	β	σ	И	Ш	и	ш
A8	B8	C8	D8	E8	F8	153	2C6	39A	3B2	3C3	418	428	438	448
©	¹	É	Ù	é	ù	š	˘	Λ	γ	τ	Й	Щ	й	щ
A9	B9	C9	D9	E9	F9	160	2C7	39B	3B3	3C4	419	429	439	449
ª	º	Ê	Ú	ê	ú	š	—	Μ	δ	υ	К	Ъ	к	ъ
AA	BA	CA	DA	EA	FA	161	2C9	39C	3B4	3C5	41A	42A	43A	44A
«	»	Ë	Û	ë	û	ā	˘	Ν	ε	φ	Л	Ы	л	ы
AB	BB	CB	DB	EB	FB	16B	2CA	39D	3B5	3C6	41B	42B	43B	44B
¬	¼	Ï	Ü	ï	ü	ÿ	˘	Ξ	ζ	χ	М	Ь	м	ь
AC	BC	CC	DC	EC	FC	178	2CB	39E	3B6	3C7	41C	42C	43C	44C
-	½	Í	Ý	í	ý	ƒ	•	Ο	η	ψ	Н	Э	н	э
AD	BD	CD	DD	ED	FD	192	2D9	39F	3B7	3C8	41D	42D	43D	44D
®	¾	Î	Þ	î	þ	ǎ	˘	Π	θ	ω	О	Ю	о	ю
AE	BE	CE	DE	EE	FE	1CE	2DC	3A0	3B8	3C9	41E	42E	43E	44E
—	¿	Ï	ß	ï	ÿ	ı	Α	Ρ	ι	Ε	Π	Я	п	я
AF	BF	CF	DF	EF	FF	1D0	391	3A1	3B9	401	41F	42F	43F	44F
°	À	Ð	à	ð	ā	ö	Β	Σ	κ	Α	Ρ	α	ρ	ё
B0	C0	D0	E0	F0	101	1D2	392	3A3	3BA	410	420	430	440	451

UNICODE3.0 字符区

-	‰	III	VII	✓	::	△	(5)	1.	17.	┐	┌	└	+	=
2010	2030	2162	2176	221A	2237	22BF	2478	2488	2498	250C	251C	252C	253C	2550
-	'	IV	VIII	∞	∞	∩	(6)	2.	18.	┐	┌	└	+	
2013	2032	2163	2177	221D	223D	2312	2479	2489	2499	250D	251D	252D	253D	2551
—	”	V	IX	∞	≈	①	(7)	3.	19.	┐	┌	└	+	F
2014	2033	2164	2178	221E	2248	2460	247A	248A	249A	250E	251E	252E	253E	2552
—	`	VI	X	L	∞	②	(8)	4.	20.	┐	┌	└	+	π
2015	2035	2165	2179	221F	224C	2461	247B	248B	249B	250F	251F	252F	253F	2553
	◀	VII	←	∠	÷	③	(9)	5.	—	┐	┌	└	+	π
2016	2039	2166	2190	2220	2252	2462	247C	248C	2500	2510	2520	2530	2540	2554
‘	’	VIII	↑		≠	④	(10)	6.	—	┐	┌	└	+	π
2018	203A	2167	2191	2223	2260	2463	247D	248D	2501	2511	2521	2531	2541	2555
’	×	IX	→	//	≡	⑤	(11)	7.		┐	┌	└	+	π
2019	203B	2168	2192	2225	2261	2464	247E	248E	2502	2512	2522	2532	2542	2556
,	€	X	↓	^	≤	⑥	(12)	8.		┐	┌	└	+	π
201A	20AC	2169	2193	2227	2264	2465	247F	248F	2503	2513	2523	2533	2543	2557
“	°C	XI	↖	V	≥	⑦	(13)	9.	---	┐	┌	└	+	π
201C	2103	216A	2196	2228	2265	2466	2480	2490	2504	2514	2524	2534	2544	2558
”	‰	XII	↗	∩	≤	⑧	(14)	10.	---	┐	┌	└	+	π
201D	2105	216B	2197	2229	2266	2467	2481	2491	2505	2515	2525	2535	2545	2559
„	°F	i	↘	U	≥	⑨	(15)	11.	:	┐	┌	└	+	π
201E	2109	2170	2198	222A	2267	2468	2482	2492	2506	2516	2526	2536	2546	255A
☞	No	ii	↙	J	◀	⑩	(16)	12.	:	┐	┌	└	+	π
2020	2116	2171	2199	222B	226E	2469	2483	2493	2507	2517	2527	2537	2547	255B
☞	TEL	iii	€	♫	▶	(11)	(17)	13.	---	┐	┌	└	+	π
2021	2121	2172	2208	222E	226F	2474	2484	2494	2508	2518	2528	2538	2548	255C
◆	™	iv	Π	∴	⊕	(2)	(18)	14.	---	┐	┌	└	+	π
2022	2122	2173	220F	2234	2295	2475	2485	2495	2509	2519	2529	2539	2549	255D
••	I	V	Σ	∴	⊙	(3)	(19)	15.	:	┐	┌	└	+	π
2025	2160	2174	2211	2235	2299	2476	2486	2496	250A	251A	252A	253A	254A	255E
...	II	vi	/	:	⊥	(4)	(20)	16.	:	┐	┌	└	+	π
2026	2161	2175	2215	2236	22A5	2477	2487	2497	250B	251B	252B	253B	254B	255F



