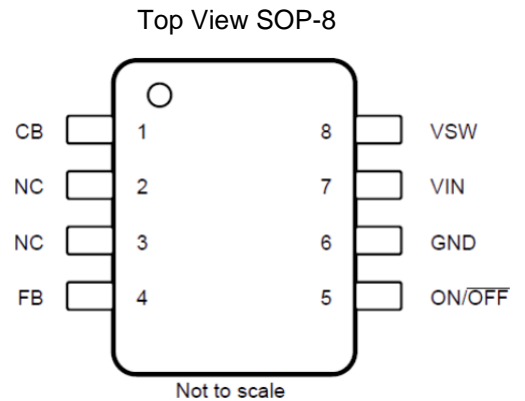


Product Introduction

LM2674 series is a DC/DC switching buck converter controlled by a fixed frequency of 260kHz PWM. It is mainly composed of internal frequency compensation, fixed frequency oscillator, built-in overcurrent protection, power switch control and other circuits. It can drive 500mA load with high efficiency, low ripple, good linearity and load adjustment ability. Only a few external components are needed to realize the function of DC/DC voltage reduction and stabilization, which is very simple and practical. PWM control circuit can adjust the duty cycle from 0 according to the load To 100% to achieve high work efficiency. It has an external enabling control opening function, which can realize the controllable switch between standby and work, making the application more flexible.



Product features

- Built in overtemperature shutdown function
- Built in overcurrent protection function
- Internal integrated efficient power switch
- Good linearity and load adjustment capability
- ON/OFF pin with hysteresis function
- TTL shutdown capability
- high efficiency
- Simple periphery
- Wide input voltage range: 7V~40V
- Fixed output voltage: 3.3V, 5V, 12V,
- Adjustable output voltage range: 1.21V~37V (adjustable)
- High precision output: $\pm 2\%$
- Fixed switching frequency: 260 kHz
- Maximum output current capacity: 500mA
- Minimum linear drop voltage drop: 1.5V
- Package form: SOP-8

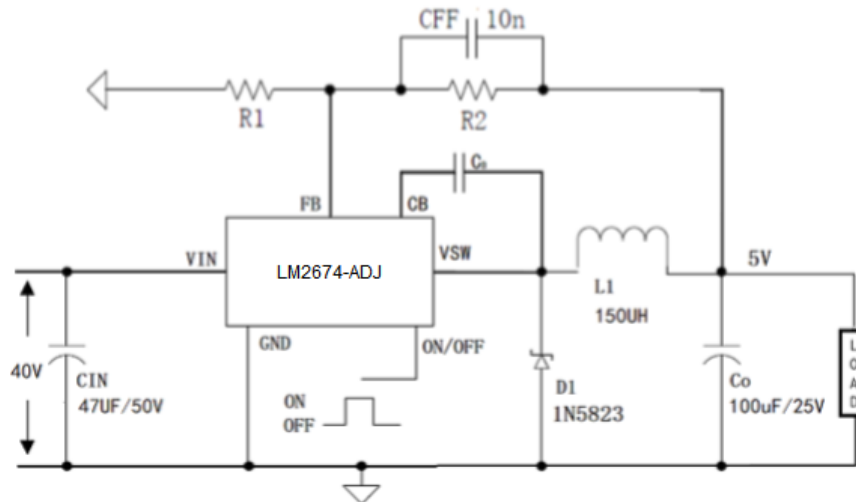
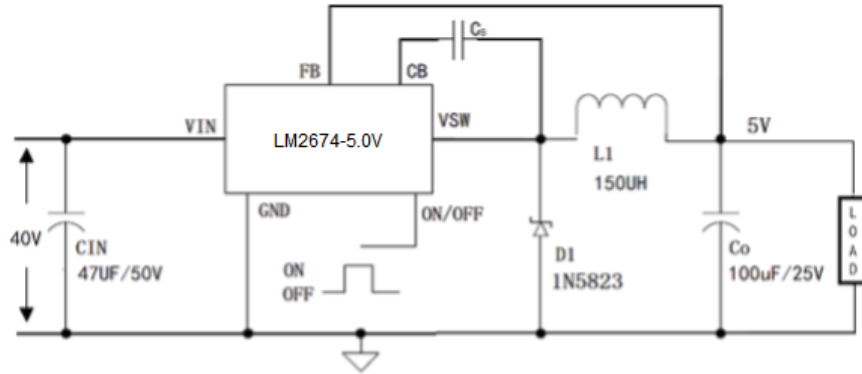
Product use

