

Features

- Only 37 Instructions to Learn
 - All single-cycle instructions except branches
- Operating Speed:
 - DC – 20 MHz oscillator/clock input
 - DC – 200 ns instruction cycle
- Interrupt Capability
- 8-Level Deep Hardware Stack
- Direct, Indirect, and Relative Addressing modes

Special Microcontroller Features

- Internal and External Oscillator Options
 - Precision Internal 4 MHz oscillator factory calibrated to $\pm 1\%$
 - External Oscillator support for crystals and resonators
 - 5 μ s wake-up from Sleep, 3.0V, typical
- Power-Saving Sleep mode
- Wide Operating Voltage Range – 2.0V to 5.5V
- Industrial and Extended Temperature Range
- Low-Power Power-on Reset (POR)
- Power-up Timer (PWRT) and Oscillator Start-up Timer (OST)
- Brown-out Detect (BOD)
- Watchdog Timer (WDT) with Independent Oscillator for Reliable Operation
- Multiplexed MCLR/Input Pin
- Interrupt-on-Pin Change
- Individual Programmable Weak Pull-ups
- Programmable Code Protection
- High Endurance Flash/EEPROM Cell
 - 100,000 write Flash endurance
 - 1,000,000 write EEPROM endurance
 - Flash/Data EEPROM Retention: > 40 years

Low-Power Features

- Standby Current: - 1 nA @ 2.0V, typical
- Operating Current:
 - 8.5 μ A @ 32 kHz, 2.0V, typical
 - 100 μ A @ 1 MHz, 2.0V, typical
- Watchdog Timer Current
 - 300 nA @ 2.0V, typical
- Timer1 Oscillator Current:
 - 4 μ A @ 32 kHz, 2.0V, typical

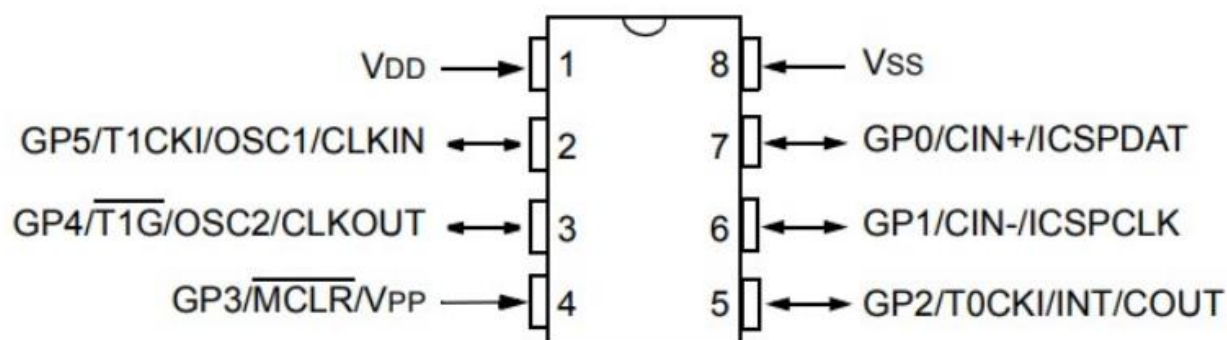
Peripheral Features

- 6 I/O Pins with Individual Direction Control
- High Current Sink/Source for Direct LED Drive
- Analog Comparator module with: One analog comparator
 - Programmable on-chip comparator voltage reference (CVREF) module
 - Programmable input multiplexing from device inputs
 - Comparator output is externally accessible

APPLICATION :