UNICODE3.0 字符区

𠂇	𠂈	■	●	○	』	い	ご	つ	ぴ	や	”	キ	ソ	ネ
2560	2570	258D	25CF	3007	3017	3044	3054	3064	3074	3084	309B	30AD	30BD	30CD
𠂉	／	■	▲	<	”	う	さ	づ	ふ	ゆ	°	ギ	ゾ	ノ
2561	2571	258E	25E2	3008	301D	3045	3055	3065	3075	3085	309C	30AE	30BE	30CE
𠂊	＼	■	▲	>	”	う	ざ	て	ぶ	ゆ	ゝ	ク	タ	ハ
2562	2572	258F	25E3	3009	301E	3046	3056	3066	3076	3086	309D	30AF	30BF	30CF
𠂋	×	■	▲	《	丨	え	し	で	ぶ	よ	ミ	グ	ダ	バ
2563	2573	2593	25E4	300A	3021	3047	3057	3067	3077	3087	309E	30B0	30C0	30D0
𠂌	—	—	▲	》		え	じ	と	へ	よ	ア	ケ	チ	パ
2564	2581	2594	25E5	300B	3022	3048	3058	3068	3078	3088	30A1	30B1	30C1	30D1
𠂍	—	■	★	「		お	す	ど	べ	ら	ア	ゲ	ヂ	ヒ
2565	2582	2595	2605	300C	3023	3049	3059	3069	3079	3089	30A2	30B2	30C2	30D2
𠂎	—	■	☆	」	×	お	ず	な	ぺ	り	イ	コ	ツ	ビ
2566	2583	25A0	2606	300D	3024	304A	305A	306A	307A	308A	30A3	30B3	30C3	30D3
𠂏	—	□	○	『	々	か	せ	に	ほ	る	イ	ゴ	ツ	ピ
2567	2584	25A1	2609	300E	3025	304B	305B	306B	307B	308B	30A4	30B4	30C4	30D4
𠂐	—	▲	♀	』	⊥	が	ぜ	ぬ	ぼ	れ	ウ	サ	ヅ	フ
2568	2585	25B2	2640	300F	3026	304C	305C	306C	307C	308C	30A5	30B5	30C5	30D5
𠂑	—	△	♂	【	≡	き	そ	ね	ぼ	ろ	ウ	ザ	テ	ブ
2569	2586	25B3	2642	3010	3027	304D	305D	306D	307D	308D	30A6	30B6	30C6	30D6
𠂒	—	▼	—	】	≡	ぎ	ぞ	の	ま	わ	エ	シ	デ	プ
256A	2587	25BC	3000	3011	3028	304E	305E	306E	307E	308E	30A7	30B7	30C7	30D7
𠂓	—	▽	、	〒	々	く	た	は	み	わ	エ	ジ	ト	へ
256B	2588	25BD	3001	3012	3029	304F	305F	306F	307F	308F	30A8	30B8	30C8	30D8
𠂔	—	◆	。	＝	■	ぐ	だ	ば	む	ゐ	オ	ス	ド	べ
256C	2589	25C6	3002	3013	303E	3050	3060	3070	3080	3090	30A9	30B9	30C9	30D9
𠂕	—	◇	”	（	あ	け	ち	ば	め	ゑ	オ	ズ	ナ	ぺ
256D	258A	25C7	3003	3014	3041	3051	3061	3071	3081	3091	30AA	30BA	30CA	30DA
𠂖	—	○	々	）	あ	げ	ぢ	ひ	も	を	カ	セ	ニ	ホ
256E	258B	25CB	3005	3015	3042	3052	3062	3072	3082	3092	30AB	30BB	30CB	30DB
𠂗	—	◎	♂	【	い	こ	っ	び	ゃ	ん	ガ	ゼ	ヌ	ボ
256F	258C	25CE	3006	3016	3043	3053	3063	3073	3083	3093	30AC	30BC	30CC	30DC