- LCD and LCD TV
- ADSL modem
- LED lights, LED backlight
- Digital photo frame
- Telecommunication/network equipment

Packaging form and pin function definition

Pin serial number	Pin definition	Function description
SOP-8		
1	CB	Boost capacitance terminal
2	NC	Empty port
3	NC	Empty port
4	FB	Feedback control terminal
5	ON/OFF	Enable terminal High=ON and low=OFF
6	GND	Power supply ground terminal
7	VIN	Positive terminal of power supply
8	VSW	Power switch output terminal (SW)

■ Application circuit



$$V_{OUT} = V_{REF} (1 + R2/R1)$$

C_B : 103/50V

Limit parameter

project	Symbol	explain	Limit value	Company
Voltage	V _{IN}	Input terminal voltage	-0.3~42	V
	V _{FB}	FB feedback terminal voltage	-0.3~V _{IN}	V
	V _{VSW}	Switch output terminal voltage	-1~V _{IN}	V
	V _{ON-OFF}	Enable enabling terminal voltage	-0.3~6	V
Maximum power consumption	PD	SOP8 package	500	mW
thermal resistance	R _{JA}	Put in air without external heat sink	30	°C/W
temperature	T _J	Operating temperature range	-40~125	°C
	T _c	Storage temperature range	-40~150	
	T _h	welding temperature	260	°C,10s

Note: Limit parameter refers to the limit value that cannot be exceeded under any conditions. Once the limit value is exceeded, it may cause physical damage such as product deterioration; At the same time, the chip can not be guaranteed to work normally under the limit parameters.

electrical properties

LM2674-3.3V (Ta=25°C)

project	Symbol	Test conditions	minimum value	Typical value	Maximum	Company
output voltage	V _{OUT}	V _{IN} =7V to 40V, I _{OUT} =20MA to500MA	3.234	3.3	3.366	V
Enable shutdown current	I _{STB}	V _{IN} =40V, V _{ON-OFF} =0V	-	100	200	uA
Quiescent current	I _Q	V _{IN} =12V, V _{FB} =8V, V _{ON-OFF} =5V,	-	3	7	mA
Output peak current	I _{CL}	V _{IN} =12V, V _{ON-OFF} =5V, V _{FB} =0, no L1 and D1	-	1.2	-	A
Output leakage current	I _{OL}	V _{IN} =40V, V _{ON-OFF} =0V, no L1 and D1	V _{VSW} =0V	-	10	uA
			V _{VSW} =-1V	-	2.5	10
Enable enable terminal current	I _{ON-OFFL}	V _{IN} =12V, V _{ON-OFF} =0.5V	-	4	15	uA
	I _{ON-OFFH}	V _{IN} =12V, V _{ON-OFF} =2.5V	-	1.5	15	uA
Enable effective voltage of enable terminal	V _{ON-OFFH}	V _{IN} =12V (ON)	1.5	-	-	V
	V _{ON-OFFL}	V _{IN} =12V (OFF)	-	-	0.8	V
Output saturation voltage	V _{CE}	V _{IN} =12V, V _{FB} =0V, I _{OUT} =500MA	-	1.0	1.5	V
switching frequency	f _{osc}	V _{IN} =12V	225	260	275	kHz
Duty cycle	D _{max}	V _{IN} =12V, V _{FB} =0V,	0	-	100	%
efficiency	η	V _{IN} =12V, V _{OUT} =3.3V, I _{OUT} =500MA	-	80	-	%
input voltage	V _{IN}	-	7	-	40	V

◆ LM2674-5.0V (Ta=25°C)

project	Symbol	Test conditions	minimum value	Typical value	Maximum	Company
output voltage	V_{OUT}	$V_{IN} = 7$ to $40V$, $I_{OUT} = 20mA$ to $500mA$	4.90	5	5.10	V
Enable shutdown current	I_{STB}	$V_{IN} = 40V$, $V_{ON-OFF} = 0V$	-	100	200	uA
Quiescent current	I_Q	$V_{IN} = 12V$, $V_{FB} = 8V$, $V_{ON-OFF} = 5V$,	-	3	7	mA
Output peak current	I_{CL}	$V_{IN} = 12V$, $V_{ON-OFF} = 5V$, $V_{FB} = 0$, no L1 and D1	-	1.2	-	A
Output leakage current	I_{OL}	$V_{IN} = 40V$, $V_{ON-OFF} = 0V$, no L1 and D1	-		10	uA
		$V_{VSW} = 0V$	-	2.5	10	mA
Enable enable terminal current	$I_{ON-OFFL}$	$V_{IN} = 12V$, $V_{ON-OFF} = 0.5V$	-	4	15	uA
	$I_{ON-OFFH}$	$V_{IN} = 12V$, $V_{ON-OFF} = 2.5V$	-	1.5	15	uA
Enable effective voltage of enable terminal	$V_{ON-OFFH}$	$V_{IN} = 12V$ (ON)	1.5	-	-	V
	$V_{ON-OFFL}$	$V_{IN} = 12V$ (OFF)	-	-	0.8	V
Output saturation voltage	V_{CE}	$V_{IN} = 12V$, $V_{FB} = 0V$, $I_{OUT} = 500mA$	-	1.0	1.5	V
switching frequency	f_{osc}	$V_{IN} = 12V$	225	260	275	kHz
Duty cycle	D_{max}	$V_{IN} = 12V$, $V_{FB} = 0V$,	0	-	100	%
efficiency	η	$V_{IN} = 12V$, $V_{OUT} = 5V$, $I_{OUT} = 500mA$	-	80	-	%
input voltage	V_{IN}	-	7	-	40	V

