

## 产品概观

TCY817F闪存系列为全新世代高性价比的语音芯片，具有 9bits 高性能 PWM/DAC 语音引擎。并且具备有多样化的容量型号选择，并内置有高精度起振器，毋需外部起振组件，外接组件少，让应用开发整体成本具有市场领先的优势。

## 功能概观

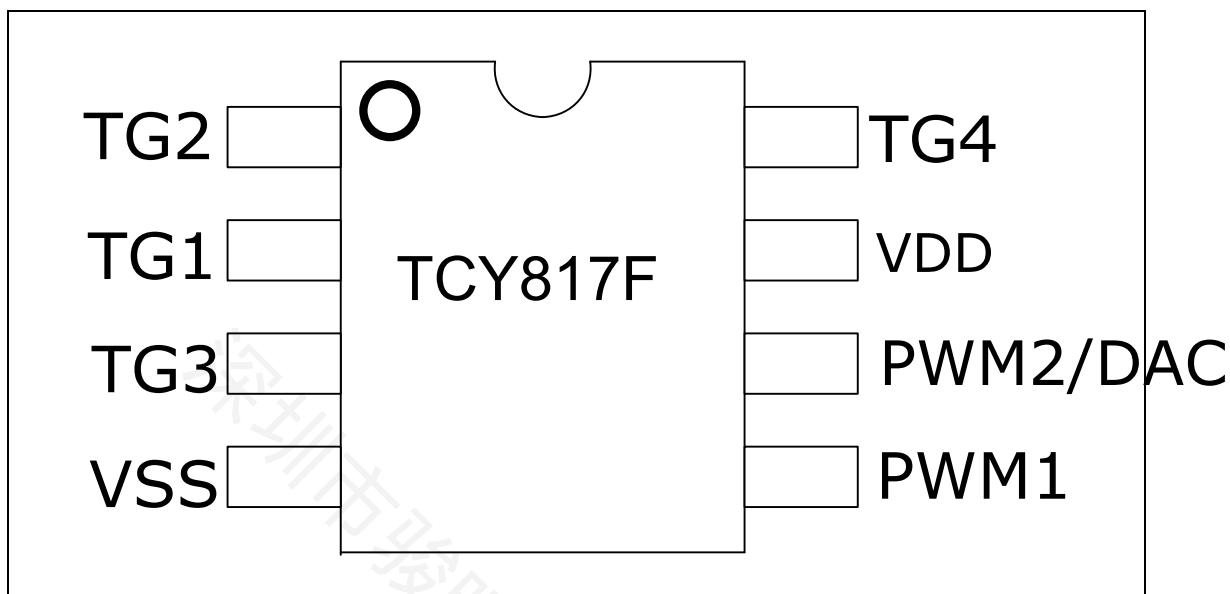
- 语音引擎：9bits PWM / 9bits DAC
- 可编辑阶数：3800 阶
- 可编辑群组数：63 组(最大)
- 开机执行群组：1 组
- 可放声音长度：  
170秒(TCY817F) 在 4bits 6K-Playrate 音质下
- 
- 可程序化接口触发型态
  - Re-triggered / Irre-triggered.
  - Level / Edge.
  - Hold / Un-hold.
  - Voice Repeat / One-time voice.
  - On/Off function.
- 选表式声音压缩编码引擎
  - 4bits / 5bits / 8bits / 9bits
- 内置单片机触发模式 SPI 接口
- 内置 RC 震荡起振回路，无须外部电路
- 宽工作电压：2.0~5.0V
- 工作温度：-20°C ~ 60°C (不计工作频率飘移)

- 简易编程功能
  - 工作寄存器写入
  - 工作寄存器进位
  - 工作寄存器比较分支
- 可程序化输出状态
  - 待机准位
  - 工作高准位
  - 工作低准位
  - 输出频闪
- 多样化播放速率选择
  - 3.1K / 3.2K / 3.3K / 3.5K / 3.7K / 3.8K
  - 4.0K / 4.2K / 4.4K / 4.6K / 4.8K
  - 5.0K / 5.3K / 5.6K
  - 6.0K / 6.4K / 6.8K
  - 7.4K / 8.0K / 8.7K / 9.6K / 10.6K / 12.0K
  - 13.7K / 16.0K / 19.2K / 24.0K / 32.0K