UNICODE3.0 字符区

ポ	ロ	㇀	㇁	㇂	mm	?	㇄	㇅	㇆	㇇	㇈	㇉	㇊	㇋	㇌
30DD	30ED	3108	3118	3128	339C	E793	E7F1	E822	E832	E842	E852	E862	FA1F	FE39	
マ	ワ	㇎	㇏	㇐	cm	㇒	㇓	小	正	𠂔	𠂕	𠂖	𠂗	𠂘	𠂙
30DE	30EE	3109	3119	3129	339D	E794	E7F2	E823	E833	E843	E853	E863	FA20	FE3A	
ミ	㇖	㇗	㇘	㇙	km	㇛	㇜	㇝	㇞	㇟	㇠	㇡	㇢	㇣	㇤
30DF	30EF	310A	311A	3220	339E	E795	E7F3	E824	E834	E844	E854	E864	FA21	FE3B	
ム	㇑	㇒	㇓	㇔	m ²	!	㇖	㇗	㇘	㇙	㇚	㇛	㇜	㇝	㇞
30E0	30F0	310B	311B	3221	33A1	E796	E815	E825	E835	E845	E855	F92C	FA23	FE3C	
メ	㇑	㇒	㇓	㇔	cc	㇖	㇗	㇘	㇙	㇚	㇛	㇜	㇝	㇞	㇟
30E1	30F1	310C	311C	3222	33C4	E7C7	E816	E826	E836	E846	E856	F979	FA24	FE3D	
モ	㇑	㇒	㇓	㇔	KM	㇖	㇗	㇘	㇙	㇚	㇛	㇜	㇝	㇞	㇟
30E2	30F2	310D	311D	3223	33CE	E7C8	E817	E827	E837	E847	E857	F995	FA27	FE3E	
ヤ	㇑	㇒	㇓	㇔	ln	㇖	㇗	㇘	㇙	㇚	㇛	㇜	㇝	㇞	㇟
30E3	30F3	310E	311E	3224	33D1	E7E7	E818	E828	E838	E848	E858	F9E7	FA28	FE3F	
ヤ	㇑	㇒	㇓	㇔	log	㇖	㇗	㇘	㇙	㇚	㇛	㇜	㇝	㇞	㇟
30E4	30F4	310F	311F	3225	33D2	E7E8	E819	E829	E839	E849	E859	F9F1	FA29	FE40	
ユ	㇑	㇒	㇓	㇔	mil	㇖	㇗	㇘	㇙	㇚	㇛	㇜	㇝	㇞	㇟
30E5	30F5	3110	3120	3226	33D5	E7E9	E81A	E82A	E83A	E84A	E85A	FA0C	FE30	FE41	
ユ	㇑	㇒	㇓	㇔	€	㇖	㇗	㇘	㇙	㇚	㇛	㇜	㇝	㇞	㇟
30E6	30F6	3111	3121	3227	E76C	E7EA	E81B	E82B	E83B	E84B	E85B	FA0D	FE31	FE42	
ヨ	㇑	㇒	㇓	㇔	㇖	㇗	㇘	㇙	㇚	㇛	㇜	㇝	㇞	㇟	㇠
30E7	30FC	3112	3122	3228	E78D	E7EB	E81C	E82C	E83C	E84C	E85C	FA0E	FE33	FE43	
ヨ	㇑	㇒	㇓	㇔	㇖	㇗	㇘	㇙	㇚	㇛	㇜	㇝	㇞	㇟	㇠
30E8	30FD	3113	3123	3229	E78E	E7EC	E81D	E82D	E83D	E84D	E85D	FA0F	FE34	FE44	
ラ	㇑	㇒	㇓	㇔	㇖	㇗	㇘	㇙	㇚	㇛	㇜	㇝	㇞	㇟	㇠
30E9	30FE	3114	3124	3231	E78F	E7ED	E81E	E82E	E83E	E84E	E85E	FA11	FE35	FE49	
リ	㇑	㇒	㇓	㇔	㇖	㇗	㇘	㇙	㇚	㇛	㇜	㇝	㇞	㇟	㇠
30EA	3105	3115	3125	32A3	E790	E7EE	E81F	E82F	E83F	E84F	E85F	FA13	FE36	FE4A	
ル	㇑	㇒	㇓	㇔	mg	㇖	㇗	㇘	㇙	㇚	㇛	㇜	㇝	㇞	㇟
30EB	3106	3116	3126	338E	E791	E7EF	E820	E830	E840	E850	E860	FA14	FE37	FE4B	
レ	㇑	㇒	㇓	㇔	kg	㇖	㇗	㇘	㇙	㇚	㇛	㇜	㇝	㇞	㇟
30EC	3107	3117	3127	338F	E792	E7F0	E821	E831	E841	E851	E861	FA18	FE38	FE4C	



UNICODE3.0 字符区

---	#	%	5	E	U	e	u								
FE4D	FE5F	FF05	FF15	FF25	FF35	FF45	FF55								
---	&	&	6	F	V	f	v								
FE4E	FE60	FF06	FF16	FF26	FF36	FF46	FF56								
---	✱	'	7	G	W	g	w								
FE4F	FE61	FF07	FF17	FF27	FF37	FF47	FF57								
,	+	(	8	H	X	h	x								
FE50	FE62	FF08	FF18	FF28	FF38	FF48	FF58								
,	-	)	9	I	Y	i	y								
FE51	FE63	FF09	FF19	FF29	FF39	FF49	FF59								
.	<	✱	:	J	Z	j	z								
FE52	FE64	FF0A	FF1A	FF2A	FF3A	FF4A	FF5A								
;	>	+	;	K	[	k	{								
FE54	FE65	FF0B	FF1B	FF2B	FF3B	FF4B	FF5B								
:	=	,	<	L	\	l									
FE55	FE66	FF0C	FF1C	FF2C	FF3C	FF4C	FF5C								
?	\	-	=	M	]	m	}								
FE56	FE68	FF0D	FF1D	FF2D	FF3D	FF4D	FF5D								
!	\$	.	>	N	^	n	~								
FE57	FE69	FF0E	FF1E	FF2E	FF3E	FF4E	FF5E								
(	%	/	?	O	_	o	Ø								
FE59	FE6A	FF0F	FF1F	FF2F	FF3F	FF4F	FFE0								
)	@	O	@	P	`	p	£								
FE5A	FE6B	FF10	FF20	FF30	FF40	FF50	FFE1								
{	!	1	A	Q	a	q	—								
FE5B	FF01	FF11	FF21	FF31	FF41	FF51	FFE2								
}	"	2	B	R	b	r	—								
FE5C	FF02	FF12	FF22	FF32	FF42	FF52	FFE3								
(	#	3	C	S	c	s	!								
FE5D	FF03	FF13	FF23	FF33	FF43	FF53	FFE4								
)	\$	4	D	T	d	t	¥								
FE5E	FF04	FF14	FF24	FF34	FF44	FF54	FFE5								



8.2 Unicode 字符区字符

Unicode 字符区共收录 拉丁文系 (LATIN)、希腊文系 (GREEK)、西里尔文系 (CYRILLIC)，共计收录字符 456 个。阿拉伯文系 (ARABIC)，共计收录字符 250 个。

8.2.1 8×16 点拉丁文系 (376 字符)