◆ LM2674-12V (Ta=25°C)

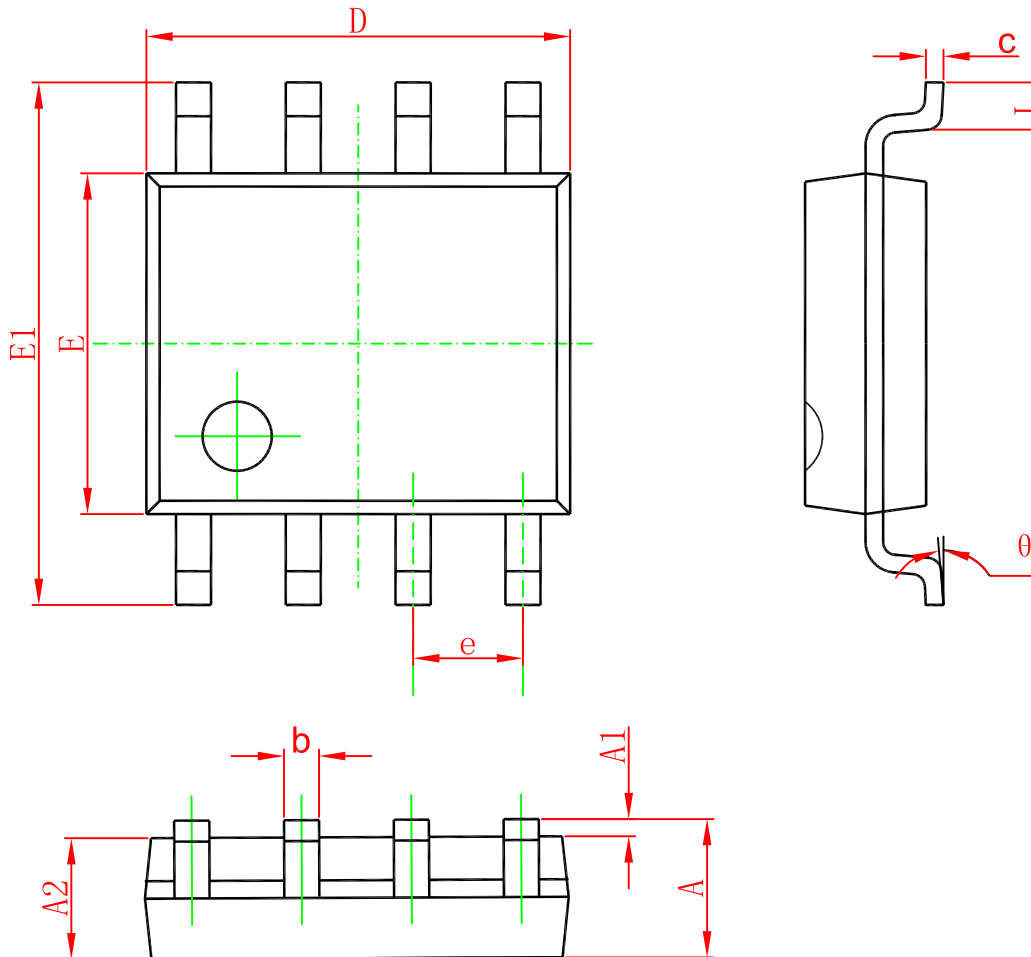
project	Symbol	Test conditions	minimum value	Typical value	Maximum	Company
output voltage	V_{OUT}	$V_{IN} = 14$ to $40V$, $I_{OUT} = 20mA$ to $500mA$	11.76	12	12.24	V
Enable shutdown current	I_{STB}	$V_{IN} = 40V$, $V_{ON-OFF} = 0V$	-	100	200	uA
Quiescent current	I_q	$V_{IN} = 15V$, $V_{FB} = 13V$, $V_{ON-OFF} = 5V$,	-	3	7	mA
Output peak current	I_{CL}	$V_{IN} = 15V$, $V_{ON-OFF} = 5V$, $V_{FB} = 0$, no L1 and D1	-	1.2	-	A
Output leakage current	I_{OL}	$V_{IN} = 40V$, $V_{ON-OFF} = 0V$, no L1 and D1	$V_{VSW} = 0V$	-	10	uA
			$V_{VSW} = -1V$	-	2.5	10
Enable enable terminal current	$I_{ON-OFFL}$	$V_{IN} = 15V$, $V_{ON-OFF} = 0.5V$	-	4	15	uA
	$I_{ON-OFFH}$	$V_{IN} = 15V$, $V_{ON-OFF} = 2.5V$	-	1.5	15	uA
Enable effective voltage of enable terminal	$V_{ON-OFFH}$	$V_{IN} = 15V$ (ON)	1.5	-	-	V
	$V_{ON-OFFL}$	$V_{IN} = 15V$ (OFF)	-	-	0.8	V
Output saturation voltage	V_{CE}	$V_{IN} = 15V$, $V_{FB} = 0V$, $I_{OUT} = 500mA$	-	1.0	1.5	V
switching frequency	f_{osc}	$V_{IN} = 15V$	225	260	275	kHz
Duty cycle	D_{max}	$V_{IN} = 15V$, $V_{FB} = 0V$,	0	-	100	%
efficiency	η	$V_{IN} = 15V$, $V_{OUT} = 12V$, $I_{OUT} = 500mA$	-	85	-	%
input voltage	V_{IN}	-	13.5	-	40	V