### Body overview 母体比较表

Body / 母体	Duration/预估秒数	IO counts / 接口数
TCY817F	170"@6K/4bits	4

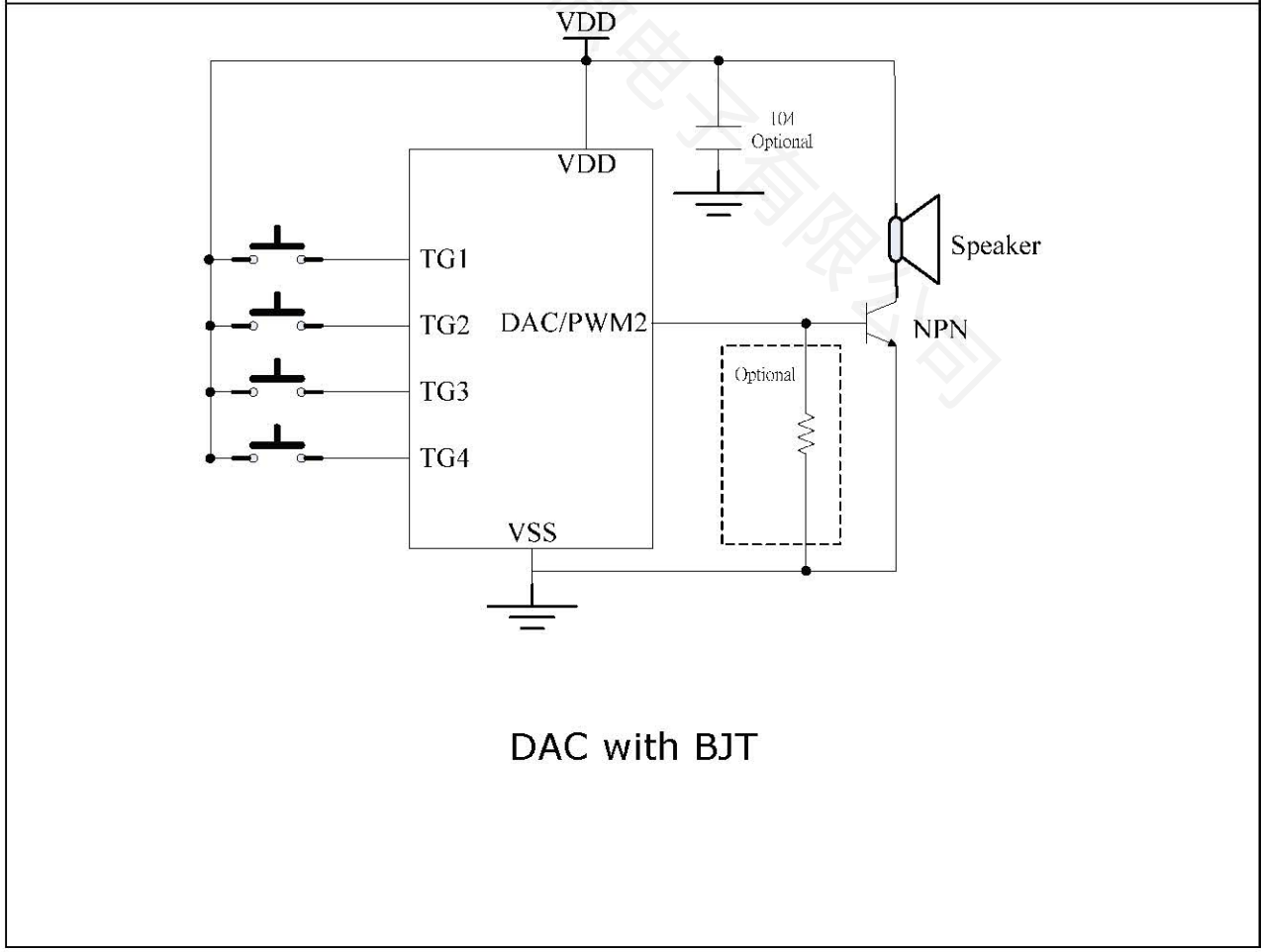
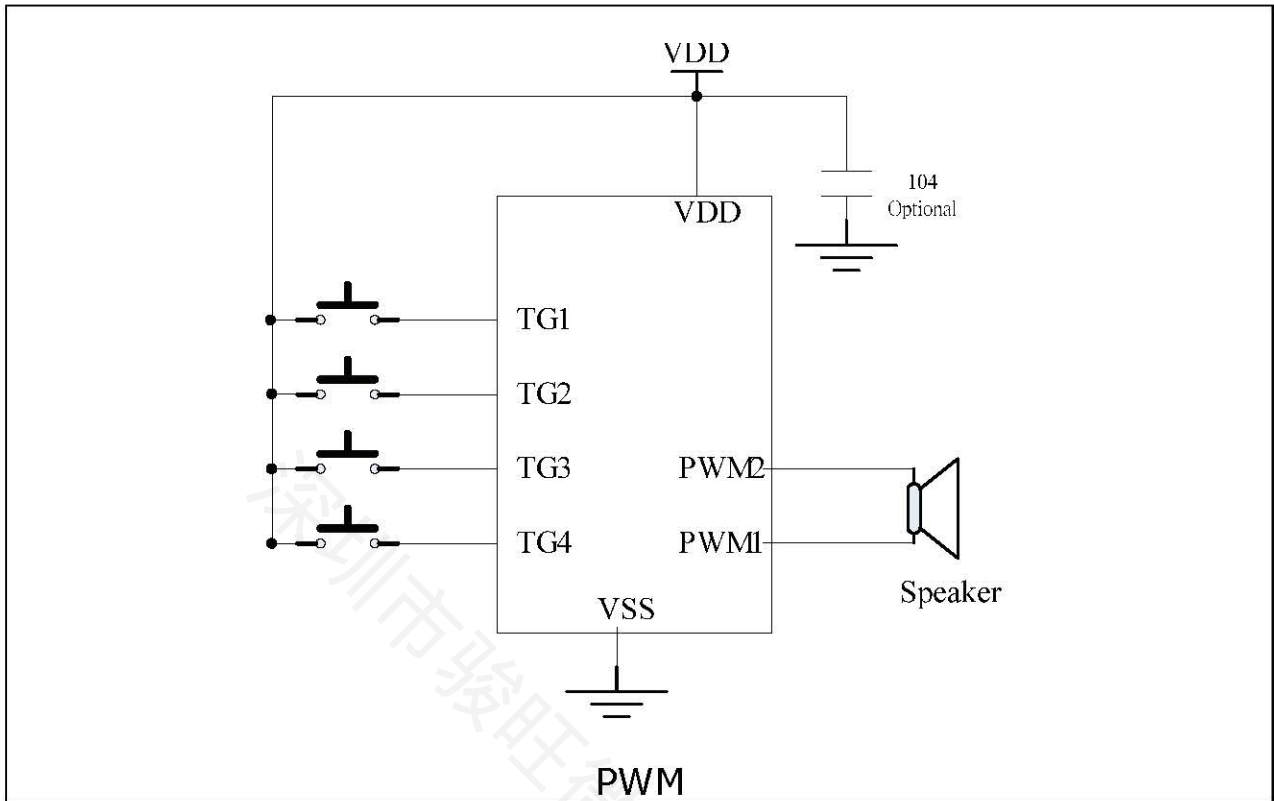
## 封装脚位图