Unicode 字符区-拉丁文系的内码范围为 00A0~0217 共计收录 376 个字符。

*说明：由于拉丁文系 (BASIC LATIN) 的内码范围 0020~007E 与基本 ASCII 编码一致 (可以共用)，因此未列入 Unicode 字符区-拉丁文系中。

Unicode 字符区-拉丁文系

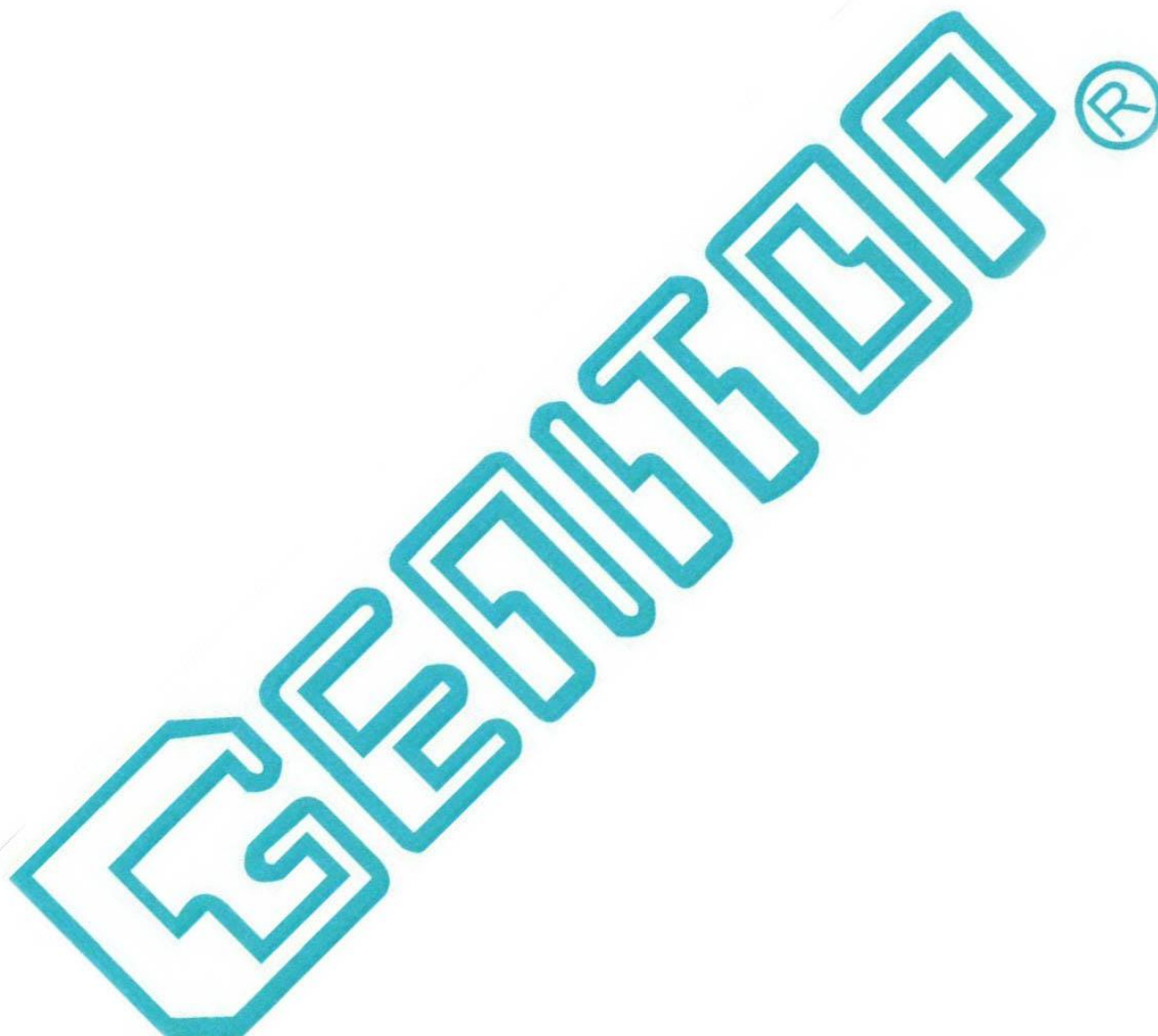
00	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
A		¡	¢	£	¤	¥	¦	§	¨	©	ª	«	¬	­	®	¯
B	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
C	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
D	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
E	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
F	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ

01	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	Ā ā	Ă ă	Ą ą	Ć ć	Ĉ ĉ	Ċ ċ	Č č	Ď ě	Đ đ	Ē ē	Ĕ ĕ	Ė ė	Ĝ ĝ	Ğ ğ	Ĥ ĥ	Ħ ħ
1	Ĭ ĭ	Ĵ ĵ	Ķ ķ	Ļ ļ	Ł ł	Ń ń	Ņ ņ	Ň ň	Ŋ ŋ	Ō ō	Ŏ ŏ	Œ œ	Ŕ ŕ	Ŗ ŗ	Š š	Ŝ ŝ
2	Ȣ ȣ	Ȥ ȥ	Ȧ ȧ	Ȩ ȩ	Ȫ ȫ	Ȭ ȭ	Ȯ ȯ	Ȱ ȱ	Ȳ ȳ	ȴ ȵ	ȶ ȷ	ȸ ȹ	Ⱥ Ȼ	Ƚ Ⱦ	ȿ ȿ	ȿ ȿ
3	ȼ Ƚ	Ⱦ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ
4	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ
5	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ
6	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ
7	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ



