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瑞萨电子公司

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# H8/300L Super Low Power 系列

## ASCII 码的小写英文字母转换为大写英文字母

### 要点

将用 ASCII 码表示的小写英文字母转换为大写英文字母。

### 动作确认器件

H8/38024

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## 1. 参数

	内容	保存位置	数据长度（字节）
输入	小写英文字母（ASCII 码）	R0L	1
输出	大写英文字母（ASCII 码）	R0L	1

## 2. 内部寄存器变化和标志变化

R0	R1
×	○
R2	R3
•	•
R4	R5
•	•
R6	R7
•	•

I	U	H	U
•	•	×	•
N	Z	V	C
×	×	×	×

•：不变，×：不定，○：结果

## 3. 程序设计

程序存储器（字节）
14
数据存储器（字节）
0
堆栈（字节）
0
时钟周期数
24
重入
可
再定位
可
中途中断
可

## 4. 说明

### 4.1 功能

(1) 参数的详细内容如下：

R0L：设定小写英文字母 ASCII 码。执行软件 TPR 后，设定大写英文字母 ASCII 码。

(2) 软件 TPR 的执行例子如图 6-1 所示。

一旦如①设定输入参数的小写英文字母 ASCII 码‘a’（H'61），就如②转换为大写英文字母 ASCII 码‘A’（H'41），并将结果设定到 R0L。

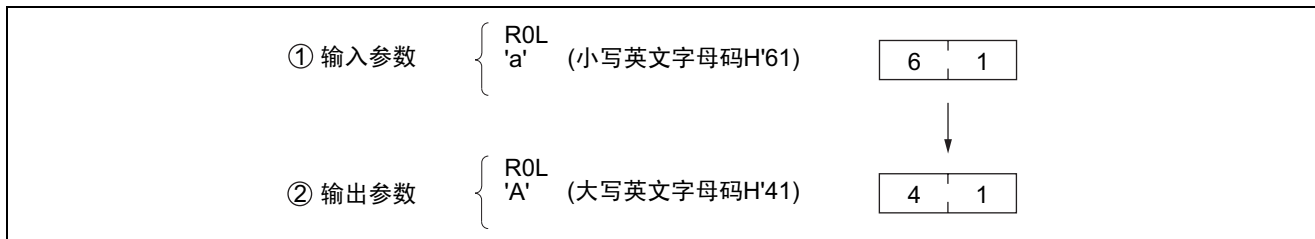


图 6-1 软件 TPR 的执行例子

### 4.2 使用时的注意

必须给 R0L 设定小写英文字母 ASCII 码。

如果设定小写英文字母以外的 ASCII 码，R0L 就保存输入数据。

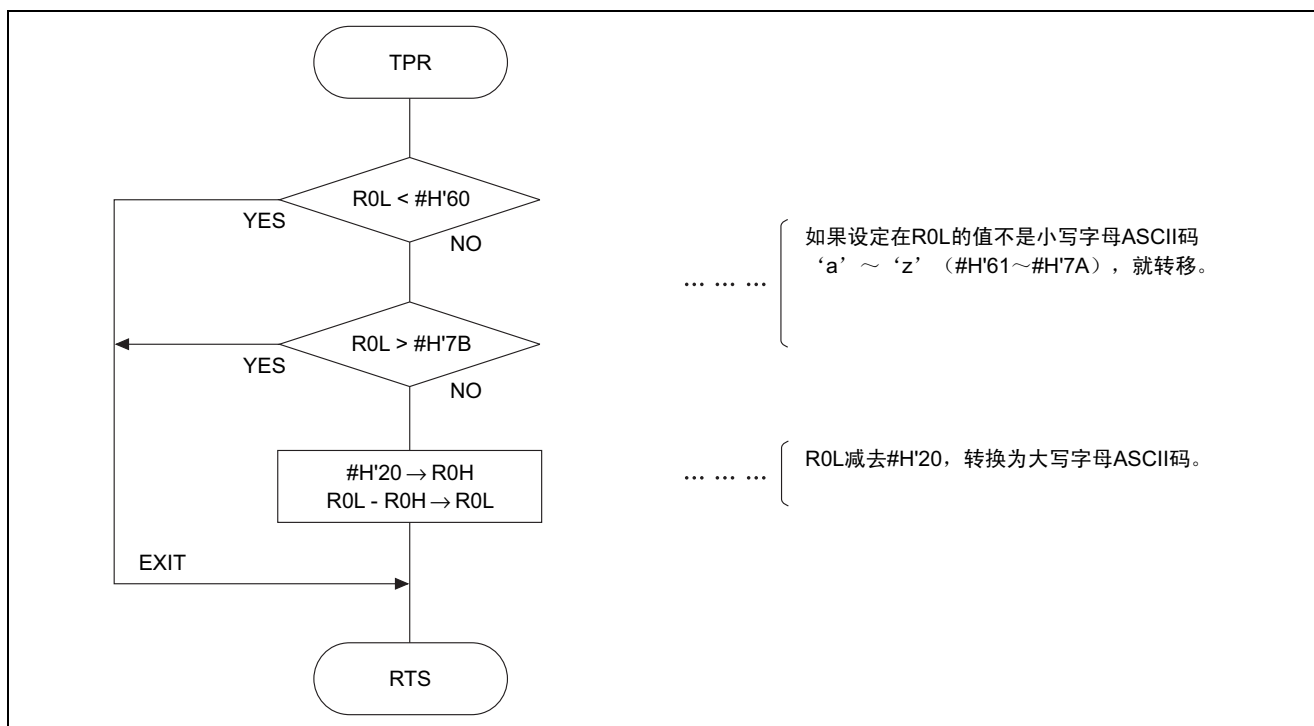
### 4.3 数据存储器的说明

软件 TPR 不使用数据存储器。

设定英文小写字母 ASCII 码，子程序调用软件 TPR。

WORK1	.RES. B	1	...	...	确保用户程序设定小写英文字母ASCII码的数据存储区。
WORK2	.RES. B	1	...	...	确保将大写英文字母ASCII码设定到用户程序的数据存储区。
	...		...	...	
	MOV. B	@WORK1, R0L	...	...	将用户程序设定的小写英文字母ASCII码设定到输入参数。
			...	...	
	JSR	@TPR	...	...	子程序调用软件TPR。
			...	...	
	MOV. B	R0, @WORK2	...	...	将置在输出参数中的大写英文字母保存到程序的数据存储区。

- (1) 使用比较指令 (CMP.B)，判断设定在 R0L 中的输入数据是否为小写英文字母 ASCII 码。
- (2) 小写英文字母 ASCII 码减去 H'20，转换为大写英文字母 ASCII 码。
- (3) 如果输入数据不是小写英文字母 ASCII 码，就保存数据，并结束处理。



## 6. 程序清单

```

*** H8/300 ASSEMBLER   VER 1.0B **      08/18/92 09:47:44
PROGRAM NAME =
1                                     ;*****
2                                     ;*