- 消費性電子產品
- 家電產品
- 3C 產品

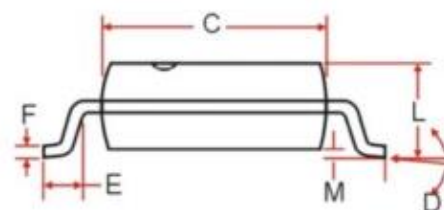
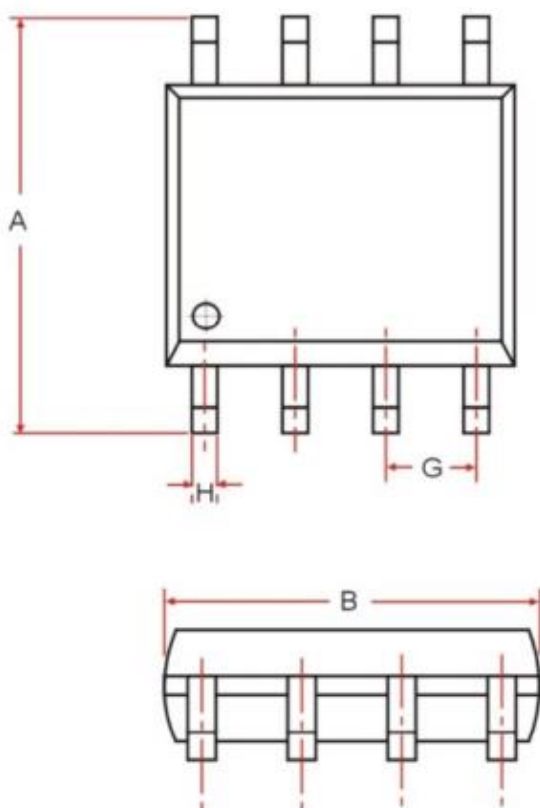
PIN Diagrams:



PIN	Name	Function	Input	Output	說明
1	V _{DD}	VDD	Power		Positive supply
2	GP5/T1CKI/OSC1/CLKIN	GP5	TTL	CMOS	Bidirectional I/O w/ programmable pull-up and interrupt-on-change
		T1CKI	ST		TMR1 clock
		OSC1	XTAL		Crystal/resonator
		CLKIN	ST		External clock input/RC oscillator connection
3	GP4/T1G/OSC2/CLKOUT	GP4	TTL	CMOS	Bidirectional I/O w/ programmable pull-up and interrupt-on-change
		T1G	ST		TMR1 gate
		OSC2		XTAL	Crystal/resonator
		CLKOUT		CMOS	FOSC/4 output
4	GP3/MCLR/VPP	GP3	TTL		Input port w/ interrupt-on-change
		MCLR	ST		Master Clear
		VPP	HV		Programming voltage
5	GP2/T0CKI/INT/COU	GP2	ST	CMOS	Bidirectional I/O w/ programmable pull-up and interrupt-on-change
		T0CKI	ST		TMR0 clock input
		INT	ST		External interrupt
		COU		CMOS	Comparator output
6	GP1/CIN-/ ICSPCLK	GP1	TTL	CMOS	Bidirectional I/O w/ programmable pull-up and interrupt-on-change
		CIN-	AN		Comparator input
		ICSPCLK	ST		Serial programming clock
7	GP0/CIN+/ICSPDAT	GP0	TTL	CMOS	Bidirectional I/O w/ programmable pull-up and interrupt-on-change
		CIN+	AN		Comparator input
		ICSPDAT	TTL	CMOS	Serial programming I/O
8	V _{SS}	VSS	Power		Ground reference

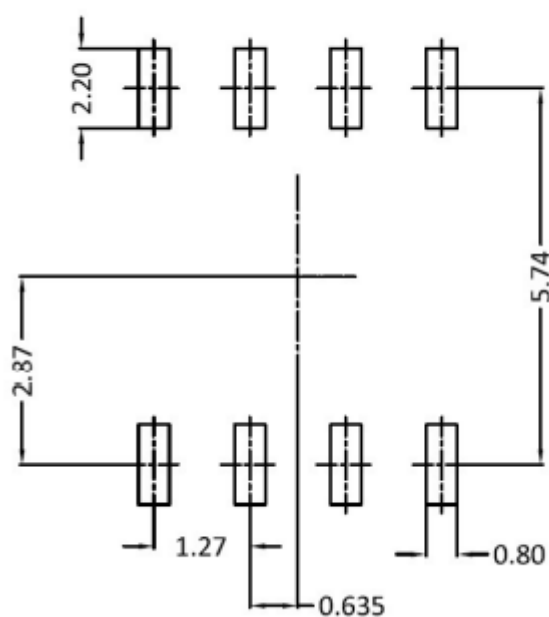
PACKAGE OUTLINE DIMENSIONS

● SOP-8 PACKAGE



REF.	DIMENSIONS	
	Millimeters	
	Min.	Min.
A	5.75	6.25
B	4.70	5.15
C	3.70	4.10
D	0°	8°
E	0.40	1.27
F	0.15	0.26
M	0	0.25
H	0.31	0.51
L	1.23	1.76
G	1.27 TYP.	

RECOMMENDED LAND PATTERN



UNIT: mm