## 脚位说明

Pin Name	Write pin	MCU Mode	Description
VDD	VDD	VDD	电源供应脚
VPP		VPP	内部电源脚
VSS	VSS	VSS	接地脚
PWM1	SCK	PWM1	PWM 脚
PWM2	PWM2	PWM2	PWM 脚/DAC 输出脚
TG1			TG1
TG2			TG2
TG3			TG3
TG4			TG4

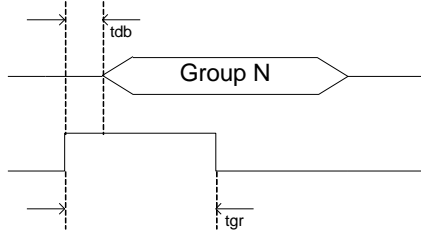
应用线路图



## ◆ Trigger Timing

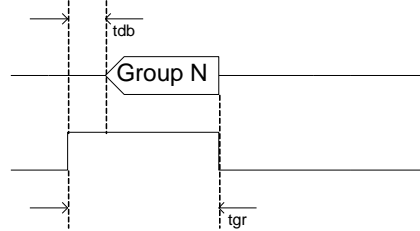
(a) Trigger Pulse Width < Group Length

Option Setting = Edge / Unhold



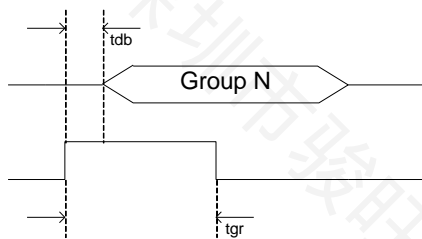
(b) Trigger Pulse Width < Group Length

Option Setting = Edge / Hold



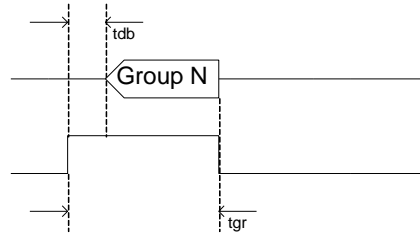
(c) Trigger Pulse Width < Group Length

Option Setting = Level / Unhold



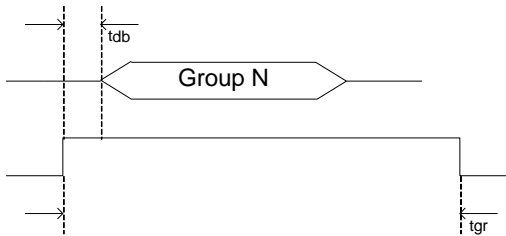
(d) Trigger Pulse Width < Group Length

Option Setting = Level / Hold



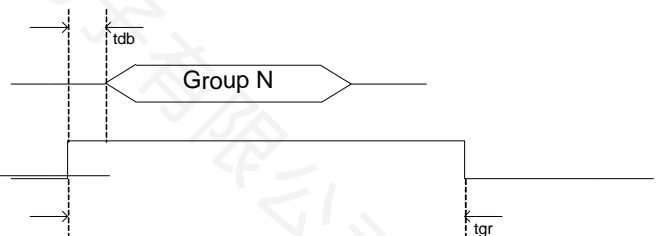
(e) Trigger Pulse Width > Group Length

Option Setting = Edge / Unhold



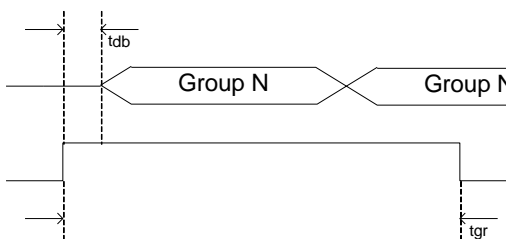
(f) Trigger Pulse Width > Group Length

Option Setting = Edge / Hold



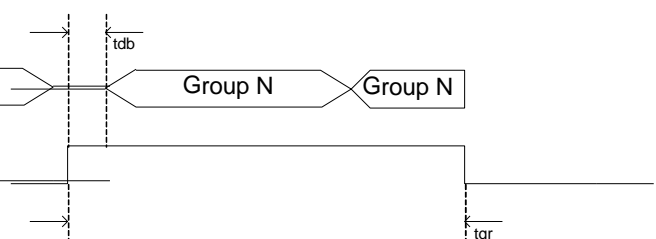
(g) Trigger Pulse Width > Group Length

Option Setting = Level / Unhold

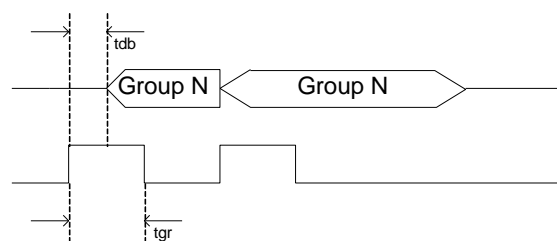


(h) Trigger Pulse Width > Group Length

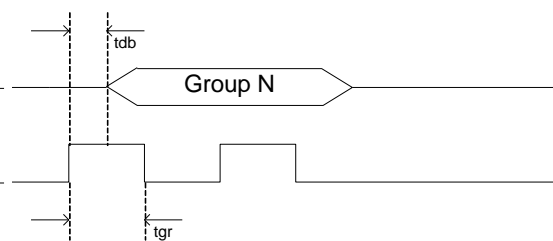
Option Setting = Level / Hold



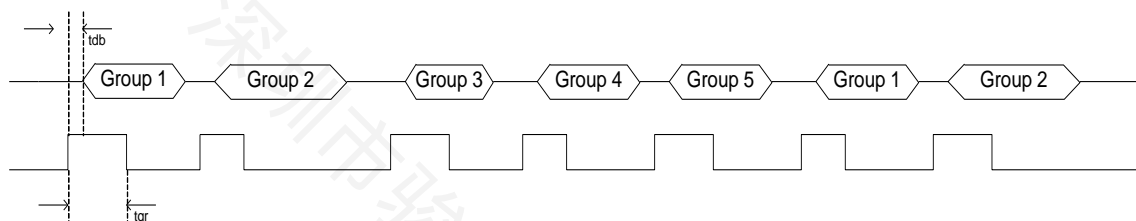
(i) Option Setting = Retrigger



(j) Option Setting = Irretrigger



(k) TG1 = Sequential Trigger & From Group1~Group5



## ◆ Trigger Voice Combination Example

Voice File	Description
Voice File A	Hello ( 1.5'')
Voice File B	Good Morning (3'')
Voice File C	John (1'')