01	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	Ȣ ȣ	Ȥ ȥ	Ȧ ȧ	Ȩ ȩ	Ȫ ȫ	Ȭ ȭ	Ȯ ȯ	Ȱ ȱ	Ȳ ȳ	ȴ ȵ	ȶ ȷ	ȸ ȹ	Ⱥ Ȼ	Ƚ Ⱦ	ȿ ȿ	ȿ ȿ
9	ȼ Ƚ	Ⱦ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ
A	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ
B	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ
C	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ
D	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ
E	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ
F	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ	ȿ ȿ

02	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	Ä	ä	Â	â	Ë	ë	Ê	ê	Ï	ï	Î	î	Ö	ö	Ô	ô
1	Ř	ř	Ŕ	ŕ	Ů	ů	Ů	ů								



8.2.2 8×16 点西里尔文系（250 字符）

Unicode 字符区-希腊文系的内码范围为 0400~04F9 共计收录 250 个字符。

Unicode 字符区-西里尔文系

04	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		Ё	Ђ	Ѓ	Є	Ѕ	І	Ї	Ј	Љ	Њ	Ћ	Ќ	Й	Ў	Ц
1	А	Б	В	Г	Д	Е	Ж	З	И	Й	К	Л	М	Н	О	П
2	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э	Ю	Я
3	а	б	в	г	д	е	ж	з	и	й	к	л	м	н	о	п
4	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э	ю	я
5		ё	ђ	ѓ	є	ѕ	і	ї	ј	љ	њ	ћ	ќ		џ	џ
6	Ѡ	ѡ	Ѣ	ѣ	Ѥ	ѥ	Ѧ	ѧ	Ѩ	ѩ	Ѫ	ѫ	Ѭ	ѭ	Ѯ	ѯ
7	Ѱ	ѱ	Ѳ	ѳ	Ѵ	ѵ	Ѷ	ѷ	Ѹ	ѹ	Ѻ	ѻ	Ѽ	ѽ	Ѿ	ѿ



04	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	Q	Q	×	Г	Г	Г	Г									
9	Г	Г	F	f	Б	Б	Ж	Ж	Э	Э	К	к	К	к	К	к
A	К	к	Н	н	Н	н	Ь	ь	Q	Q	Q	Q	Т	т	У	у
B	Ң	Ң	Х	х	Ц	ц	Ч	ч	Ч	ч	h	h	Ө	ө	Ө	ө
C	І	Ж	Ж	К	К			Н	н			Ч	ч			
D	Ä	ä	Ä	ä	Æ	æ	Ё	ё	Ө	ө	Ө	ө	Ж	ж	Э	э
E	Э	э	Й	й	Й	й	Ö	ö	Ө	ө	Ө	ө			У	у
F	У	у	У	у	Ч	ч			Ы	ы						



8.2.3 8×16 点希腊文系（96 字符）

Unicode 字符区-希腊文系的内码范围为 0370~03CF 共计收录 96 个字符。

Unicode 字符区-希腊文系

03	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
7					'	,					,					
8					'	ˆ	Α	·	Ε	Η	Ι		Ο		Τ	Ω
9	ι	Α	Β	Γ	Δ	Ε	Ζ	Η	Θ	Ι	Κ	Λ	Μ	Ν	Ξ	Ο
A	Π	Ρ		Σ	Τ	Υ	Φ	Χ	Ψ	Ω	Ϊ	Ͳ	Ό	Έ	Ή	ί
B	ϐ	α	β	γ	δ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο
C	π	ρ	ς	σ	τ	υ	φ	χ	ψ	ω	ϊ	ϋ	ό	ύ	ώ	

8.3 8×16 点特殊字符（64 字符）

内码组成为 ACA1~ACDF 共计 64 个字符

AC	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
A		☺	☹	♥	♣	♠	♣	♠	♣	♠	♣	♠	♣	♠	♣	♠
B	♠	♣	♠	♣	♠	♣	♠	♣	♠	♣	♠	♣	♠	♣	♠	♣
C	♠	♣	♠	♣	♠	♣	♠	♣	♠	♣	♠	♣	♠	♣	♠	♣
D	°	∞	∅	∈	∩	≡	≥	≤	≈	√	ⁿ	€	\$	∫	∫	÷