3                                     ;* 00 - NAME      :CHANGE ASCII CODE LOWERCASE
4                                     ;*                               TO UPPERCASE (TPR)
5                                     ;*
6                                     ;*****
7                                     ;*
8                                     ;* ENTRY          :R0L          (ASCII CODE LOWERCASE)
9                                     ;*
10                                    ;* RETURN          :R0L          (ASCII CODE UPPERCASE)
11                                    ;*
12                                    ;*****
13                                    ;
14 TPR_code C 0000                  .SECTION      TPR_code, CODE, ALIGN=2
15                                    .EXPORT      TPR
16                                    ;
17 TPR_code C 00000000 TPR .EQU $          ;Entry point
18 TPR_code C 0000 A861             CMP.B      #H'61, R0L
19 TPR_code C 0002 4508             BCS        EXIT          ;Branch if R0L<#H'60
20 TPR_code C 0004 A87A             CMP.B      #H'7A, R0L
21 TPR_code C 0006 4204             BHI        EXIT          ;Branch if R0L>#H'7B
22 TPR_code C 0008 F020             MOV.B      #H'20, R0H
23 TPR_code C 000A 1808             SUB.B      R0H, R0L      ;Lowercase - #H'20 -> Uppercase
24 TPR_code C 000C             EXIT
25 TPR_code C 000C 5470             RTS
26                                    ;
27                                    .END
*****TOTAL ERRORS      0
*****TOTAL WARNINGS    0

```

修订记录

Rev.	发行日	修订内容	
		页	修订要点
1.00	2005.07.29	—	初版发行



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