◆ LM2674-ADJ (Ta=25°C)

project	Symbol	Test conditions	minimum value	Typical value	Maximum	Company
Reference voltage	V_{REF}	$V_{IN} = 7V$ to $40V$, $I_{OUT} = 20mA$ to $500mA$	1.185	1.21	1.234	V
Enable shutdown current	I_{STB}	$V_{IN} = 40V$, $V_{ON-OFF} = V_{VSW}$	-	100	200	uA
Quiescent current	I_q	$V_{ON-OFF} = 0V$, $V_{FB} = V_{IN}$	-	3	7	mA
Output peak current	I_{CL}	$V_{ON-OFF} = V_{FB} = 0$, no L1 and D1	-	1.2	-	A
Output leakage current	I_{OL}	$V_{IN} = V_{FB}$, $V_{ON-OFF} = 5V$, no L1 and D1	$V_{VSW} = 0V$	-	10	uA
			$V_{VSW} = -1V$	-	2.5	10
Enable enable terminal current	$I_{ON-OFFL}$	$V_{IN} = 12V$, $V_{ON-OFF} = 0.5V$	-	4	15	uA
	$I_{ON-OFFH}$	$V_{IN} = 12V$, $V_{ON-OFF} = 2.5V$	-	1.5	15	uA
Enable effective voltage of enable terminal	$V_{ON-OFFH}$	$V_{IN} = 12V$ (ON)	1.5	-	-	V
	$V_{ON-OFFL}$	$V_{IN} = 12V$ (OFF)	-	-	0.8	V
Feedback terminal current	I_{FB}	$V_{IN} = 12V$, $I_{FB} = 1.3V$	-	85	-	nA
Output saturation voltage	V_{CE}	$V_{IN} = 12V$, $V_{FB} = 0V$, $I_{OUT} = 500mA$	-	1.0	1.5	V
switching frequency	f_{osc}	$V_{IN} = 12V$	225	260	275	kHz
Duty cycle	D_{max}	$V_{IN} = 12V$, $V_{FB} = 0V$,	0	-	100	%
efficiency	η	$V_{IN} = 12V$, $V_{OUT} = 5V$, $I_{OUT} = 500mA$	-	80	-	%
input voltage	V_{IN}	-	7	-	40	V

■ Encapsulation information

SOP-8



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
theta	0°	8°	0°	8°

Ordering information

Order code	Package	Baseqty	Deliverymode
UMW LM2674M-3.3	SOP-8	2500	Tape and reel
UMW LM2674M-5.0	SOP-8	2500	Tape and reel
UMW LM2674M-12	SOP-8	2500	Tape and reel
UMW LM2674M-ADJ	SOP-8	2500	Tape and reel

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