8.4 UNICODE3.0 字符区对照表

该表描述了字符区离散字符所对应的码位，根据该表进行查询，可以得到该码位在字符区中的字序位置，从而计算出相应地址。

按照 WORD 方式进行排列的字符对应表：

unsigned int ZFTABLE[1088]={

0xa1,0xa2,0xa3,0xa4,0xa5,0xa6,0xa7,0xa8,
0xa9,0xaa,0xab,0xac,0xad,0xae,0xaf,0xb0,
0xb1,0xb2,0xb3,0xb4,0xb5,0xb6,0xb7,0xb8,
0xb9,0xba,0xbb,0xbc,0xbd,0xbe,0xbf,0xc0,
0xc1,0xc2,0xc3,0xc4,0xc5,0xc6,0xc7,0xc8,
0xc9,0xca,0xcb,0xcc,0xcd,0xce,0xcf,0xd0,
0xd1,0xd2,0xd3,0xd4,0xd5,0xd6,0xd7,0xd8,
0xd9,0xda,0xdb,0xdc,0xdd,0xde,0xdf,0xe0,
0xe1,0xe2,0xe3,0xe4,0xe5,0xe6,0xe7,0xe8,
0xe9,0xea,0xeb,0xec,0xed,0xee,0xef,0xf0,
0xf1,0xf2,0xf3,0xf4,0xf5,0xf6,0xf7,0xf8,
0xf9,0xfa,0xfb,0xfc,0xfd,0xfe,0xff,0x101,
0x113,0x11b,0x12b,0x144,0x148,0x14d,0x152,0x153,
0x160,0x161,0x16b,0x178,0x192,0x1ce,0x1d0,0x1d2,
0x1d4,0x1d6,0x1d8,0x1da,0x1dc,0x251,0x261,0x2c6,
0x2c7,0x2c9,0x2ca,0x2cb,0x2d9,0x2dc,0x391,0x392,
0x393,0x394,0x395,0x396,0x397,0x398,0x399,0x39a,
0x39b,0x39c,0x39d,0x39e,0x39f,0x3a0,0x3a1,0x3a3,
0x3a4,0x3a5,0x3a6,0x3a7,0x3a8,0x3a9,0x3b1,0x3b2,
0x3b3,0x3b4,0x3b5,0x3b6,0x3b7,0x3b8,0x3b9,0x3ba,
0x3bb,0x3bc,0x3bd,0x3be,0x3bf,0x3c0,0x3c1,0x3c3,
0x3c4,0x3c5,0x3c6,0x3c7,0x3c8,0x3c9,0x401,0x410,
0x411,0x412,0x413,0x414,0x415,0x416,0x417,0x418,
0x419,0x41a,0x41b,0x41c,0x41d,0x41e,0x41f,0x420,
0x421,0x422,0x423,0x424,0x425,0x426,0x427,0x428,
0x429,0x42a,0x42b,0x42c,0x42d,0x42e,0x42f,0x430,
0x431,0x432,0x433,0x434,0x435,0x436,0x437,0x438,
0x439,0x43a,0x43b,0x43c,0x43d,0x43e,0x43f,0x440,
0x441,0x442,0x443,0x444,0x445,0x446,0x447,0x448,
0x449,0x44a,0x44b,0x44c,0x44d,0x44e,0x44f,0x451,
0x2010,0x2013,0x2014,0x2015,0x2016,0x2018,0x2019,0x201a,
0x201c,0x201d,0x201e,0x2020,0x2021,0x2022,0x2025,0x2026,
0x2030,0x2032,0x2033,0x2035,0x2039,0x203a,0x203b,0x20ac,
0x2103,0x2105,0x2109,0x2116,0x2121,0x2122,0x2160,0x2161,
0x2162,0x2163,0x2164,0x2165,0x2166,0x2167,0x2168,0x2169,
0x216a,0x216b,0x2170,0x2171,0x2172,0x2173,0x2174,0x2175,
0x2176,0x2177,0x2178,0x2179,0x2190,0x2191,0x2192,0x2193,
0x2196,0x2197,0x2198,0x2199,0x2208,0x220f,0x2211,0x2215,
0x221a,0x221d,0x221e,0x221f,0x2220,0x2223,0x2225,0x2227,

0x2228,0x2229,0x222a,0x222b,0x222e,0x2234,0x2235,0x2236,

0x2237,0x223d,0x2248,0x224c,0x2252,0x2260,0x2261,0x2264,
0x2265,0x2266,0x2267,0x226e,0x226f,0x2295,0x2299,0x22a5,
0x22bf,0x2312,0x2460,0x2461,0x2462,0x2463,0x2464,0x2465,
0x2466,0x2467,0x2468,0x2469,0x2474,0x2475,0x2476,0x2477,
0x2478,0x2479,0x247a,0x247b,0x247c,0x247d,0x247e,0x247f,
0x2480,0x2481,0x2482,0x2483,0x2484,0x2485,0x2486,0x2487,
0x2488,0x2489,0x248a,0x248b,0x248c,0x248d,0x248e,0x248f,
0x2490,0x2491,0x2492,0x2493,0x2494,0x2495,0x2496,0x2497,
0x2498,0x2499,0x249a,0x249b,0x2500,0x2501,0x2502,0x2503,
0x2504,0x2505,0x2506,0x2507,0x2508,0x2509,0x250a,0x250b,
0x250c,0x250d,0x250e,0x250f,0x2510,0x2511,0x2512,0x2513,
0x2514,0x2515,0x2516,0x2517,0x2518,0x2519,0x251a,0x251b,
0x251c,0x251d,0x251e,0x251f,0x2520,0x2521,0x2522,0x2523,
0x2524,0x2525,0x2526,0x2527,0x2528,0x2529,0x252a,0x252b,
0x252c,0x252d,0x252e,0x252f,0x2530,0x2531,0x2532,0x2533,
0x2534,0x2535,0x2536,0x2537,0x2538,0x2539,0x253a,0x253b,
0x253c,0x253d,0x253e,0x253f,0x2540,0x2541,0x2542,0x2543,
0x2544,0x2545,0x2546,0x2547,0x2548,0x2549,0x254a,0x254b,
0x2550,0x2551,0x2552,0x2553,0x2554,0x2555,0x2556,0x2557,
0x2558,0x2559,0x255a,0x255b,0x255c,0x255d,0x255e,0x255f,
0x2560,0x2561,0x2562,0x2563,0x2564,0x2565,0x2566,0x2567,
0x2568,0x2569,0x256a,0x256b,0x256c,0x256d,0x256e,0x256f,
0x2570,0x2571,0x2572,0x2573,0x2581,0x2582,0x2583,0x2584,
0x2585,0x2586,0x2587,0x2588,0x2589,0x258a,0x258b,0x258c,
0x258d,0x258e,0x258f,0x2593,0x2594,0x2595,0x25a0,0x25a1,
0x25b2,0x25b3,0x25bc,0x25bd,0x25c6,0x25c7,0x25cb,0x25ce,
0x25cf,0x25e2,0x25e3,0x25e4,0x25e5,0x2605,0x2606,0x2609,
0x2640,0x2642,0x3000,0x3001,0x3002,0x3003,0x3005,0x3006,
0x3007,0x3008,0x3009,0x300a,0x300b,0x300c,0x300d,0x300e,
0x300f,0x3010,0x3011,0x3012,0x3013,0x3014,0x3015,0x3016,
0x3017,0x301d,0x301e,0x3021,0x3022,0x3023,0x3024,0x3025,
0x3026,0x3027,0x3028,0x3029,0x303e,0x3041,0x3042,0x3043,
0x3044,0x3045,0x3046,0x3047,0x3048,0x3049,0x304a,0x304b,
0x304c,0x304d,0x304e,0x304f,0x3050,0x3051,0x3052,0x3053,
0x3054,0x3055,0x3056,0x3057,0x3058,0x3059,0x305a,0x305b,
0x305c,0x305d,0x305e,0x305f,0x3060,0x3061,0x3062,0x3063,
0x3064,0x3065,0x3066,0x3067,0x3068,0x3069,0x306a,0x306b,
0x306c,0x306d,0x306e,0x306f,0x3070,0x3071,0x3072,0x3073,
0x3074,0x3075,0x3076,0x3077,0x3078,0x3079,0x307a,0x307b,
0x307c,0x307d,0x307e,0x307f,0x3080,0x3081,0x3082,0x3083,
0x3084,0x3085,0x3086,0x3087,0x3088,0x3089,0x308a,0x308b,
0x308c,0x308d,0x308e,0x308f,0x3090,0x3091,0x3092,0x3093,
0x309b,0x309c,0x309d,0x309e,0x30a1,0x30a2,0x30a3,0x30a4,