Voice File D	Tom (1'')
Voice File E	Mary (1.5'')

Group1 = Step1 + Step 2

Group 2 = Step3 + Step 4 + Step 5

Group 3 = Step 6 + Step 7

Group1 = Hello John

Group 2= Hello Tom Good Morning

Group 3 = Good Morning Mary

Step1 = Voice File A

Step 2 = Voice File C

Step 3 = Voice File A

Step 4 = Voice File D

Step 5 = Voice File B

Step 6 = Voice File B

Step 7 = Voice File E

Total use 3 Group , 7 Steps

Voice duration= Hello + Good Morning + John + Tom + Mary

$$= 1.5'' + 3'' + 1'' + 1'' + 1.5''$$

$$= 8''$$

Total duration = 8'' ( 40''-8'' = 32'' space are free , can add more Voice File, If body=L5040 )

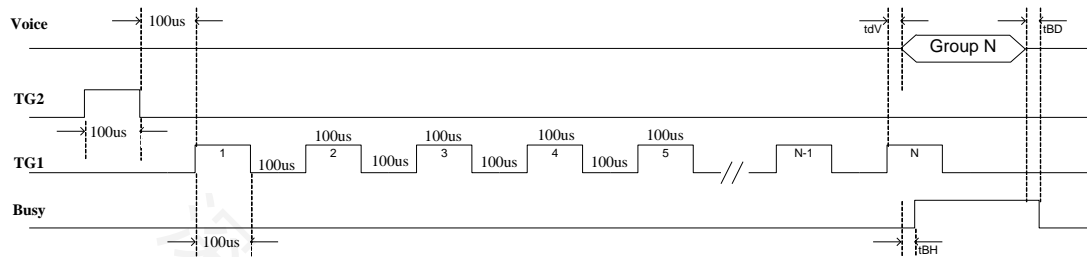
## ◆ Serial Mode Timing

TG1=Edge/Unhold/Retrigger

TG2=Reset PIN

※Tool: Controller Trigger

### ● PWM



## ◆ DC Characteristics

Symbol	Parameter	Condition	Min	Typ	Max	Unit
V <sub>OP</sub>	Operating Voltage		2.0		5.0	V
I <sub>sb</sub>	Standby current	LDO On				uA
		LDO OFF				uA
I <sub>OP</sub>	Operating Current	VDD=3V / No Load				uA
I <sub>OD</sub>	Output drive Current					mA
I <sub>OS</sub>	Output sink Current					mA
I <sub>ODPWM</sub>	PWM output drive Current					mA
I <sub>OSPWM</sub>	PWM output sink Current					mA



封装(Package Information)

Size Symbols	Min (mm)	Max (mm)	Size Symbols	Min (mm)	Max (mm)
A	1.80	5.00	C3	0.05	0.20
A1	0.356	0.456	C4	0.203	0.233
A2	1.27TYP		D	1.05TYP	
A3	0.345TYP		D1	0.40	0.80
B	3.80	4.00	R1	0.20TYP	
B1	5.80	6.20	R2	0.20TYP	
B2	5.00TYP		θ 1	17° TYP4	
C	1.30	1.60	θ 2	13° TYP4	
C1	0.55	0.65	θ 3	0° ~ 8°	
C2	0.55	0.65	θ 4	4° ~ 12°	