0x30a5,0x30a6,0x30a7,0x30a8,0x30a9,0x30aa,0x30ab,0x30ac,

0x30ad,0x30ae,0x30af,0x30b0,0x30b1,0x30b2,0x30b3,0x30b4,
0x30b5,0x30b6,0x30b7,0x30b8,0x30b9,0x30ba,0x30bb,0x30bc,
0x30bd,0x30be,0x30bf,0x30c0,0x30c1,0x30c2,0x30c3,0x30c4,
0x30c5,0x30c6,0x30c7,0x30c8,0x30c9,0x30ca,0x30cb,0x30cc,
0x30cd,0x30ce,0x30cf,0x30d0,0x30d1,0x30d2,0x30d3,0x30d4,
0x30d5,0x30d6,0x30d7,0x30d8,0x30d9,0x30da,0x30db,0x30dc,
0x30dd,0x30de,0x30df,0x30e0,0x30e1,0x30e2,0x30e3,0x30e4,
0x30e5,0x30e6,0x30e7,0x30e8,0x30e9,0x30ea,0x30eb,0x30ec,
0x30ed,0x30ee,0x30ef,0x30f0,0x30f1,0x30f2,0x30f3,0x30f4,
0x30f5,0x30f6,0x30fc,0x30fd,0x30fe,0x3105,0x3106,0x3107,
0x3108,0x3109,0x310a,0x310b,0x310c,0x310d,0x310e,0x310f,
0x3110,0x3111,0x3112,0x3113,0x3114,0x3115,0x3116,0x3117,
0x3118,0x3119,0x311a,0x311b,0x311c,0x311d,0x311e,0x311f,
0x3120,0x3121,0x3122,0x3123,0x3124,0x3125,0x3126,0x3127,
0x3128,0x3129,0x3220,0x3221,0x3222,0x3223,0x3224,0x3225,
0x3226,0x3227,0x3228,0x3229,0x3231,0x32a3,0x338e,0x338f,
0x339c,0x339d,0x339e,0x33a1,0x33c4,0x33ce,0x33d1,0x33d2,
0x33d5,0xe76c,0xe78d,0xe78e,0xe78f,0xe790,0xe791,0xe792,
0xe793,0xe794,0xe795,0xe796,0xe7c7,0xe7c8,0xe7e7,0xe7e8,
0xe7e9,0xe7ea,0xe7eb,0xe7ec,0xe7ed,0xe7ee,0xe7ef,0xe7f0,
0xe7f1,0xe7f2,0xe7f3,0xe815,0xe816,0xe817,0xe818,0xe819,
0xe81a,0xe81b,0xe81c,0xe81d,0xe81e,0xe81f,0xe820,0xe821,
0xe822,0xe823,0xe824,0xe825,0xe826,0xe827,0xe828,0xe829,
0xe82a,0xe82b,0xe82c,0xe82d,0xe82e,0xe82f,0xe830,0xe831,
0xe832,0xe833,0xe834,0xe835,0xe836,0xe837,0xe838,0xe839,
0xe83a,0xe83b,0xe83c,0xe83d,0xe83e,0xe83f,0xe840,0xe841,
0xe842,0xe843,0xe844,0xe845,0xe846,0xe847,0xe848,0xe849,
0xe84a,0xe84b,0xe84c,0xe84d,0xe84e,0xe84f,0xe850,0xe851,
0xe852,0xe853,0xe854,0xe855,0xe856,0xe857,0xe858,0xe859,
0xe85a,0xe85b,0xe85c,0xe85d,0xe85e,0xe85f,0xe860,0xe861,
0xe862,0xe863,0xe864,0xf92c,0xf979,0xf995,0xf9e7,0xf9f1,
0xfa0c,0xfa0d,0xfa0e,0xfa0f,0xfa11,0xfa13,0xfa14,0xfa18,
0xfa1f,0xfa20,0xfa21,0xfa23,0xfa24,0xfa27,0xfa28,0xfa29,
0xfe30,0xfe31,0xfe33,0xfe34,0xfe35,0xfe36,0xfe37,0xfe38,
0xfe39,0xfe3a,0xfe3b,0xfe3c,0xfe3d,0xfe3e,0xfe3f,0xfe40,
0xfe41,0xfe42,0xfe43,0xfe44,0xfe49,0xfe4a,0xfe4b,0xfe4c,
0xfe4d,0xfe4e,0xfe4f,0xfe50,0xfe51,0xfe52,0xfe54,0xfe55,
0xfe56,0xfe57,0xfe59,0xfe5a,0xfe5b,0xfe5c,0xfe5d,0xfe5e,
0xfe5f,0xfe60,0xfe61,0xfe62,0xfe63,0xfe64,0xfe65,0xfe66,
0xfe68,0xfe69,0xfe6a,0xfe6b,0xff01,0xff02,0xff03,0xff04,
0xff05,0xff06,0xff07,0xff08,0xff09,0xff0a,0xff0b,0xff0c,
0xff0d,0xff0e,0xff0f,0xff10,0xff11,0xff12,0xff13,0xff14,
0xff15,0xff16,0xff17,0xff18,0xff19,0xff1a,0xff1b,0xff1c,

0xff1d,0xff1e,0xff1f,0xff20,0xff21,0xff22,0xff23,0xff24,

0xff25,0xff26,0xff27,0xff28,0xff29,0xff2a,0xff2b,0xff2c,
0xff2d,0xff2e,0xff2f,0xff30,0xff31,0xff32,0xff33,0xff34,
0xff35,0xff36,0xff37,0xff38,0xff39,0xff3a,0xff3b,0xff3c,
0xff3d,0xff3e,0xff3f,0xff40,0xff41,0xff42,0xff43,0xff44,
0xff45,0xff46,0xff47,0xff48,0xff49,0xff4a,0xff4b,0xff4c,
0xff4d,0xff4e,0xff4f,0xff50,0xff51,0xff52,0xff53,0xff54,
0xff55,0xff56,0xff57,0xff58,0xff59,0xff5a,0xff5b,0xff5c,
0xff5d,0xff5e,0xffe0,0xffe1,0xffe2,0xffe3,0xffe4,0xffe5

};

按照 BYTE 方式进行排列的字符对应表:

unsigned char ZFTABLE[2176]={

0x00,0xa1,0x00,0xa2,0x00,0xa3,0x00,0xa4,0x00,0xa5,0x00,0xa6,0x00,0xa7,0x00,0xa8,
0x00,0xa9,0x00,0xaa,0x00,0xab,0x00,0xac,0x00,0xad,0x00,0xae,0x00,0xaf,0x00,0xb0,
0x00,0xb1,0x00,0xb2,0x00,0xb3,0x00,0xb4,0x00,0xb5,0x00,0xb6,0x00,0xb7,0x00,0xb8,
0x00,0xb9,0x00,0xba,0x00,0xbb,0x00,0xbc,0x00,0xbd,0x00,0xbe,0x00,0xbf,0x00,0xc0,
0x00,0xc1,0x00,0xc2,0x00,0xc3,0x00,0xc4,0x00,0xc5,0x00,0xc6,0x00,0xc7,0x00,0xc8,
0x00,0xc9,0x00,0xca,0x00,0xcb,0x00,0xcc,0x00,0xcd,0x00,0xce,0x00,0xcf,0x00,0xd0,
0x00,0xd1,0x00,0xd2,0x00,0xd3,0x00,0xd4,0x00,0xd5,0x00,0xd6,0x00,0xd7,0x00,0xd8,
0x00,0xd9,0x00,0xda,0x00,0xdb,0x00,0xdc,0x00,0xdd,0x00,0xde,0x00,0xdf,0x00,0xe0,
0x00,0xe1,0x00,0xe2,0x00,0xe3,0x00,0xe4,0x00,0xe5,0x00,0xe6,0x00,0xe7,0x00,0xe8,
0x00,0xe9,0x00,0xea,0x00,0xeb,0x00,0xec,0x00,0xed,0x00,0xee,0x00,0xef,0x00,0xf0,
0x00,0xf1,0x00,0xf2,0x00,0xf3,0x00,0xf4,0x00,0xf5,0x00,0xf6,0x00,0xf7,0x00,0xf8,
0x00,0xf9,0x00,0xfa,0x00,0xfb,0x00,0xfc,0x00,0xfd,0x00,0xfe,0x00,0xff,0x01,0x01,
0x01,0x13,0x01,0x1b,0x01,0x2b,0x01,0x44,0x01,0x48,0x01,0x4d,0x01,0x52,0x01,0x53,
0x01,0x60,0x01,0x61,0x01,0x6b,0x01,0x78,0x01,0x92,0x01,0xce,0x01,0xd0,0x01,0xd2,
0x01,0xd4,0x01,0xd6,0x01,0xd8,0x01,0xda,0x01,0xdc,0x02,0x51,0x02,0x61,0x02,0xc6,
0x02,0xc7,0x02,0xc9,0x02,0xca,0x02,0xcb,0x02,0xd9,0x02,0xdc,0x03,0x91,0x03,0x92,
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0xff,0x55,0xff,0x56,0xff,0x57,0xff,0x58,0xff,0x59,0xff,0x5a,0xff,0x5b,0xff,0x5c,
0xff,0x5d,0xff,0x5e,0xff,0xe0,0xff,0xe1,0xff,0xe2,0xff,0xe3,0xff,0xe4,0xff,0xe5 };